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The Builder.

AN

ILLUSTRATED WEEKLY MAGAZINE,

FOR THE

Architect, Engineer, Archæologist, Constructor, & Artist,

CONDUCTED BY

GEORGE GODWIN, F.R.S.

Fellow of the Royal Institute of Architects, and Honorary Member of several Societies.

" Every man's proper mansion-house, and home, being the theater of his hospitality, the seate of selfe-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kinde of private princedome, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

" Architecture can want no commendation, where there are noble men, or noble mindes."——Sir Henry Wotton.

" Our English word To Build is the Anglo-Saxon Bȳlban, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen ; and is applicable to all other things as well as to dwelling-places."——Diversions of Purley.

" Art shows us man as he can by no other means be made known. Art gives us 'nobler loves and nobler cares,'—furnishing objects by the contemplation of which we are taught and exalted,—and so are ultimately led to seek beauty in its highest form, which is Goodness."

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The Builder.

VOLUME FOR 1853.

WE commence to-day a new volume, the eleventh, and might be excused if we attempted a few propitiatory remarks; but as we last week expressed our desire and determination to maintain the character of our journal, and to render it more and more worthy of support, we shall not now trouble our readers with any fresh professions. Its appearance, it will be seen, has been improved by the provision of a "new fount of type" (a fount which, we hope, will long throw out useful knowledge and serviceable things), and we have in hand a number of illustrations of important and interesting subjects, foreign as well as British. The year 1852 has been a year of progress; and 1853 promises to be no less so. There is great activity everywhere: there is good seed a-sowing: let us hope that nothing may occur to lessen the harvest. We will, at all events, be amongst the earnest labourers, though we may not be the most successful gatherers.

The old year has gone out with a violent struggle, and has destroyed trees, ships, buildings, and life with its dying kick. The accounts which have reached us from various parts of the kingdom show that the amount of damage done is immense. Chimney stacks without number; the roof of the Roman Catholic church at Clifton, near Bristol; a new factory near Preston, 185 feet long, 64 feet wide, and 6 stories in height;* several houses; a chimney shaft 160 feet high in Ireland; the steeple of Trinity Church, Stockton-on-Tees; and the great roof of the Shoreditch Station of the Eastern Counties Railway, have been destroyed. The latter has long been in a bad state, and the directors may think themselves fortunate that it has been put out of the way without loss of life.

The Crystal Palace at Sydenham has suffered, and so, too, has the Building for the Great Industrial Exhibition of 1853, in Dublin, but in neither case severely. Enough, however, of this death-bed gift of '52 to the builders of the United Kingdom.

The inauguration of the two buildings last named will be amongst the most important and pregnant events of the year. May was named for the opening in both cases, and the arrangement will probably be adhered to for the Irish Exhibition. At Sydenham it would seem to be impossible.

The Dublin building is advancing very rapidly: the applications for space are numerous, and all the arrangements are taking their final shape. Mr. Roney flies off one day to Paris, and another to Germany, to put things in train for plenty of good contributions from abroad; and Mr. Deane labours in Dublin to make all matters smooth there.

In our present number we give an interior view of the Central Hall of the building, as designed by Mr. Benson, with its roof of laminated ribs, together with an outline section of the whole building.*

An external view and plan, with some particulars, were given in our last volume (p. 589), but we will repeat that the central hall will be 425 feet long, and 100 feet wide. Comparing it with the Transept of the Exhibition Building in Hyde-park, it will be found to be 17 feet longer, 28 feet wider, and 3 feet less in height.

For the fine-art department many noble works have been promised. The suggestion by Lord Talbot de Malahide that an endeavour should be made, in the Exhibition, to illustrate the early history of the country, has been favourably received. If aided as it should be throughout Ireland, this department will of itself justify a visit to Dublin. Lord Talbot says,—"I should recommend that a limited space should be set apart for models of ancient buildings, such as some of the most perfect and characteristic of our round towers, some of our finer castles, and, above all, the beautiful remains of Ecclesiastical Architecture, many of which are, I regret to say, in a very precarious condition. Accurate representations of the Rock of Cashel, Holycross Abbey, St. Canice, Kilkenny; Seven Churches, Glendalough; Clonmacnoise, Monasterboice, St. Doloughs, and many other similar structures, would be of incalculable value. A good model of the proposed restoration of our cathedral, St. Patrick's, might be made instrumental to an important national object. Casts of the curious and venerable tombstones which have been made to yield such interesting historical results to the inquiries of Dr. Petrie and Professor Graves, should be procured; and I have no doubt that Mr. Deane could assist us in obtaining casts of the unique collection of Ogham inscriptions in the possession of the Cork Institution." There should also be casts of the ancient monumental effigies scattered over the country, many of which are daily mutilated and destroyed. The few but valuable remains of Domestic Architecture should be faithfully represented. Kilmallock and Galway would afford good materials for this branch of the subject; indeed, everything should be collected which throws any light upon the arts of our forefathers. Glass, plain and stained, encaustic tiles, iron works, seals, arms,—offensive and defensive—all would add interest to the scene, and, in many instances, afford sound information to those who are striving to rediscover some of the beautiful processes connected with the manufacture of glass and pottery, the arts of dyeing, and the manipulation of metals which are now unknown.

"O! think it not an idle show, for praise, or pride, or pelf,
No man on earth who gains a good can hide it from himself;
By any thought that anything can any how improve,
We help along the cause of all, and give the world a move."

* See p. 9.

The avidity with which the multitude seek exhibitions of works of art and antiquities, was evident in the metropolis, on Monday last—"Boxing-day,"—when we paid a hasty visit to the British Museum, the Vernon Gallery, and other exhibitions in London, and found crowds everywhere. The department of practical art, Marlborough House, was full of visitors, all orderly and interested. The passage, or anteroom, containing examples of carpets, hangings, and "papers," made "on false principles," seemed very attractive. It was curious to watch the effect of the examination on some of the visitors. One intelligent-looking young wife, after an anxious study of the various specimens, murmuring, "Excellent representation of flowers from nature,—bad; good application of architectural forms,—bad,"—burst out in our hearing, with, "Dear me, dear me, what *may* we have?" The authorities have put together in one chamber the casts of *Renaissance* ornaments belonging to the department, as part of an intended complete series.

At the British Museum every gallery was full of well-behaved visitors; so, too, at the National Gallery, where the attendants had to point out to many the "damaged" Claudes, concerning which so much has been published, not without advantage, it may be hoped, although some of the letters were far from creditable to the writers. Agreeing, as we must, with those who reprobate the "flaying process," we are bound to say that the inscription on one of the Claudes, which has been appealed to in proof of the assertion that the pictures had been injured, is as legible now as it was before the picture was cleaned.

What the views of the present Administration on matters of art and science may be we have yet to learn. It presents the most remarkable combination of men that was ever formed, but we need not concern ourselves with it just now further than to mention, that Sir William Molesworth has been appointed Chief Commissioner of Works and Public Buildings, in the place of Lord John Manners. We would say to some high in position, what the *Times* said admirably the other day to the working mass of the people, urging them to learn to value other studies than those which are most prominent in our Parliamentary reports:—"They should learn that there are things better even than office, power, remission of taxes, and Parliamentary reform—viz. science, literature, poetry, philosophy, and truth. We don't ask our working men to give up politics, or to cease from pursuing political objects. But we ask them to follow the example of all our great statesmen, and have other tastes and other studies besides the mechanical on the one hand and the political on the other."

OLD BRENTFORD: COMPETITION.—In answer to advertisement for plans for a new district church in this place, nineteen designs were submitted. From these the committee have selected one by Mr. Raffles Brown.

* According to the newspapers, the second story of the building was fireproof, and the strong iron beams by which it was supported were broken by the weight of the falling mass. The staircase and the engine-house, which are situated at the south end of the building, are the only parts of it which are left standing, they having been protected from the violence of the gale by a scaffolding. The contractors for the building were Mr. Armstead, Preston, for brickwork, masonry, &c.; Mr. Brown, Preston, for joiners' work; and Mr. John Stevenson, Preston, was the architect. "By the contract it was provided that 30*l.* a week should be forfeited by the contractor, in case of its not being roofed in by the last week in September, and as this has not been fulfilled, the loss, it is said, will fall upon the contractor."

WORKS AND ANTIQUITIES IN THE PROVINCE OF ORENSE, IN THE KINGDOM OF GALICIA, SPAIN.

At the ordinary general meeting of the Royal Institute of British Architects, on the 13th ult. Mr. G. R. Burnell read some observations made during an excursion in Orense.

The town of Vigo, he said, is built upon the side of a small spur from the Montes Santiagaisco, and rises very abruptly from the water's edge towards the citadel, which crowns the hill at a height of about 250 feet. The streets run up the faces of the rock with little deviation of a nature to overcome the difficultics of the ascent: they are narrow, tortuous, without footpaths, but paved from house to house with granite slabs, varying from 18 inches to 2 feet in width, and laid with a fall towards a species of channel in the centre, spaces being left between each stone to allow the water to fall through. As the prevailing gradient of the principal streets is not less than 1 in 12, and is often steeper—so that the causeway is formed in steps—it is impossible to travel in carriages in any part of the upper town.

There is very little architectural pretension about the houses or public buildings, nor are there any works, either engineering or architectural, in Vigo which merit prolonged examination. The principle which seems to regulate the style of construction of the houses is to secure the greatest amount of coolness in the interior; and this is effected by making the entrance to the lower floor at the end of a corridor, or vaulted passage, which again serves to support a balcony on the first floor. In the streets, the footpaths are often carried through these arcades, and are thus sheltered from the effects of the climate in a similar manner to that adopted in many other towns of Southern Europe. The houses are rarely of more than two stories; the walls entirely built of granite, the roofs tiled, and the interiors rendered with lime and plaster. The masonry is admirably performed, all the mouldings and carving being given with a remarkable perfection of execution. It is true that the granite of the neighbourhood, of a highly porphyritic nature, is easily worked; but the skill of the Gallego masons in handling this material must principally be ascribed to their practice being entirely confined to it. Be the cause what it may, they work the granite quite as easily and as cheaply, everything compared, as our masons do the sandstones of Yorkshire. Carpenters' and joiners' work is far from being on the same footing, either here or anywhere in the province of Orense; indeed, together with smiths' work, or any other branch of construction than masonry, the building trades must be considered barbarous in the extreme. As the houses generally are uncomfortable, badly arranged, and often repulsive, the consideration of the domestic architecture may be dismissed by saying that its study can only afford lessons of what should be avoided.

The road from Vigo to Orense passes over the Montes Santiagaisco to Porino, situated on the Rio Louro, one of the affluents of the Minho: it is thence carried over a depression in the Montes Picona y Salceda to Puente Areas.

Orense boasts of a cathedral, dedicated to St. Martin of Tours, restored and brought almost into its present state in the year 1219, with the exception of the two chapels of the Santo Cristo de Orense and of S. Juan Bantista. The ancient cathedral consists of a nave, with two side aisles, a transept, and a chancel; and over the intersection of the transept with the body of the church rises an octagonal dome or cimborio. The chapel of Sta. Maria la Madre is much older than the rest of the cathedral, and is stated by Bermudez to be of the beginning of the eleventh century. The chapel of the Cristo is of the sixteenth, and that of S. Juan Bantista of the fifteenth century. The architecture of the cathedral is excessively rich and beautiful, particularly if allowance be made for the difficulty of working the granite of which it is executed. The proportions, however, are small, nor does the general plan and distribution of the church differ from those observable in others of the same date; but the ornamentation is remarkable, and presents a richness of effect, combined with elaborate detail, only to be found in the works of architects practising, perhaps, one hundred years later in the north of Europe. Evidently the Moorish civilisation had, perhaps unconsciously, affected the Christians of the Galician provinces, and the decidedly Moorish character of some of the early instances of the introduction of the arch struck from two centres, to be found in Orense Cathedral, would induce me to look to that race as the originators of the Gothic arch, rather than to endeavour to discover the first germs of the latter in the interlacing of semi-circular arches. Be this as it may, the occurrence of the arch struck from two centres, in some of the details of this cathedral, executed in 1219, confirms the opinion of the gradual development of the Mediæval architecture from the south towards the north.

Behind the age as the domestic architecture of all Galicia may be, there are, however, some points in which that province, as indeed all Spain, is in advance of England; to our abiding shame be it spoken. Neither intramural sepulchres, nor intramural markets, nor abattoirs, are to be found, whilst London continues to be defiled by all. The cemetery, or Campo Santo, of Orense is on the eastern skirt of the town; large, airy, and pleasantly situated. The abattoirs are placed at the western extremity, on the banks of a small affluent of the Minho; but it is to be observed that the same correct judgment which led to their being placed as they are, has not presided over their execution: they are very inconvenient, and all the offal is wasted.

My journey led me beyond Orense, through a small village about a mile and a half from the town, remarkable for an old Romanesque church, built of rubble granite, laid dry, in the identical style of the newly-revived Cyclopean masonry of the Germans. It is apparently of the eleventh century, and has a fortified tower, or at least there are remains of machicolations on two sides. The road then continues to Allariz, a small town on the Arnoya, one of the principal affluents of the Minho. Allariz is walled, like most Mediæval towns of this country, and contains two very curious Romanesque churches, of small dimensions, but fraught with interest to the archæologist. The church in the upper town is particularly remarkable on account of some mural monuments of knights, represented cross-legged, and let into semi-circular recesses in and on the exterior walls of the church. There is also at Allariz a nunnery, with a large church in the style so prevalent throughout this district, characterised by broad surfaces of wall with inclined basements, flat roofs with great projections, and small external openings.

The Spanish government is now quietly and wisely concentrating all its energy for the purpose of developing the means of internal communication. They are constructing a main artery, already completed in parts, between Vigo and Madrid, with a branch to Pontevedra. The works are being executed under the orders of the "Ingeniros de los Caminos, Canales y Puertos," with remarkable skill and activity, considering the defective organisation of such works in Spain, and the absence of large contractors.

Some local reason can always be found for peculiar modes of construction, and in this case the adoption of the so-styled Cyclopean masonry is to be accounted for by the price and quality of the only lime to be found in the district. All the lime, in fact, which is used in Galicia comes from Lugo, and is obliged to be carried on mules' backs. It is a very pure rich lime, totally devoid of hydraulic properties, being obtained from the calcination of a pure carbonate of lime, almost equal to marble. The use of such a material in positions where it would be exposed to the action of running water, is of course inadmissible; and we accordingly find that for ages the Galician masons have used the identical mode of execution which has been recently paraded as a new exemplification of German ingenuity.

However this may be, the bridges on the road from Vigo to Orense are elegant in their proportions, of a broad, simple, massive character, and executed with a remarkable degree of perfection.

The earth-works are executed in a very primitive style: a tool called the "azadon," participating of the character of the hoe, the spade, and the pick, is used by the excavators to remove the earth into baskets called "cestos," containing about three-quarters of a cubic foot each. When these baskets are filled, they are hoisted upon the heads of women, and by them carried to the place of deposit.

The roadway itself, or the metalling, is usually thus executed: rubble granite is laid in a bed formed to receive it in the line of road, and broken, in place, into lumps not exceeding from 2½ to 3 inches in diameter: the thickness of this course of broken stone is made 7 inches in the centre and 5 inches at the sides. Over this a second layer of broken stone, 5 inches thick in the centre, and 4 inches at the sides, is laid: this stone is *not* broken in place, and is only from 1½ to 2 inches in diameter. Sand is spread over the surface of the second layer of stone, and it is compressed by the cylinder before being opened for traffic.

One very interesting observation is to be made with respect to the general character of the fauna of this part of Spain (and which confirms other observations I have made in different parts of England and Scotland), viz. that the invariable softness of the waters is prejudicial to animal life. As the Board of Health have taken upon themselves to assert, in contradiction to every authority who has treated the subject of the physiological action of water upon the human frame, that soft waters are the best and wholesomest, it is important that the public should be informed of everything wherein their theories appear to be exposed to doubt.

I have noticed in Spain, in the granite regions near Plymouth in England, and Cherbourg in France, in the mill-stone grit districts of Yorkshire, and in some parts of Scotland, that the glandular affections are very prevalent. The hay of Galicia is not of a quality able to support the horses, and, generally speaking, the race of horses used in the country is of a very inferior description, and maintained with difficulty. Singularly enough, this fact is confirmed by the observations made by the cavalry officers stationed at Guildford during the last war, as recorded in Britton and Brayley's History of Surrey. It was found, in the latter case, that the hay obtained from fields irrigated with soft waters from the Bagshot sands—the precise source recommended originally by the Board of Health—was positively injurious to the horses, and it was finally excluded from the barracks. There is in the streams of Galicia a remarkable scarcity of fresh-water shells, and I have observed the same fact upon the silicious sands of the Bagshot heath, and in the mill-stone grit districts of Yorkshire: it would appear, in fact, that this class of animals cannot obtain in these districts the materials necessary for the secretion of the elements of their external skeleton. Some valuable plants, such as the water cress, the trefoils, lucernes, &c. are entirely wanting in the soft water regions; whilst upon human beings the effects produced by an absence of calcareous matter in the waters are as decidedly characteristic of a low tone of the system, as those produced by too great a proportion of that substance are characteristic of an excessive development of the sanguine temperament.

FALL OF A TUNNEL.—Waller's Ash tunnel, the longest tunnel on the South-Western Railway, situated between Winchester and Andover-road, fell in on Wednesday in last week.

THE MAGNETIC AND ELECTRO-MAGNETIC TELEGRAPHS.—The English and Irish Magnetic Telegraph Company, it appears, have their main lines already extensively ramified throughout the country: they are being laid underground.——The European and American Electric Telegraph Company, since November last, have had their offices, Cornhill, connected, by subterranean line, with the wires of the Submarine Telegraph between Dover and Calais. On the laying down of the submarine cable between the South Foreland and Middlekirk (near Ostend), shortly expected, the company will have a direct communication with Belgium. It is also proposed on the part of this company to commence laying down a duplicate line of telegraph along the old coach-road, underground, between London, Liverpool, Manchester, and Birmingham, at a cost of 50,000*l*.

SCHOMBERG-HOUSE, PALL-MALL.

Some of the few remaining old houses of London have an interest apart from that which attaches to them as examples of the mode of building at their respective periods, and this is particularly the case with Schomberg-house, Pall-mall, a sketch of which, as it originally appeared, we gave lately.* Until the recent alteration of the east wing, it was the best specimen in London of a house of Queen Anne's time, or late in the reign of William III. to which latter period it is assigned. It was built probably by the third Duke of Schomberg. It had a large garden that abutted upon the private pleasure grounds of St. James's Palace, but this has since been enclosed, and now forms a portion of Marlborough-house. One of the first houses built in the "Mall" was the house given by Charles the Second to Nell Gwynne, and the freehold of which was granted by the Crown. The garden of the latter adjoined that of Schomberg-house, and both had a raised terrace at the back overlooking the royal pleasure-ground. Schomberg-house was substantially built, and the cost of its erection must have been very considerable. The beams supporting the floors are of solid oak, some of them 36 inches thick, and they are now, after a lapse of say one hundred and sixty years, in excellent preservation. The house appears to have been beautified by the Duke of Cumberland (of Culloden memory), "The Butcher," as he was called, by whom it was subsequently occupied.

In this house "Astley, the Beau," as he was termed, lived for many years. This eccentric individual built a suite of apartments upon the centre of the roof facing the park, which he termed "his country house," and which were accessible by a private staircase, with a door in the wainscot.

The vicissitudes through which the house passed in subsequent years were remarkable, but its history appears always to be associated with eminent persons. During the rebellion of Lord George Gordon the house was threatened with destruction, but it survived the troubles of that stormy period, and long was spared to become a store-house of the arts and a rendezvous for all who were celebrated in the world of literature and *belles lettres*. Richard Cosway, the painter, occupied part of the building, and during his tenancy his wife "received" the *dilettanti* of the day. Gainsborough, in later years, took up his abode in one of the compartments, and enjoyed the society of all the celebrities of the time, including the friendship of the fascinating Duchess of Devonshire, who sat to him for her portrait. The portrait, however, was never finished, Gainsborough declaring that "she was so lovely he could not paint her." He died here. The eccentric Dr. Bowyer also resided in Schomberg-house, and delivered his lectures here. About the year 1750, a portion of the house had been converted into a place of business by Messrs. Dyde and Scribe, who were amongst the first persons to open a shop in the immediate precincts of the palace. Another portion was rented by Messrs. Payne and Fosse, the eminent booksellers, whose collection of rare books was the largest in the kingdom. Messrs. Dyde and Scribe were ultimately succeeded by the late Mr. Harding, of the well-known firm of Harding and Co. by whose survivors the business is still conducted. During the elder Mr. Harding's lifetime, it was the custom of King George the Third, accompanied by the princesses, to visit the shop, and make their own purchases. On these occasions it was the practice to close the shop during the visit of his Majesty and the Royal Family, in order that they might not be inconvenienced by the presence of strangers. The old king used to take considerable interest in the various articles submitted for his approval, and the princesses were in the habit of wandering behind the counters, and gratifying their curiosity by an unceremonious inspection of whatever attracted their attention. The east wing of Schomberg-house was recently pulled down, and a substantial and handsome building has been erected for Messrs. Harding, under the direction of Messrs. Heneker and Lawford, architects.

Near here lived Dodsley, the intelligent publisher, who did so much in promoting literature at that time. He was well known as a miscellaneous writer, and began life as a footman in the family of Charles Dartiquenuve. Even in this servile situation he indulged in his natural talents for poetry and satire, and wrote "The Muse in Livery, or the Footman's Miscellany," and other works. Dr. Johnson, in 1738, sold him his first original publication for ten guineas: before this time he had published various works by Pope, Young, and Akenside. In January, 1741, he commenced the "Public Register." He also undertook the publication of the "Literary and Historic Register," which numbered amongst its contributors Horace Walpole, the two Whartons, Akenside, South, Smart, Gilbert, Cowper, William Whitbread, Morris, and Campbell. For a long period he combined in a happy manner the somewhat opposite callings of author and publisher. He acquired by his trade a handsome fortune. He bore an excellent character, was modest in his prosperity, grateful to his early friends and patrons, and disposed to bestow on others the same kind assistance which he himself had experienced. He died at Durham, 1764.

It is believed by some, that the first gas retorts used for lighting the London streets were fitted up in Schomberg-house; but we are unable to say so positively. It is certain, however, that Winsor, to whom we owe the introduction of gas, having first lighted the Lyceum Theatre in 1803 and 1804, shortly afterwards made Pall-mall the scene of the first practical illustration of his scheme for lighting the streets. The proposition was pronounced absurd even by the great chemist of the day; and a tablet to Winsor's memory in the cemetery of *Père la Chaise* shows how little he gained by his ingenuity and perseverance.

* Vol. X. p. 801.

THE DISCUSSIONS AT INSTITUTION OF CIVIL ENGINEERS.

DRAINAGE.

I notice that in a late number you report the discussion which took place at the Institution of Civil Engineers upon the all-important question of "Town Drainage."

I have the honour to be a member of this valuable institution, and in that capacity I feel no hesitation in stating that you cannot render it a greater service, or more certainly enhance its real and legitimate objects, than by publishing from time to time a correct report of its proceedings; for, I must confess, I think a little "daylight" will do a great deal of good.

The question of "Town Drainage" is of far too much public importance to be satisfactorily disposed of with only five or six hours' discussion, and that spread over three weekly meetings. The question ostensibly under discussion was, "The Drainage of Towns," but it appeared to me incidentally to be "The Institution of Civil Engineers *v.* Gwydyr House;" but the speakers did not "speak out:" they probably felt themselves rather trammelled by the great names on either side.

The truth is, that some of the leading civil engineers have been very unceremoniously referred to in the Report of the General Board of Health, dated Gwydyr House, May 28th, 1850. If I be correct in my assumption, then, I am of opinion that the second great "Battle of the Gauges," viz. "Great Brick Drains *v.* Little Pipe Drains," should at once be manfully but temperately fought, so that the conflicting opinions of the gentlemen employed by the Board of Health, and the admittedly eminent engineers referred to, should be carefully and dispassionately weighed and considered, with a view of submitting to the public every point on either side which may be found essentially and practically good.

I consider the columns of your journal, of all others, the best adapted for conveying to the public generally the best method of draining towns, &c. &c.; and, this being my opinion, I will, with your assistance, endeavour to promote that public attention and general discussion which this important subject demands.

An Engineer.

THE DRAINAGE QUESTION.

Having something to do with house drainage, I read with interest the late discussion on the merits of the two systems—pipe sewers and brick sewers. I could not discover from the remarks of any of the gentlemen who took part in that discussion, that they felt the importance of strict attention to the construction of the *traps* used at the inlets of house drains. I am inclined to believe that where stoppages have occurred in branch drains *constructed of pipes*, from buildings of any kind, they might be traced to the want of proper attention to the size and form of the traps. In your paper of December 4th, a speaker is represented as saying, that "in Edinburgh a quantity of pipes had been laid, 10 inches in diameter, with 6 inch side pipes: in twelve months the whole of the side pipes were stopped up." If these "side pipes" were branch pipes from houses it would be satisfactory to know how the inlets to these branch drains were constructed. Put a 6-inch trap of uniform bore throughout into a 6-inch pipe, and want of carelessness on the part of servants or others might soon stop the drain; but stoppage ought to be rendered next to impossible, by limiting the size of the trap to 4 or 4½ inches: any stoppage must then necessarily take place in the trap, whence the soil could at once be removed, as no bulky substance passing through a 4-inch space would be likely to stop in a 6-inch space; but I conceive all syphon or grid traps should be made gradually enlarging towards the outlet. If this principle were generally adopted in the application of stench traps to pipe drains we should rarely hear of stoppages.

Where large pipes are applicable for trunk drains facilities for discovering stoppages, should they occur, may be easily provided for by laying at intervals a pipe with an aperture opening upwards, covered with a stout saddle-piece, easily removable without shifting the tube. No doubt many of the failures referred to were the results of violating common sense principles. I happen to know of a public building drained with *3-inch pipes*, into which are led by some means the sewage from closet-pan traps, 4-inch bore: these soon will be stopped, to the unjust condemnation of the pipe system of drainage.

W. B.

I am no advocate for the Board of Health, but if it is right that that body is to be opposed, it will be so most effectually, not by a system of *negative* arguments, but by candidly admitting where they are right, and, where they are wrong, not simply proving them to be so, but also showing the principles which ought to be substituted for theirs; for the imperfections of any undertaking of this nature form no argument against it, provided no practicable means are shown whereby these imperfections can be done away with.

And here I would remark, that in considering the general principles upon which such a system of drainage should be carried on, our first step should be, not to weigh the relative expensiveness of two methods, but to inquire what is required of a perfect system of town drainage; and then, having clearly before us the objects to be attained, or as nearly as possible approximated to, to consider what means of making such approximation are at our command, and to weigh well whether the saving involved in any departure from the strict rule will counterbalance the inconvenience resulting from it.

With this borne in mind, then, I would remark, that the objects to be effected by a perfect system of town drainage are threefold, viz.—

1st. To carry off the surface water, or urban rainfall.

2nd. To afford an outlet for land springs, or that part of the rainfall which percolates into the soil.

3rd. To convey away the sewage from houses, and other injurious or offensive matters produced within the town.

I think that most persons will agree with me that these objects require each of them different conditions for effecting them in a perfect manner; and I shall accordingly proceed to notice

the principles which should guide an engineer in providing for each of them separately, before proceeding to inquire how far, and with what propriety, they can be conjoined in one system of arterial drainage.

Suppose, then, in the first place, that we have to lay out a system of drains with the sole purpose of carrying off the *urban rainfall*. It is evident that the system, to be *perfect*, must be capable of carrying off the rainfall as rapidly as it flows from the ground; and that, in order to ascertain the maximum quantity to be provided against, we must have recourse to the experience of former years with regard to the greatest quantity which has fallen within a given time, and provide against a recurrence of at least a similar fall. It would also be useful to inquire what proportion of these rainfalls will flow off the surface; but although there are, no doubt, many causes in operation which will absorb a considerable proportion of it, still there is such a large, and in many places rapidly increasing, area of town surface, composed of slates, pavement, &c. that it will but be erring on the safe side to suppose that the whole of the rainfall is precipitated at once into the sewers.

We must also bear in mind the fact, that the waterways, as far as surface drainage is concerned, are not to be calculated for a uniform quantity, because these sudden and violent falls of rain do not occur at a period when the sewers are otherwise full, but immediately after the water has passed away the sewer will probably be nearly empty; and this fact has this important bearing, namely, that the magnitude of the sewers will not be proportional to the quantity of water they have to pass, but regard must be had also to the time which this quantity takes to pass; and it is clear then that a perfect system will provide against any excessive quantity of water being brought into any one drain from a large area at, or nearly at, the same moment.

If the quantity flowing down the sewers were constant, then the highest tributary sewers would be as much smaller than the main sewers, as the quantity passing through them was smaller, and the dimensions at any point would bear nearly a constant ratio to the extent of drainage area, inclining towards that point; but, inasmuch as the drainage of individual districts may be led into the main outlet at different times, it is evident that on this view the main sewer would not require to be proportionately larger.

Now, since the area of a sewer necessary to pass the rainfall as it flows off the surface must be enormous, and involve a very great expense, it is an object of great importance to diminish the size, and therefore we have one important requirement of a perfect system of drainage for the urban rainfall—that no sewer should have to pass at any one time the drainage of a large area.

It will be obvious that this must have an important bearing upon the laying out of arterial lines of drainage, because, if we suppose a case in which the tributary sewers, from a nearly circular space, radiate to a point before entering into the rain drain, we have the very worst system in so far as this requirement is concerned; because the flow from each district round a wide circumference has an equal distance to traverse, and the consequence is, that the water arrives at the point of junction nearly at the same instant, and the main sewer must be of sufficient dimensions to pass the whole at once.

Now, had the drainage of the same nearly circular space been carried off by a spiral drain instead of converging ones, so that the water flowing from one district, had to travel through the whole area before reaching the main conduit, while that from another was discharged almost instantly, and between these two there lay many other small districts, the drainage of which occupied each a different time in passing along,—we have the best fulfilment of the condition under discussion, for the drain would require to be but little larger below than above.

It therefore appears that, in so far as the carrying off the flood waters from the surface is concerned, a system of drains converging to a point, or into a main sewer, is open to most serious objections; and that, to ensure economy in the size of the conduits, it is necessary that the area drained by them should be long and narrow, as this condition fulfils the requirement we are now considering in the most complete manner.

There are, however, as I before hinted, considerations which require that a drain must, however laid out, increase, to a certain extent, according to the drainage area, the most prominent of which is this: in cases of long-continued and heavy falls of rain, the drain must pass the water much more nearly as it falls, as the water still continues to flow into the lower part of the conduit long after the drainage from the higher portion has reached the same spot. Nothing but a careful study of the climate of the particular locality can enable us to judge of the increase in the dimensions of the drains; and the absence of sudden and very violent falls of rain, may, in many cases, justify a departure from the general rule of not making them convergent.

The next point to be attended to is the outlets of the drains, and these, it is evident, as far as the comfort and health of the inhabitants are concerned, may be at any convenient spot, since the drainage, even of a town, need never be of a character to create a nuisance. If, however, the town is situated on the banks of a navigable river, or if it be desired to discharge the drains into docks, objections might be taken, on account of the *débris* of the streets, &c. which would be washed down by the water, creating shoals, and thus impeding the navigation.

We may grant that the discharge of such waters into docks is inadmissible; but to estimate the amount of injury which would be inflicted on a navigable river, we have to look, first, to the quantity of this *débris;* and, secondly, to the scouring power of the river.

The impurities suspended in the flood waters would consist principally of the *débris* of the streets, *i. e.* the dust and grit ground off the stones by the action of the wheels, along with some animal and other matters, which, from their lightness, can have no injurious effect. These matters can amount certainly to not more than the total quantity of stone used for paving in the town; and it will be evident, on the slightest reflection, that this must, in the majority of cases, bear but a trifling proportion to the quantity of earth held in suspension by the waters of a river during floods; and we are therefore justified—considering that by far the greater portion of this *débris* is in a state of very fine division, and that it would be always discharged into the river during rainy weather, at which time the river would possess the greatest amount of scouring power—in coming to the conclusion that no reasonable objection can be urged against the practice of discharging the flood waters of a town in general into a navigable river.

As to the construction of such drains there does not appear any valid reason why they should be covered. The water in them would be nearly pure, or at the worst rendered turbid by mud from the streets, but free from the noxious exhalations arising from house sewage; and therefore economy would dictate their being made open, and pitched, provided they were not on the line of the streets. In many cases, of course, it would be necessary that they should be arched over, but I speak just now solely with respect to their efficiency as drains.

Whether it would be desirable to make them permeable or impermeable would depend in a great measure upon the level at which they were laid; but assuming that they were low enough to afford an outlet for the land drainage, then it would be desirable that they should be permeable, in order to draw the moisture from the surrounding soil.

CLOACA.

FREE LIBRARY AT NEWCASTLE-UNDER-LYNE.—The establishment of a free library here, on the principle of the Manchester and Leeds Libraries, having been proposed, a public meeting was held on Thursday in last week, when resolutions approving of the object, and requesting the town council to take the necessary steps in the matter, were unanimously carried, and a committee appointed.

CARBONIC ACID IN VENTILATION.

ONE of the most perplexing positions in any discussion is when either an opponent or a third party introduces, as a conclusive and invincible argument, something exquisitely forceless, irrelevant, inconsequent, or absurd. To go about seriously to disprove such a pozer is difficult from the mere ludicrous weakness or inconsequence of it. Such is nearly my present position with regard to "Vice Cotis," a *Tertium Quid* in the discussion with "E. L. G." It is in the tail of his interlocutor that he seems to think the great sting—or rattle rather—of his argument lies,—"cold water," merely, issuing from its other extremity. Carbonic *oxide* having been lugged in, somehow, previously, as a violent poison,—which it may be for all that I know, notwithstanding very competent authority to the effect that it must be ranked amongst "negative poisons;" and the comparative merits, or demerits rather, of carbonic acid and carbonic oxide having been gravely discussed in the respectable name of Regnault, a French chemist, whom he quotes, "Vice Cotis" raises his sledge-hammer thus:—

"Carbonic acid, as we all know, is heavier than atmospheric air, *but* carbonic oxide is specifically lighter ·967). *Thus* these two gentlemen, so eager to convict each other on *minor* matters, have both started from a *fundamental* error."*

Now, pray "Vice Cotis," where did this sledge-hammer fall? You did not design it to fall on your own toes, I dare say: yet where else *has* it fallen? What *are* these "minor matters?" Where *is* this "fundamental error?" What, in the name of all that is absurd, has carbonic *oxide*, or *its* specific gravity, or *its* poisonous nature, to do with it? Are we to understand it to be "Vice Cotis's" deliberate opinion that we should have been engaged in discussing carbonic *oxide* and its ventilation as the *major* proposition, and have let carbonic acid drop into the *minor?* Did "Vice Cotis" ever hear of carbonic *oxide* being the essential poison of the foul air expired from human lungs? Is he prepared to prove it? Or does he adduce the authority of Regnault by way of demonstration?

Festina lente, "Vice Cotis:" not so fast, my *Tertium Quid*. It is not the ventilation of French suicidal closets, and charcoal pans and stoves and furnaces, that "E. L. G." and "J. E. D." have been discussing at all, but the ventilation of apartments and buildings from the foul air generated in human lungs. Carbonic acid gas is the main—the major agency to be dreaded and dealt with in such a case; and, as for carbonic oxide, it is not even a *minor* subject for consideration here, having, in fact, nothing to do with it,—literally *nil*.

But I see! Regnault has happened to say that "it is to carbonic oxide we must attribute the uneasiness and headache we experience in an *ill-ventilated room—near an open charcoal furnace*," and hence "Vice Cotis" has sagaciously concluded, that since "E. L. G." and "J. E. D." were dealing, somehow, with the ventilation of rooms,† they ought, as a matter of course, to have been discussing the subject of carbonic *oxide*, more particularly since it is Regnault's opinion that carbonic acid "exercises no deleterious action on the lungs." Rare reasoning! Logical inference! Shall I tell you, "Vice Cotis," where and why it *may* be that "carbonic acid" can exercise no deleterious action on the lungs? Let me first, however, quote the passage itself *ab initio*, as "Vice Cotis" has it:—

"Carbonic acid gas does not support respiration. Animals *plunged in it die very soon* from asphyxia. Nevertheless, this gas exercises *no deleterious action on the lungs.*"

Here it is clear that Regnault is speaking of carbonic acid *per se*, and of no mere mixture or dilution of it. Now there is one very good reason adduced by various competent authorities, and probably by Regnault himself, why carbonic acid gas may exercise no deleterious action on the lungs, even while killing people "very soon,"—namely, because the epiglottis

* Vol. X. p. 812.
† Of public buildings, in fact, especially, and the self-ventilation requisite mainly where and when fires were not even aiding in the operation.

of an animal "plunged in it" is so violently acted on by it as to close the wind-pipe spasmodically, thus preventing its own access to the lungs at all, under such circumstances, and thus killing the animal by suffocation, and not by any "deleterious action on the lungs." If Regnault really meant more than this,—which the passage here quoted by no means shows,—if he meant to say that carbonic acid is not an actual poison, and if "Vice Cotis" adduced his opinion with that belief, it ought to have been prominently admitted that this was by no means the general opinion of the most competent authorities, even amongst the French. The opinions of mere chemists are of much less force in such a question than those of toxicologists, and of physiologists or pathologists; but even such as they are, the opinions of our best English chemists are, unanimously, so far as I can recollect, to the effect that carbonic acid "acts as a narcotic poison upon the system." As for the opinions of toxicologists on the subject, Professor Christison, whose authority on this as on other points is quoted with the utmost respect by the best of other authorities, expressly declares it as his opinion, in his standard work on "Poisons," that carbonic acid "is poisonous," and that too "positively, not negatively" merely, as he considers carbonic oxide to be.

As to Regnault's assertion that carbonic acid "may exist in considerable quantity in the air without producing any great inconvenience, provided that the oxygen remains in sufficient proportion,"* that is an opinion rather indefinitely expressed, and with a very material and important qualification truly: this "proportion" is just the main question; and on that point what do even French chemists, who speak definitively, say? M. Devergie states that air which "contains *five per cent.* of that gas is amply enough impregnated to occasion *death*;" and this corresponds with the observations of M. Ollivier, who found that *three per cent.* was as much as could be breathed with impunity even for a moderate length of time. According to Christison, however, "still less will suffice to prove injurious *or even fatal* if the air be long breathed." "Persons," he remarks, "have become *apoplectic* in an atmosphere of carbonic acid gas, which to those who entered it appeared at first quite respirable:" and, on the whole, he regards it as "the most important of the deleterious gases, for *it* is the daily source of fatal accidents," — even with charcoal furnaces, stoves, or pans, which he advisedly agrees with many French authorities themselves in attributing to this gas, and not to carbonic oxide. As to the deleterious nature of carbonic acid, Professor Graham and other English chemists even go so far, in their dread of the evil of breathing it in a diluted state, as to say that "the continued respiration for several hours of air containing not more than *one or two per cent.* of carbonic acid, has been found to produce alarming effects."

What, then, does all this reckless endeavour, on various hands, contemptuously to regard carbonic acid, and the necessity or advantage of its thorough ventilation, mean? I am utterly at a loss to comprehend its object. The deleterious nature of carbonic acid gas, and the small proportion of it capable of acting deleteriously if breathed again and again, are precisely the main *data* on which the necessity and advantage of ventilating either private dwellings or public buildings, and so clearing them of it, whether as generated from human lungs or from stoves themselves, are based. If the quantity and the quality were so utterly insignificant and contemptible as has now been attempted to be shown,—the quality by "Vice Cotis," the quantity by "E. L. G."—what, I ask, is the use of ventilation at all? Without serious endeavours such as those I have thus been impelled to make in order to disprove these two dangerous notions, neutral readers of the *Builder*, not very versant on the subject, would undoubtedly conclude that Ventilation is humbug altogether.

Neither to "Vice Cotis" nor to "E. L. G." do I mean any more to address myself. A mere reperusal of my previous communications afford, —excuse the anachronism,—a sufficient *reply*, to "E. L. G.'s" last. I have not come to this resolution, therefore, without having already been able to say to each, without immodesty, I trust, and with some significance,—"*Quod quidem ego tibi reddo tuum*,"—and that, too, "*appositis usuris*."

Adieu "Vice Cotis:" farewell "E. L. G."

J. E. D.

* By the way, although I had occasion some time ago to look into the French edition, published in 1850, of Regnault's work, and although I have a distinct recollection of the passage on carbonic oxide quoted by "Vice Cotis," I have no such recollection of having read in that edition the passage here quoted, although the subject on which I consulted him was carbonic acid itself: can he have altered it on further consideration?

ORIEL WINDOW, KEYNSHAM, SOMERSETSHIRE.



ORIEL WINDOW, KEYNSHAM, NEAR BRISTOL.

THE house from which the accompanying sketch is taken, stood* nearly opposite the west end of the church, and consisted of a building of three stories, 37 ft. 6 in. by 18 ft. running north and south, and an arm jutting westward, 24 ft. by 20 ft.† besides various other offices, &c. of a comparatively modern date. The oriel window was situated in the front, or east wall, which was 2 ft. 9 in. thick, and from which it projected 1 ft. 7 in.: the corbel, from the upper part of the lower cill to the top of the hood-mould, was in one stone, and of the entire thickness of the wall. The figures in the corbel, though very much obliterated, seemed to have been intended for knights, but whether secular or religious, it was impossible to determine. Its date may, I think, be attributed to the early part of the fifteenth century. In the course of taking down the front wall, an old fire-place, having a strong segmental arch, was discovered, but devoid of moulding, or anything that would tend to discover its date. Of the history of this building, I have not yet seen any *authentic* account. Tradition calls it the Priory, and if so it must have been the later remains of that founded by William, Earl of Gloucester, in 1164:* this is not altogether without some degree of probability. That a convent did exist near the spot is certain; and from the general arrangements of the old building, with its immense kitchen fireplace, and other unmistakeably monastic features, I should consider it by no means unlikely to have been part of the priory in question.

E. N. G.

* It has recently been destroyed, to make room for modern habitations.

† These measurements are taken inside the walls.

* In a manuscript of the "History of Bristol," dated 1774, it is mentioned as an "Abbey of Black Canons, dedicated to the Virgin Mary, to St. Peter, and St. Paul."

SPITALFIELDS IN OLD TIME.

THE orders in council, as well as the ancient proclamations, frequently contain notices of Old London that are interesting and amusing; indeed, one frequently produced the other. Parties finding themselves aggrieved petitioned the Privy Council, and the council, if the matter was of public concernment, referred the affair to the Attorney-General, to draw up a proclamation thereon.

On the 5th of March, 1669, the inhabitants of the pleasant locality of Spittle Fields petitioned the council, "that one John Pike, with others, are now digging earth in the said fields, and do intend to set up a brick clamp for the making and burning of bricks there, the which, if permitted in that small compasse of ground (being enclosed with buildings) will most greivously annoy the petitioners in their healths and habitations with nauseous and greate smokes that will be occasioned thereby, and render those parts (now healthy by the good air and other accommodations they enjoy by the benefits of the said fields) very noysome and incommodious; and, further, that besides the said inconveniences and mischeifes, it will not only prejudice the cloathes which are usually dryed in two large grounds adjoyning, and the rich stuffs of divers colours which are made in the said place, by altering and

changing their colours, to the great damage of the owners in the sale of them, but also endanger the lives and fortunes of the said inhabitants if any sparke of fyre should happen on the powder which is frequently laid a drying in the sun in ye old artillery-ground neare adjoyning to the said fields, there being usually kept great quantitys of powder in the storehouses there." The king, in council, took these allegations into consideration, and the matter was referred to Sir John Robinson, lieut. of the Tower, and some officers of the Ordnance, and in the meantime John Pike was restrained from erecting the said clamp or brick-kiln.

On the 24th of March Sir John Robinson and his coadjutors reported that "the petitioners had good reasons for their complaints, for that John Pike with his labourers were digging the earth for bricks so near ye artillery ground-wall, that it wilbe hurtfull to ye foundations thereof; and, further, that there is a rowe of new buildings erected and erecting upon new foundations so neare his Majesty's stoares, that if fyre should happen, it will endanger the said stoares, besides making the said artillery-ground unusefull as to ye practice of shooting there." John Pike, finding the affair going very hard against him, wisely met it half way, and offered "to forbear setting up any brick kilnes in Spittle Feilds; but as he had already expended upwards of a hundred pounds, and had contracted for a great quantity of bricks, he most humbly prayed that he might have license to make bricks of that earth, it being very fit for the same, which he will thence carry forth and burne in places so remote, as shall not give ye least annoyance to any the inhabitants of Spittle Feilds: whereupon it was so ordered, care being taken that they should not dig so near as to endanger the foundations of the wall of the artillery-ground."

PROVINCIAL.

Edenbridge.—On 14th ult. the church of Markbeach, near Edenbridge, was consecrated by the Archbishop of Canterbury. The church was founded and endowed by the late Hon. John C. Talbot, and is designed to contain 120 sittings. The first stone was laid on Easter Monday last, in his father's presence, by the eldest son of the deceased; and the building has been expeditiously executed by Messrs. T. and W. Piper. The communion-plate and an almsdish are the gift of the Rev. T. Bowdler and the Hon. W. P. Talbot. The east window is filled with stained glass by Mr. Wailes; and a smaller window has been given by Mr. Brandon, the architect; and a reredos of encaustic tiles by Mr. Minton.

Epsom.—A new medical college is about to be erected on an elevated site near this town: Mr. Clifton, architect. The first stake was placed by Mr. J. W. Freshfield, M.P. on Wednesday in last week. The college is to furnish an asylum for 100 medical men, or their widows, who have at least 15*l.* a year each; and to provide education to sons of medical men at 25*l.* a year each. Many orphans will be entered as foundation scholars, and educated and maintained at the expense of the society. The outlay is estimated at 20,000*l.*; and the yearly expenses 2,000*l.*: 12,000*l.* have been subscribed.

Bristol.—Preparations have been made in the tower of the cathedral, previously to the erection of the large clock, which will be shortly completed. The machinery has been made and regulated at the foundry of Messrs. Hale and Co. clockmakers, of this city.

Cardiff.—A valuable alteration is to be made to the town-hall now being erected here, under the superintendence of Mr. Jones, of London, by the addition of retiring-rooms from the large assembly-room; also the staircase is to be removed. It is elliptical, with a very massive iron railing. The tenders sent in were,—Messrs. Harris and David (the present builders), 1,365*l.* and Messrs. James and Price, 1,350*l.*—both Cardiff firms. In consequence of the difference being so trifling, the tender of the present builders was accepted.

Uttoxeter.—The proposed town-hall for this place is now intended to comprise not only a town-hall, public room, lock-ups, police-office, library, and reading-room, but also what is called "a Smithfield." The site is in High-street, and has, it is said, been contracted for. Two entrances will be made, one from Stone-road, and the other from High-street.

Peover.—A Macclesfield paper states that the ancient church of Lower Peover has been restored and altered, and was lately reopened. The restoration and alterations have been carried out in accordance with recommendations and designs by Mr. Salvin, architect. The gallery has been taken from the tower, the whitewash removed from the stone facings of the arch, and the western window restored to its original state and use. The whitewash has also been removed from the oak pillars and arches, as also from the font, which has been finished with a drip-stone. The square sash windows have given place to semicircular-headed ones, of four lancet-shaped lights in the aisle walls, and windows of five lights in the eastern and western ends of the aisles. The whole of the carved work has been dressed, and the pews—which remain in their original form—repaired. The floor of the chancel is paved with Minton's tiles, and the stalls have been repaired. The principal restoration and improvement is the substitution of three high-pitched roofs for the former flat one. An apparatus for warming the church has been supplied. The porch, on the south side, has been restored. Two gable crosses surmount the ends of the nave and chancel roofs.

Liverpool.—The great hall at St. George's-hall is still in a very unfinished state. A number of workmen are engaged on the decorations of the ceiling and other parts. Some of the panelling is formed, and the walls are covered with scaffolding. The flank elevation opposite the London and North-Western Terminus, has its stylobate incomplete.——A large pile of building, opposite the Adelphi Hotel, in Ranelagh-place, is in progress, and is intended for warehouses, offices, &c. The style of architecture is Græco-Italian, and it promises to be an acquisition to the neighbourhood.

Kidsgrove.—St. Thomas's Church, at Kidsgrove, erected some years back, was consecrated on Tuesday in last week, by the Bishop of Lichfield. A new font of Caen stone has recently been put up in the church. Mr. Kinnersley, who founded the church, and gave the cemetery connected with it, has directed a small chapel to be erected for funeral service. It will be in the Gothic style, ten yards in length by five yards in width. The floor will be paved with Minton's encaustic tiles, and the roof will be open timber, stained, like the pews, &c. The material for the walls will be stone from Stockton Brook, and ornamental tiles for the roof. The architects are Messrs. Ward and Son, and the contractor is Mr. Evans.

Doncaster.—The three Tudor windows in the south chapel of the chancel, in the parish church, have just been filled with stained glass, by Mr. Wailes, who has also been entrusted with an order to fill the large east window in the same chapel. The subjects to be appropriated are the Entombment, which will comprise the seven lower, and the Resurrection, for the seven upper openings. The whole of these windows are to the memory of deceased persons.

KAULBACH'S LAST FRESCO PAINTINGS.

NEW MUSEUM, BERLIN.—"DESTRUCTION OF JERUSALEM."

THE fresco representing "The Tower of Babel" is separated from that of "The Destruction of Jerusalem" by a space at present blank, and which will contain "The Golden Age of Greece."

Kaulbach did not attempt momentary effect; and while others derive their works from reality, this great master represents ideas. He is a dramatist—action and motion his element. When Action is concluded and the keystone placed on the arch, Action makes room to a higher repose.—It is night, reddened by the flames of the burning temple. Jerusalem is taken. Titus, at the head of his cohorts, pushes into the vanquished city through its broken walls. Behind him a forest of legion-eagles; before him German warriors have already ascended a broken altar, and bray with their trumpets dismay and terror into the confused knots of flying enemies. Above their heads wing the angels of the Eternal, and their trumpets also proclaim the day of judgment to those who did not hear the warnings of the Lord. Yet above them, in the farthest corner of the picture, appear the high priests and prophets, they themselves visions, who had, however, long foreseen the fall of Zion. To the left, beneath the columns of the burning temple, the chiefs of the Jews proclaim their execration. Around them is night. Covered by their shields, the mass of fugitive warriors push towards an issue, which, however, is not seen. Their track is already covered with blood, and despairing pale women and mothers immolate with knives their children, to secure them from the rage of the conqueror. Below, nearest to the beholder, a frightful figure, lone, ragged, and whipped by the furies, hastens to the gates—the wandering Jew. The altar above spoken of is one of the centres of attraction. At the foot of this is the high priest, who, surrounded by his companions, most of them slain, plunges a knife into his breast. Beside other groups of the immolated, who have either given themselves death or received it at the hands of their friends, are fair women, virgins who embrace each other, imploring death as a protection against slavery or dishonour. Amidst this, broken chests, treasure, and gold, rolling on the ground. The right of the picture shows us a Roman knight abducing a fair captive, and farther on a family of Christians, who, waving palm-leaves and chanting, leave the place of desolation. But, however much there be of life and pregnant meaning in this picture, how much of terror and sweetness, the *idea* rules all and over all—the idea connecting the past with the present. From Christ's doctrine dates the new world, after the city of the old covenant is destroyed, and Germanic nations become the bearers of its civilisation. Olden times break to pieces, and a new life arises therefrom.

CLASSIFICATION IN RAILWAY TRAINS.

PRACTICE and the progress of time have done little as to improvement of accommodation in the railway carriages of England,—they are the same as to distinctive arrangement as when Stephenson started on his first line. Carriages of second class have still no cushions; and on some lines *no glazed windows!* whilst those of the third class are uncovered and open to all weathers! France, Belgium, and other countries which adopted railways after us, preserve none of these incongruities: the comfort of all passengers is regarded; and yet a full proportion is found to frequent the most expensive seats,—the segregation of classes, and celerity of transit, proving to be of themselves a sufficient stimulus for payment of high fares.

On the Southampton line, where the first fare is 22s. and the second 15s. the hardship inflicted on the inferior grade is too flagrant, for in order to make the offence of economy more penal, the window slides are filled in with wooden panels, although glass (3d. per foot) would be as cheap. Thus cribbed in, the privilege of a view over a beautiful landscape during a three hours' journey is prohibited, and attention is more fixed upon the *want* of ease and cushioned dignity which have been forfeited by the paltry 7s. saving. For a while the various trade notices engross observation, the small loop lights just permitting the jolted occupants to note down the best marts for "Paletots, wigs, sovereign tea, and standard sherry;" but when these are all conned over a painful sense of imprisonment supervenes. The prison van, penitentiary beds, and even grated windows, haunt the nervous traveller. The narrow glimmer of passing landscape caught through *the light openings*, only serve to aggravate the endurance, as they discover but the confused flight of objects in a manner more likely to create dizziness than gratification. The foreigners do not so: they give moderate comforts, and *go a-head*, whilst we continue in the *vieux train*.

Money-grubbing management is herein contemptible—it misses its mark—none the fewer go by the second class, but many the more are

disgusted. As in a ship or in an express omnibus, the price of fare and superior association would be found quite sufficient to induce payment at the higher rate. No club-houses are more luxuriously pavilioned than the gin-palaces, nevertheless the aristocracy frequent them not.

It is easy to carry an air cushion, or to use a spare cloak: the poor man, or the parent who economizes for his children, has this remedy: they have none for privation of nature's landscape, but to open the windows: it is needless to state the danger of such an alternative even in summer: in winter the cold renders that impossible. As to third-class passengers, it is merciless, nay wicked, to obligate the poor to travel like the beasts in a train *without a roof* (very many of the cattle-vans are covered); and it is unfeeling and unjust to subject second-class passengers, who are commonly as straitened as those of the third class, to the discomforts of prison discipline. Government trains are restricted in charge; still health is beyond cost: in catarrhs and neuralgia, "'tis then we rack the value."

If railway boards are regardless of every consideration but profit, it behoves the Legislature to protect the public safety, and forfend that *poverty be mulcted in disease.*

The *Builder* in architecture may possibly influence the builder of carriages in the matter of *fenestration*, and in that hope these remarks are submitted by FUGAX.

ON THE PAINTED WINDOWS AT CHICHESTER.

REFERENCE was made in a former number of your journal to the five-light window in the chancel of the new subdeanery church, Chichester. That window contains three distinct and widely-different subjects,—subjects which, indeed, have no sort of connection among themselves. The "Crucifixion" occupies the three centre lights; "Joseph closing the Eyes of Jacob" is on the left; and the "Sons of the Prophets" addressing Elisha are represented on the right. To say nothing about the egregious blunder of the artist in representing the "Sons of the Prophets" as three little boys, let me ask, for information's sake, whether that blending of three heterogeneous subjects in one and the same window is not a gross violation of the first law of poetic and pictorial unity, "*Denique sit quidvis simplex dumtaxat et unum.*" Poetry and painting being twin sisters, the master says, "*ut pictura poesis.*" This law being universally received, it occurs to me that we have here a striking example of the very absurdity which the poet wrote to condemn, "*Nec pes nec caput uni reddatur formæ.*" To the "*inceptis gravibus*"—the Crucifixion—we have the "*purpureus latè qui splendeat unus et alter pannus*"—Jacob and Elisha—closely attached. So it seems to me; and as I am thinking of putting up a painted window myself, I should be glad to learn whether the "*quidlibet audendi potestas*" of painters reaches to such unnatural combinations as I have now described. Of course I am aware that subjects which have a symbolical, or even a historical, connection with one another—different events in the lives of the same individuals—types and antitypes—may very well be grouped together. But I cannot see any reason or colourable excuse for putting the dying Jacob and the courageous Elisha in proximity with the crucifixion of our Lord.

Another thing strikes me as much out of place, and that is, the glittering and kaleidoscopic character of the "ornamentation." Dying scenes, surely, are more in keeping with deep and sombre colouring. "*Tristia decent mœstum.*" But the very first thing that strikes one on viewing this window, is the sparkling character of the *tout-ensemble*. Herein, of a truth, no regard is had to the unalterable rule, "*sequi naturam.*" To say that such subjects "relate to the obituary character of the window," is a very lame excuse. "*Et fortasse cupressum scis simulare: quid hoc,*" &c. The obituary character might have been shown in various ways without destroying the unity of the representation. But what in the world has the interview between Elisha and the "Sons of the Prophets" to do with the decease of the virtuous lady, whose dutiful and affectionate son paid to Mr. Warrington three hundred guineas for this painted window?

Viewing at my leisure the stained glass at Chichester, and comparing it with such as I have seen both in this country and on the European continent, the conclusion at which I must arrive respecting the most of it is very unfavourable, as well to the skill and judgment of the artists as to the tastes of those by whom they were employed.

A small window said to have been filled with painted glass at the direction and expense of (the late) Archdeacon Manning; a larger one to perpetuate the memory of Bishop Shuttleworth; the two at the western extremity of the nave, saving that they contain a violation of the laws of perspective;—justly call for some consideration and respect. There are others which seem to invite the pitiless hand of demolition. I hear that a celebrated artist is so ashamed of a very yellow window on the north side of the presbytery, that he contemplates the renovation of it at his own expense. He has already refurbished one piece of his handiwork at the eastern extremity of the south aisle, but it still bears very evident marks of his "'prentice hand." We shall presently learn that a poetical mind, improved by liberal education, is essential to the production of a good painter on glass. Our canvas painters are used to wend their way to Florence, Rome, Dresden, Venice, and elsewhere, in order to study the works of the best masters; and our glass painters must not be afraid of the same trouble, if they wish to approach the perfection of ancient work. "*Ego nec studium sine divite venâ, nec rude quid possit video ingenium.*" But I would most willingly defer to the better judgment of others, being nothing myself in the schools of glass-painting but a humble amateur, a willing promoter of the chaste and decent "ornamentation" of churches, and an antiquated MEMBER OF THE UNIVERSITY OF OXFORD.

IRON AND OTHER METALS.

A BIRMINGHAM paper quotes an "important letter from an eminent house (in the iron trade) at Glasgow to a Birmingham merchant," in which it is said:—"Those who should know the iron trade pretty accurately, have had no confidence in the rise in price. A highly intelligent party, connected with the iron trade, told me to-day that he believed the fall in iron would be sudden and very great, and that it would be found that the largest portion of the enormous stocks in Glasgow were held by English speculators." This is precisely what we anticipated from the first as to the unwholesome state of excitement into which this trade has of late been forced, and to which it appears to be periodically subject. Meantime, instead of any abatement or moderation of the game, "the most extraordinary excitement," according to *Aris's Gazette*, "is still kept up, and expectations of the wildest nature are indulged. Some go so far as to confidently assert that merchant bars will shortly realize 15*l.* or 16*l.* per ton." "It is difficult," adds the same authority, "to conjecture what policy will be recognised at the approaching preliminary meeting, or what will be declared as the nominal price of iron." New works are constantly being opened, both in England and Scotland, but at same time the future glut of material will be all the less, that in many instances, still, mine workings are being drowned out, and labour is becoming both high and difficult of acquisition.

Mr. J. E. Beauvalet, of Paris, has patented an invention, which consists in manufacturing malleable iron and steel from cast-iron, by heating it in contact with a metallic oxide, or a carbonate containing a sufficient proportion of oxide, and then rolling or hammering it without previous puddling.

Great improvements, it is said, are being made in the manufacture of steel, especially cast-steel. Messrs. Blake and Parkin, of Meadow Steel Works, Sheffield, are making steam-engine piston-rods, said to bear more than double the strain of ordinary cast-steel of same thickness, by combining two tempers or different degrees of hardness in one bar—the soft part being inside, the outside being harder, thus combining the two requisites of stiffness and toughness. This peculiar steel is now used extensively by engineers for making their screw taps. It can be made with the hard temper inside and the soft temper outside for medal dies, mint dies, &c. Samples are ordered for the Bank of England and the Royal Mint, for their dies. Most of the large engineers in this country and in the United States are bringing this core-annealed steel into use for engine piston-rods and screw taps. The price is said to be about the same as ordinary cast-steel.

In respect to a recent new metallic compound, in which it is anticipated that many of the metallic articles of Birmingham manufacture will yet be made, the *Birmingham Journal* states that one of the highest chemical authorities of the day says, "Its flexibility is great, and it is strong in proportion to its thickness. But its value in another point of view is very great indeed. It is of course less liable to oxydation than zinc, and even if the tinning were to be worn off, the subjacent zinc would not be liable to produce any poisonous or dangerous effects whatever. On this account, I have no hesitation whatever in recommending it as infinitely preferable to lead in any form for the lining of cisterns or reservoirs; for all vessels in which liquids are to be kept for domestic use; for containing preserved meats and the like, and for baths. For all such purposes it is also preferable to tinned iron, because, as is well known, the iron in the latter is after a time rapidly oxydised and corroded, and many liquids might be kept in vessels of this metal, or lined with it, which could not be kept in vessels of tinned iron (tin plate)." When polished, it is said to be of silvery whiteness. It is already being applied to a miscellaneous variety of purposes at Birmingham.

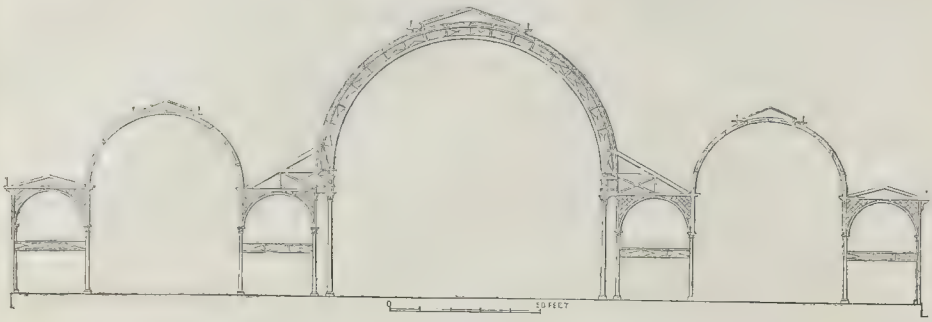
A new art of ornamenting metallic surfaces, recently invented and patented by Mr. R. F. Sturges, of Broad-street, Birmingham, is thus spoken of in *Aris's Gazette*: "It affords the means of decorating the plain surfaces of objects formed of metal at a reduction in cost which throws all other processes hitherto devised or invented into the shade, while at the same time it materially improves their appearance. The invention depends upon the compression of a material between two or more plates of metal in the operation of rolling. It may astonish our readers to learn that the most delicate thread lace, such as is used in ladies' attire, perforated paper, or wire webbing, when passed through a pair of rolls, leaves an impression upon the sheet of metal corresponding in depth to the compressibility of the material used as the pattern, and the density of the metal upon which the pattern is required to be impressed or indented. For all ordinary purposes it is equal to the much more expensive process of decoration by engraving."

NEWS FROM AMERICA.

Sculpture.—The equestrian statue of General Jackson, by Mills, will be placed in the public grounds at Washington on 8th inst. A colossal equestrian statue of Washington, "the largest in the world," is to be set about by the same artist, should a proposition, which will be made shortly in Congress, for an appropriation of 50,000 dollars, to this end, be agreed to.—— Powers is at present engaged on a statue of Washington for the State House of Louisiana. The hero is represented exactly as he appeared in his military habiliments. Though American news, it is at Florence where Powers is at work. Here, too, still, is his "California," a female figure, allegorizing the seductions of gold. In her left hand she holds, *before her*, a diviningrod, pointing to the auriferous earth, and in her right, half concealed *behind her*, a scourge of thorns, so often destined to lacerate those who say, like the son of Hassan, "Let me be suddenly rich."

The New Cathedral at Albany.—The great west window of stained glass in this cathedral, was brought from Europe in four thousand separate pieces, not one of which was broken on the voyage. It embodies a pictorial life of

SECTION OF THE INDUSTRIAL EXHIBITION BUILDING, DUBLIN.



the Saviour, from the birth to the resurrection. It cost 2,700 dollars.

New Wheel for Railway Cars.—Mr. James C. Bell, of Albany, has taken out a patent for a new wrought-iron wheel for railway cars and engines.

The Ericsson, "Caloric-Ship." — This air-engined vessel will very shortly be put upon her trial; indeed, although rather indefinitely called a "caloric" ship, her air-engine is said to have already been found to be capable of causing her paddle-wheels to revolve by the mere elasticity of the air, without any "caloric" at all, specially applied at least. She is not expected to make her proposed voyage across the Atlantic in less than fourteen or fifteen days. The great advantage to be derived from the success of this experiment, consists mainly in the small quantity of coal necessary, for there are no great furnaces to be fed: a small fire is held to be all that will be requisite. Safety from explosion, too, is to be considered. It is thought that such engines, if successful, will soon be universally used in long voyages, and for mercantile traffic.

Hydraulic Pumps.—Workmen, says the *Philadelphia Ledger*, are now employed at the Navy-yard, Washington, in the manufacture of sixty-six hydraulic pumps, for the Treasury department.

Cast-iron Pavements.—According to the *Boston Transcript*, this novelty, which, though in fact of British origin, like many other American novelties, has been "invented" at Boston, is now being tried in Howard-street of that city, by order of the City Government, and under direction of the Paving Committee. In this case the pavement is composed of circular boxes of cast iron, about 12 inches in diameter, and 5 inches in height, divided into six compartments, so small as not to admit the hoof of a horse. These spaces will be filled with gravel, but some other substance, such as a composition of asphaltum and sand or gravel, it is thought, may be found more suitable. The surface of the pavement is grooved to prevent horses from slipping, and on the outer edge of each box are keys which fit into the edges of the surrounding boxes, thus binding the whole firmly together. The thickness of the outer rim and the inner divisions is about an inch.

The Model Lodging-house System.—The *Boston Transcript*, which has advocated this system, has now the satisfaction of announcing that the question has been taken up by "the right hands," so that Boston is likely to take the American initiative in the establishment of improved lodging-houses for the poorer classes. A plan has been prepared for a five-story brick building, and circulars have been distributed urging its erection on remunerative principles.

Squaring the Circle.—A correspondent of the *Cleveland Herald* claims to be the solver of the great problem which has cracked so many brains. The happy genius's name is Theodore Faber, and he closes his note to the *Herald*, dated November 5, 1852, with the following announcement and challenge:—"The diameter is contained in the circumference exactly 3 and 784·5537 times. Mathematicians are respectfully invited to prove the contrary." Here's a chance for the "smart cypherers."

Canadian Doings.—In Canada they are forming a railway from Quebec to Sannia, a distance of 700 miles. A line of telegraph wires from Quebec to Detroit is also about to be established. The capital stock of 200,000 dollars is subscribed.

INTELLIGENCE OF IRISH BUILDING WORKS.

A NEW terminus is to be erected by the Great Southern and Western Railway Company. The intended building is to cover the large space of ground from the tunnel to the river, and will comprise numerous offices and warehouses, as also a commodious floating-dock for the loading and discharging of vessels. We are informed that the works will commence in spring, and give extensive employment.

A school of design for Galway is talked of, and steps are being taken for the furtherance of the object. A model school has been in progress under the auspices of the Fathers of the West Convent. Owing to severity of the weather, a portion of the new masonry, to the value of 200*l.* fell. The school-house comprises an industrial work-room for teaching embroidery, &c. also a model kitchen for the education of servants in their trade.

At Athenry, Mr. James Perry (a director of the Midland Great Western Railway) has been employing considerable numbers on his estates lately purchased under the Encumbered Estates Court. Farm-offices have been erected, and a new hotel adjoining the railway station is to be built from the designs of Mr. Mulvany.

The Galway Harbour Commissioners have served notice for a Bill to construct a harbour in the bay. Mr. Roberts, C.E. estimates its cost at 250,000*l.* which is much at variance with the opinion of the Packet Station Commissioners. It is intended to build a pier 2,075 feet in length, together with works in connection therewith. Dover pier is stated to be 800 feet long, and the contract to be 245,000*l.* Kingstown harbour has cost 800,000*l.* and (we need scarcely say) it is unfinished. Portland harbour is estimated to cost 589,000*l.*; Jersey, 700,000*l.*; and Alderney, 620,000*l.*

The Magee College is to be erected on Sir R. Ferguson's property, at Pennybunn, Derry.

The estimated cost of the Londonderry, Enniskillen, and Sligo line and branch is 300,000*l.* The branch is to commence on the main line at Manorhamilton, and terminate at Lough Allen.

Messrs. Johnson and Kinder, contractors, have offered to invest 50,000*l.* in the Limerick and Ennis line; also to construct and place locomotives, carriages, &c. on the line.

The town council of Belfast are discussing the question of a new town-hall.

The campanile in progress at Trinity College, Dublin, will be 90 feet high. The first stone (laid by the Lord Primate) weighed 3 tons.

An addition to the Belfast Lunatic Asylum is in progress. One wing at the side, and one at the front are being added. The new buildings contain dormitories and other accommodation. The style is plain, and similar to existing buildings. Mr. Lanyon, architect. Messrs. Doolin, builders.

A new school-house, under the last-named architect, is in progress of completion on the Malone road, Belfast: it comprises boys' and girls' schools. A tower and belfry faces the "old" Malone road. Style Gothic. Dressings, &c. of granite stone. Cost about 1,300*l.* raised by subscription. Mr. Robinson, builder.

We hear that Lord Annesley intends expending about 20,000*l.* in the erection of a castellated mansion near Belfast.

In McClean's fields, near the Linen Hall, in the town of Belfast, the factories for the manufacture of linen and flax are springing into existence. A linen factory has been recently completed—Messrs. J. & T. Kennedy, proprietors—at a cost of about 6,000*l.* A flax factory is finished, with the exception of a warehouse attached thereto, which is in progress. Messrs. Leadbettor and Co. proprietors. Mr. Jackson furnished the drawings.

The board of guardians of the Ballyvaughan Union intend erecting a new workhouse, and have been receiving tenders for the execution of same according to plans, &c. by the Poor Law Commissioners' architect.

Engineers are engaged making surveys at Gort for an intended line from Ennis to Athenry on the Midland South-Western Railway. When the Limerick and Ennis line is finished, railway communication will be then perfect between Galway, Limerick, Cork, Tipperary, Clonmel, and Dublin.

THE LIVERPOOL WATERWORKS.—Preparations are being made at Liverpool for the introduction of the Rivington-pikewater. At Kensington a number of deep shafts are being sunk through the solid rock, and the Green-lane water-tunnel is being enlarged so as not only to admit the laying of large pipes, but to afford also a passage for a man to walk alongside so as to facilitate repairs. Two covered reservoirs are being prepared, one of them a new one, and which when completed will cover six acres and store 18,000,000 gallons of water. They will be constructed with walls and embankments, and arched over with 8-inch bricks, supported on cast-iron columns and girders. The arches will be covered with soil, and nearly the whole area laid out as a parterre or pleasure-grounds. The works are being carried out according to the plans of Mr. Duncan, the local water engineer. The works will not be finished till about this time next year. The sole contractors are Messrs. George Thompson and Co. and the cost, according to the *Liverpool Journal*, will be about 25,000*l.* Messrs. Thompson are also contractors for the enlargement of the tunnel. It is intended also to construct another reservoir in Toxteth-park. As the site is somewhat lower, and some twenty or thirty houses would be otherwise unsupplied, Mr. Duncan proposes to run up a stand-pipe, supported by a tower.

BUILDING FOR THE INDUSTRIAL EXHIBITION OF 1853, DUBLIN.*

Mr. JOHN BENSON, Architect.



[* See page 1, in present number.

THE PANOPTICON.

The Panopticon of Science, in Leicester-square, is approaching completion, and will be ready to receive the public about Easter next, it is said. The decoration of the domical ceiling and central light of the great hall is nearly finished. It presents a field of blue, sprinkled with gold stars, and has bands of arabesque ornaments gilt, and relieved with red. Two large galleries surround the hall. The lecture theatre, which is at the back, is not quite so forward. The lower part of this is considerably under the level of the ground. Apart from its purpose as an exhibition, the directors propose, we observe, to establish a department for teaching mechanical engineering, including the principles and construction of agricultural implements, under the superintendence of a practical engineer; and it is to be furnished with a steam-engine, with planeing, punching, and other machines, forming an engineer's complete plant of tools; together with a select library of scientific books and drawings.

SIGHTS AND SCENERY.

The Haymarket Theatre.—"Masks and Faces" is still played here, and, if persons thought as much of fine acting and legitimate original writing as they profess, would itself fill the house for many nights to come.

The Christmas extravaganza, written by Mr. Stirling Coyne and Mr. Talfourd, has the advantage of a good title, "Leo the Terrible," and a novel construction. It takes the shape of a fable: we have Esop and Gay meeting at the Styx, and four busy B.'s—Bland, Buckstone, Bedford, and Miss Bennett—taking the heads of beasts, but telling their own tales; while a fifth—Mrs. Buckingham—falls amongst them in the shape of a yachting "fast" man, attended by Keeley—a model jack-tar of pigtail times. The Wolf's Lair and the Terrace Gardens are very creditable to the painter, Mr. G. Morris.

The Lyceum Theatre.—Author, manager, scene-painter, and actors, have combined to produce a most complete success here,—the author, however, and do not let it be forgotten, the ground and foundation of all. "The Good Woman of the Wood," as the new piece is called, is one of Mr. Planché's most successful works, full of admirable writing, which will read as well twenty years hence as now. Mr. Planché generally contrives to give us a quotable bit, and has not failed this time. King Bruin (Mr. F. Matthews) is inquiring of Dame Goldenheart (Madame Vestris, who is singing as well as ever) concerning a certain House of Roses, which has sprung up in the wood, and says,—

> Who was the architect?
> *Dame.*—A perfect stranger,—
> It was run up like magic!
> *King.*—There's the danger!
> That way they run the houses up in town,
> The next fine day to come with a run down!
> Yet notwithstanding rents in ev'ry wall
> The rent's the only thing that doesn't fall.

The critic in the leading journal, in the course of an admirably-written compliment to the author, seems to think, nevertheless, that the piece is less than usually witty. To our minds it is more than usually so, notwithstanding the absence of violent puns. It would be hard to find a more perfect piece of wit than the adaptation of the air *Comé gentil*, "with duck obligato accompaniment:"—

> "The grave physician—*Quack, quack!*
> The academician—*Quack, quack!*
> The politician, who turns his coat each day—*Quack, quack!*
> In each condition—*Quack, quack!*
> Such imposition—*Quack, quack!*
> The poor magician—*Quack, quack!*
> Quacks less than they!
> Both high and low we hear the sound of quacking—
> The Budget mustn't sneer at 'Turner's blacking!'
>
> In education—*Quack, quack!*
> In representation—*Quack, quack!*
> In emigration it goes a wondrous way!—*Quack, quack!*
> In ev'ry station,—*Quack, quack!*
> Through all the nation,—*Quack, quack!*
> My conjuration,
> Find favour, may:
> By quacking half the town is money making—
> From 'Life assuring' down to 'Undertaking!'"

So, too, with the song to the air of "Giles Scroggins." The last scene, both as regards colour and machinery, is equal to any of Mr. Beverley's previous efforts of this kind; but the scenic triumph is the closing scene of the first act, "A Basaltic Terminus on the Borders of Lake Lucid," which is as fine a picture as was ever put upon the stage. The dresses of the ballet are made, as usual, to increase the effect: a row of little fairies in blue serves beautifully to connect the scene with the stage.

The Polytechnic Institution.—Science in sport, music, machinery, and ballooning have filled the Polytechnic with crowds all the week, and every one goes away something improved and very much amused.

WOODS AND FORESTS.

Margined by the southern coast, opposite to the Isle of Wight, and extending nearly to Christchurch, in one of the happiest positions of England, surrounded on all sides by rich pastures, tillages, and parks, lying well to the sun, irrigated by streams, and boldly undulated in gradually ascending reaches, there still remains in primitive waste a tract of 140 square miles, which, seeming to be the property of no one, is doomed to sterility: though designated as a forest, it is not a wilderness, and has probably at this moment less timber than grew there at the landing of the Normans. With a surface easily susceptible of drainage, the rich bottoms are morasses, the sloping swells, moors! and the rainfall, which, if economized, might water Southampton or the largest city, serves but to vitiate the atmosphere for animal life. For vegetation, nothing can be more favourable—myrtles and other shrubs of the conservatory growing and luxuriating where planted throughout the winter.

In a country so thickly inhabited and so highly cultivated, whose population has been emigrating to Lower Canada and *seeking space* on even still less hospitable shores, the wonder is that so wide an expanse of the richest food-producing glebe should lie a prey to the squatter and freebooter, and that under the ban of Royalty a blight should overwhelm a fair region, which could not be more desolate had the destroying angel withered the whole area.

Surrounding cultivation makes the desolation appear more desolate. At intervals there are plantations, some young and thriving, some old and full of noble oak-trees: there may be in all 30,000 acres so excepted; and the value of the timber now standing would amount to a sum (at present withheld) which would appear incredible. In the vast plain there are also many private domains,—six of them of good extent, and each amounting to some thousands of acres, besides several hundreds of small tenements and key-hold cottages,—all claiming, like their great neighbours, forest rights and scope of additional land, which in most instances exceeds the original quantity of the squatting invasion.

Some of the large estates lay claim to hundreds, if not to thousands of acres; and there are, of these, those who, on the heather, have fixed boundary stones (fixed like life-buoys on shifting sands, but wofully dragging anchor), implying further private seignorial rights, whilst in most cases the greater proportion have fenced in and appropriated the vicinal reaches of land. The cottager would throw up a dung-heap, and then enclose it,—heap up a bank outside a ditch, then a ditch outside a bank, and thus *trenching* on the waste, stealthily extend his garden. But the proprietor of "GreatEstate" made bolder intrusions, fencing off hundreds of acres, and thus "enlarging the forest of his Carmel:" in fact, were the Act for inclosure passed, the demands of claimants for compensation would exceed the whole disposable 80,000 acres.

Better would it have been for the nation had the whole region been thus inclosed, cultivated, and inhabited, as property acquired must have converted the useless wild to pasture and tillage, and the civilization consequent upon colonization must have extinguished these predatory habits, which are so notorious throughout the Royal range. Deer-stalking by night, poaching always, timber-dropping (or napping) upon every favourable juncture! Fat bucks are seductive to the ravening forester: these are being now thinned off, and the tribute paid, about this season, to the tables of the dignitary or the bishop, must be suspended: he, too, must mortify the flesh so far as venison is concerned, and partially abstain from "the savoury meat which his soul loved."

It is several years since the *Builder* pointed out the expediency of disafforesting here *remote* Royal chases: it was demonstrated that as nurseries for naval (at least Royal) purposes they were wholly useless: at the same time it was shown that, even although the land should be leased or sold, still the timber might be reserved and marked with the broad arrow (as on private estates), for the use of the manorial lord. Since then, however, a marked change has taken place, and some timber has been supplied to the arsenals from the forest: a new mode of management, under *only one head*, has been adopted; and public advertisements have judiciously appeared (within three years), offering the *waste* or *rejected* timber for sale to the public. Until then the broad arrow rarely was impressed or razed on any tree since Sir Walter Tyrrel's shaft glanced from the bark to the carrotty king. A showing has also been made of a surplus in the Woods and Forests revenues, amounting to 60,000*l.* last year. It would have been well if explanation were made whether that surplus had not taken credit for supplies to the dock-yards, and whether it had not arisen from the fallen timber cut previous to disafforestment; whether, in fact, that sum was not the conversion of *capital into income!* Hainault Forest, and only a small portion of that, paid alone 23,000*l.* How much counted the New Forest? How much Whichwood? How much the Dean? All of these are predestined, very properly, for inclosure, and for dedication to food-producing purposes.

Perhaps observations by the Press may influence officials to a good end. There is an intelligence in a high sphere which appears ever wakeful to the people's benefit—a genius that fosters art which he loves, that has not disdained to experiment in the pursuits of the British farmer, and who has humanely addicted his study to the improvement of the cottager's hearth and home. Such a spirit is alive to every great question regarding the common weal, "and though he alone seems not to work," the subjugation of wastes and Royal hunting appanages cannot be a subject for indifference.

Hitherto the great fault as well as the great and devouring expense, was the host of officials set up on *political interests*. Nearly all, as has been proven by Lord Duncomb's committee, were guilty of gross malversation. Not chosen for aptitude to office, they were efficient but for combination in the grand object of gain. The heads of departments were ministerial: the subordinates were consequently political *attachés*. No inquiry could sift out and prove the complicity of defaulters. If the superiors knew little of the value of a stick, or of the conversion of timber, advantage was fully taken of their incapacity by the lower grades, so that a domain of 100,000 acres returned a balance of 3,000*l.* to profit and loss! such loss being of less consequence than the abstraction from tillage and cereal crops, of so great a breadth of the kingdom.

Besides the timber inclosures, there are also a few farms let out to Crown tenants, at easy rents. There are various lodges and pleasant abodes to sustain, and an overseer resident near Brockenhurst, in a noble mansion, with a nobler park of 400 acres, together with wide privileges, and of course a *Parliamentary salary*. The vested interests of such can only pertain to their salaries; and such improved properties will, if *fairly sold*, bring their value.

The extent of isolated and intruding inclosures will be hereafter given, when the timber and other points will be treated. For the present the chase may remain, like a steppe of Russia, perhaps wreathed in snow for a while, and wrapped in the mystery of Whitehall. Many parties are, however, watching the management of the *one* official: the eyes of the public are turned towards the conversion of national domains which, if honestly disposed of, are worth very many millions: the Government now in office is likely to be inquisitive into the subject, to overhaul lapsed errors, and even to revise and correct old fixtures, both material and personal; and as the scene shifts from

forest to forest, some data shall be certified and communicated by the ambulant volunteer commissioner. QUONDAM.

MASTERS AND WORKMEN.

TEMPORARY CHURCH AND SCHOOLS.

MR. RANDELL, the proprietor of the tile and brick manufactory, King's-cross, has lately erected, for his workmen and their families, and the poor in the neighbourhood of his works, at a cost, exclusive of the ground, of above 1,800*l.* a temporary church (under the direction of Mr. Roumieu, architect), holding 300 persons; a boys' school for 250, a girls' ditto for 120, and one for infants, holding 160 children; with the requisite fittings and apparatus, together with distinct sets of rooms for a master and two mistresses, each consisting of sitting-room, bedroom, scullery, larder, and coal-cellar. The church (the sittings in which are entirely free) has been open about three months, and is well attended; Mr. Randell contributing 50*l.* annually towards the minister's stipend, in addition to the grant from the Church Pastoral Aid Society. The schools will be opened at the commencement of the present year, when evening instruction will be given to the adult poor.

It is to be hoped that this example will not be lost upon other individuals and bodies employing large numbers of workpeople. Hundreds of families are very frequently collected together, by the formation of a railway terminus or the erection of some large manufactory in an entirely new neighbourhood, where no adequate provision has been made for the celebration of divine service or secular or religious instruction; and the locality is often too poor to supply the want itself without greater assistance than the State has thought fit to give, or the voluntary societies can afford,—under which circumstances these poor people are often left with less instruction or guidance than the inhabitants of many islands of savages which are visited by the missionaries. We offer Mr. Randell our hearty thanks.

LECTURE BY LORD INGESTRE, AT BILSTON.

A LECTURE on "Social Evils, their Causes and Cure," was delivered by Lord Ingestre on Tuesday in last week, at Bilston, to a numerous assemblage, in St. Mary's Schools there. The main subjects of his lordship's lecture were,—intemperance, uncomfortable homes, unhealthy localities, ignorance and crime, cheap theatrical and dancing entertainments and cheap publications, pawnbroking and loan establishments, the truck system, &c. We cannot afford space for even a brief condensation of the whole of his lordship's lecture, but we may quote from a few of its more prominent features; and first of intemperance.

The amount expended in intoxicating drinks in Great Britain was between 50,000,000*l.* and 60,000,000*l.* per annum—a sum equal to the whole national revenue. Now, let them for one moment suppose that this sum had yearly been spent in some other way; for instance, in the reclaiming of waste land, or in the improvement of what was but partially cultivated, or even in the erection of comfortable dwellings. Why, in a few years they would have had the whole kingdom, as it were, a garden of fertility. He need not dilate on the evils caused by this baneful habit. It would suffice to speak of lunacy, disease, premature death, prostitution, pauperism, and crime, as the necessary accompaniments of what he was afraid he must call a national vice.

The want of proper accommodation in the dwellings of the working classes was a great bar to the amelioration of their condition. It was a well-known fact that in London and all our great towns there was no class of society that paid higher rent for the house accommodation they received than the working classes. It had been calculated that the tenant of the noblest mansion in London paid a far lower nightly rent for the space he occupied, and the cubic feet of air he breathed, than the miserable urchin who paid his two or three pence for permission to stow himself under the bed of a low lodging-house, filled to suffocation by the most abandoned of all ages. Fancy the situation of a working man, returning homewards after his day's work, the tenant of some dingy apartment in a court or back street, unvisited by either the light or the fresh air of heaven, with no fresh water, no sewers, nor sinks, nor receptacle for filth of any description, and where the scavenger's besom in its rare visits only served, by stirring the heaps of decomposing filth, to render more offensive and deadly the effluvia that filled the polluted air. He had visited many of these places, and could fully prove the truth of what he had just stated. Further (continued his lordship), often there is to be seen facing the main street, and at the entrance of the courts where these abodes are situated, a building of a very different kind. The ample windows, lighted from handsome lustres, pour a brilliant flood into the street. Within, the massive counter, the huge oak painted barrels, the shining brasses, and active, well-dressed shopmen and shopwomen seem to betoken the height of comfort and prosperity: in the penetralia of the place there is every accommodation, whether for rich or poor; every contrivance to give comfort, and pleasing games, music, attendance, newspapers, company. Alas for our working friend: he thinks one moment of his wretched home—he gazes the next on the brilliant palace: at one instant conscience tells him to be a man—the next his companions laugh at his scruples. The stream of temptation proves all too strong: he is sucked into the deadly whirlpool, enters on a career of heedless destruction, and leaves his wretched family to welter as they best may in the awful gulf of vice, and misery, and blasphemy, which yawns greedily to receive them. Is not this true? and is it not often that the working man is, as it were, forced to frequent such places owing to the discomforts of his home? How much, then, are those to be honoured who, in spite of the difficulties that they have to contend with, shun such places, and endeavour manfully to struggle on, spurning such pursuits, and endeavouring, as far as is in their power, to provide for their families. Let the upper classes remember this, and when they hear of strikes or intended strikes, of dissatisfaction amongst working men, let them not so much blame the people, but let them rather investigate the circumstances which cause such evils.

On the subject of the truck system, his lordship probed an old sore in a new way. "There is hardly a working man," he remarked, "that does not abominate the truck system, yet I hear that, bad as the evils of that system are, many a wife would prefer to tolerate it, as by that means she would receive some portion of her husband's earnings, or otherwise he would spend all in drink."

As regarded ignorance, or want of education, he understood that the population in that place was about 24,000, and that 30,000*l.* were spent annually in that immediate neighbourhood in ale or liquors. That was rather more than 2*l.* a head. Now that sum might have been paid into a clothing club, or laid up as a reserve against sickness or bad times. It might have been spent in sending their children to school and teaching them what crime was both against their Maker and their country. Or suppose that the sum of 25,000*l.* had been handed over to the local authorities, that it had been spent in whitewashing, in repairing the houses, and in generally improving the neighbourhood: say that 1,000*l.* only had been employed in providing a comfortable home and place for the poor miner or workman in a foundry who might meet with an accident, and that another 1,000*l.* had been saved annually until they had enough to build a new church—what would have been the result?

The remedies for all these evils were then discussed. His lordship was of opinion that the way to reach the heart of the working-man was to make him feel comfortable. He pointed out that comfortable homes would soon lead to a diminution of intemperance and other evils, and that capitalists would find it for their own interest to provide comfortable homes for them. Baths and washhouses, too, would tend, and were designed, to promote comfort at home; and other improvements,—such as well-regulated libraries and reading-rooms, where the workingman, if he still wished it, might have his glass of beer or other and better refreshment, as well as his newspaper or book,—would greatly aid in the extinction of those pandemonian palaces, the gin-shops. The remedies for ignorance, crime, and other social evils, moreover, were chiefly, his lordship felt, to be looked for in the union and blending of classes; and he trusted that in a small degree the fact of his being there that evening was denotive of what would do something towards this end.

His Lordship's lecture displayed both good sense and good feeling, and perhaps the only points in which we would have wished to see his opinions somewhat modified, was his unqualified condemnation of cheap publications. There is still much trash, and some very objectionable matter, in many of these publications; but feeling the vast power and importance of them for good or for evil, we have been in the habit of looking into not a few of them regularly, and we are convinced that the public opinion is acting most favourably on them, and that even the worst of them is improving. Some of them, we need hardly say, are of quite a different class, and needed no such moral improvement. Where would the working-man find better reading than in the cheap publications of the Chambers', the Household Words, Cook's Journal, the Family Herald, and indeed not a few others. Cheap publications ought not to be condemned as such. They are amongst the most powerful agents in existence at this moment,—some of them for evil, but many of them for good,—to the poorer classes. We think it rather hard that even their cheap amusements should, as a class, be *altogether* condemned. By all means let them be improved,—let cheap theatres on a good model, cheap concerts worth hearing, and other cheap and good amusements, be recommended and patronized by such men as Lord Ingestre, and much good would be done, and *thus only* done, we suspect, in putting down more objectionable cheap amusements.

VENTILATION CEILINGS.

ANOTHER USE FOR PAXTON-GUTTERS.

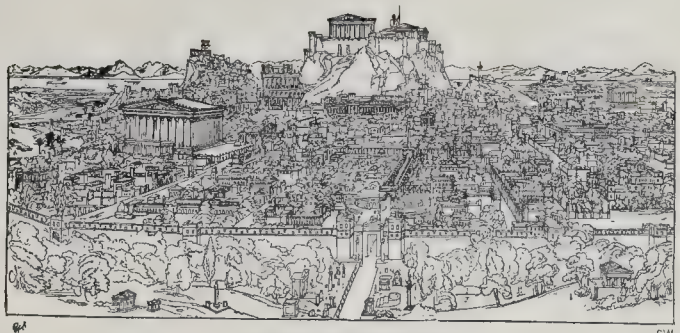
THERE is another way besides that alluded to by "E. L. G." for "enabling the fancy of architects to luxuriate, *ad libitum*, in ceilings," viz. to make a groove or gutter similar to the Paxton-gutter on the upper surface of the girders and binders (the top surface of the binders being kept level with the top of the girders), and small openings *diapered* over the surface of the squares, into which the ceiling is divided. The foul air, passing through these into the spaces between the joists over the ceiling, will be *drained* off into the *gutter* in the binder, which again conducts it into the gutter formed in the girder, at each end of which it may pass either into air-flues in the wall, or directly into the open air.

As, however, there is not much use in providing for the outlet of foul air unless the ingress of fresh air is also provided for, why should we not have *air fountains*, of ornamental form, standing in the centre of a room, or table (*i. e.* passing up through a table), or suspended from the ceiling,—if the floor is required to be unencumbered,—and regulated by a stop cock?

The centre of an apartment, and *a little above the floor*, appears to me by far the most desirable place for admitting air; and the pipe by which it is brought in may be carried round the back of the fire-place, or under it, so as to make it moderately warm.

May not one cause of the little progress made towards a general adoption of a system of ventilation be the not making the *means* by which it is accomplished, *visible* and *beautiful*? for at present the choice appears to lie between unsightliness and concealment. B. W.

DISCOVERY IN WINDSOR FOREST. — Several marble statues have been brought to light in Windsor Forest, about a mile beyond the statue of George III. at the end of the Long Walk. With the exception of one they are all attributed to Pietro Francavelia, a pupil of John of Bologna, in the 16th century. Through what circumstances these statues were buried in the wood is unknown—they have been brought to London by direction of Prince Albert to be restored. They are supposed to have adorned George IV.'s "Cottage."



ATHENS RESTORED.

BUILDERS' EXPENSES.

TAKING OUT QUANTITIES FOR BUILDERS NOT EMPLOYED.

Two cases of importance to surveyors, builders, and the profession generally, have of late been decided in the law courts.

In the Court of Queen's Bench, on the 1st ult. an appeal was heard on a case decided by Mr. Serjeant Storkes on the 17th of February last. From the statement made by the latter it appeared that this was an action brought by Mr. Pauling, a builder, against Messrs. Pontifex and another, lead merchants, for recovery of 45*l.* A verdict passed for plaintiff nominally for 20*l.* but by mistake of the judge, for 15*l.* 13s. 3d. only. Plaintiff, according to the judge's statement, had been induced to tender for work to be done for defendants, and it was found, on Mr. Northcroft, the latter's surveyor, opening the competing tenders, that plaintiff's was the lowest, so that, as the surveyor expressed it, "the work was his." A tender, however, was afterwards obtained from Mr. Glenn, who was not one of the competitors, and this last tender was accepted by defendants. The plaintiff, on the faith of the decision of the defendant's surveyor, incurred the expense claimed in preparation for the work, or in part performance of the same. The evidence as to the practice of the trade in such cases was conflicting, but the Court had decided that the preponderance was in favour of plaintiff. It was thought that there was an implied authority in the defendant's surveyor to accept the lowest tender in point of law; that the particulars gave sufficient information to defendants of plaintiff's claim; and that the items of charge were incidental to the alleged breaches of contract. On these grounds Mr. Serjeant Storkes had decided the case in plaintiff's favour.

Mr. Justice Coleridge concurred in the views taken by Mr. Serjeant Storkes, and said it was impossible to contend that there was no evidence to go to the jury, affirming the acceptance of the tender.

Mr. Justice Erle also concurred.

In the Court of Exchequer, on the 10th ult. an action was brought by Mr. Wright, a surveyor, against Mr. Attenborough, a jeweller, far taking out quantities for builders who competed for the work connected with alterations of a shop in Regent-street. Plaintiff was employed by defendant's architect, Mr. Tallis. None of the builders were employed, and the alterations were carried out by some one else. Plaintiff now sought to recover 48*l.* 7s. 6d. for trouble and expenses, and the jury with one exception, a servant of defendant's, were unanimously in favour of a verdict for plaintiff. It was ultimately agreed that a verdict should be entered accordingly for the amount claimed, with costs out of pocket only.

THE LEICESTER ROMAN PAVEMENT FOUND IN 1830.—It is said this fine old pavement runs a risk of being taken away from Leicester by the Crystal Palace Company, a circumstance to be regretted, as its location in the town where it was originally laid down, and where it has so long existed, constitutes one of its chief points of interest. Surely the inhabitants of Leicester will not allow so interesting a local relic to be sold out of their town without some efforts being made to retain it.

Notices of Books.

Greece, Pictorial, Descriptive, and Historical. By CHRISTOPHER WORDSWORTH, D.D. A new edition. London: Orr and Co. Paternoster-row. 1853.

IN the present very elegant edition of Dr. Wordsworth's "Greece," which is too well known now to need remark, Messrs. Orr have given a history of the characteristics of Greek art, with numerous illustrations by Mr. G. Scharf, wherein he traces, with slow and cautious steps, its rise and degradation,—bringing to bear upon the inquiry much new knowledge, gathered in the land of Homer. Mr. Scharf points out what many forget, viz. that the refined period of Greek art was a comparatively short one, and formed only one step of an extensive series.

"When the Persians destroyed all the buildings on the Acropolis of Athens, they probably laid the foundation for the future prosperity of the arts in Greece. The glory obtained by the victors, in defeating the enemy in such overwhelming numbers, was not sufficient in itself to call forth the energies of the artists to record it: it was, in addition, the destruction of the buildings themselves, which was viewed in a religious light. They were to be restored as a matter of necessity, for the continuance of their religious rites; and the utmost magnificence was to be bestowed upon them, as a compensation to the Gods, whose temples had been thus desecrated.

Thus the new town of Athens was rapidly rebuilt: the houses arose in an incredibly short space of time; and, prompted by the prudence of Themistocles, the whole was encompassed with a new wall, sixty stadia in circumference. These circumstances produced most important effects upon the Athenians in their intercourse with the neighbouring states. They were already beginning to feel the want of excitement, when one of those events happened which are sometimes devised by clever rulers for political purposes,—the Athenians heard with wonder that the bones of their great ancestor Theseus had been discovered."

"The remains were brought to Athens in the year B.C. 469; and after being welcomed by the people in grand procession, as if the hero himself had come back, they were deposited in the interior of the city. The temple monument, called the Theseum, was erected to receive them, and the building was invested with the privilege of sanctuary. It was finished about B.C. 465, and was probably the first great architectural work completed for religious service since the Persian devastation."

The restoration of Athens in its glory, which stands at the head of this notice, is from the design of Professor Cockerell.

One fact, usually lost sight of, becomes evident in reading Mr. Scharf's valuable essay, and that is the extent to which the world is indebted to the researches and discoveries of English architects for its knowledge of ancient art.

The essay, like the book itself, is profusely illustrated. The engravings in the latter are from drawings by Copley Fielding, Creswick, D. Cox, Harvey, Arundale, Huet, Sargent, Daubigny, and others. Some of the wood-cuts are indifferent, and might have been omitted with advantage, but the book nevertheless forms one of the most elegant and interesting volumes of the season.

The Dorp and the Veld; or, Six Months in Natal. By CHARLES BARTER, B.C.L. Fellow of New College, Oxford. Orr and Co. Amen Corner. London, 1852.

To those who wish to have what appears to be a disinterested account of Kaffirs, Boers, and Bushmen, written, it is said, without any special colonial object to serve, either pro or con, perhaps no better than this can be had. The author has had much experience as a traveller and a colonist, a farmer and a lumberer, and emigration has always been with him a subject of special interest. There is not much about architecture in the work, but something as to colonial buildings and contracts. We may quote the following as to the erection of a farm dwelling:—

"The following specification of the building contract may serve as a guide to the settler. Where wood is plentiful, wattle and dab would be the materials used, and would, of course, be much cheaper. In Natal the expense would be considerably less. The agreement was for the sum of 90*l.* to make 55,000 bricks, and to erect a house of 55 feet by 24, containing four rooms 10 feet by 15, one room 16 feet square, and a pantry 4 feet by 12; to put up outer and inner walls, plastered and rough-cast outside, and fine-plastered within, the roof not included. The timbers were supplied by Hans de Lange, from his forests under the Drakenberg, at the following prices:—Beams, 23 feet long, 9 broad, 3½ thick, 13s. 6d. each; planks, 20 feet long, 12 wide, 1 thick (half of them cut into laths), 8s. 3d. each, sawn and delivered at Plaatberg Farm,—a day and a half's *trek* with a wagon. Both beams and planks were of yellow wood (*Taxus latifolia*) which is not unlike deal."

Natal appears to be a good field for the surveyors employed by Government:—

"Of all professions, the most prosperous and lucrative is that of the Government surveyor. His employment, and consequently his gains, are not limited by the wants or caprices of his clients; his pay is ample, and though not always prompt, is sure. The nature of his occupation, which keeps him ever in the open air, renders it at once healthy and interesting. To him alone the real beauties of Natal scenery are unveiled. Mounted on his trusty steed, his theodolite strapped upon his shoulder, he penetrates wooded valleys which the eye of the traveller or tourist has never seen, and whose very existence is unknown but to the wandering savage; or tracks the course of some crystal stream, through all its mazy windings, from its rocky source in the mountains to the bed

of slime and sand at its mouth. He knows the inaccessible nooks and corners, for such there are, in which Nature delights to hide her choicest gems from the vulgar gaze, and which those who follow the beaten path are seldom permitted to discover.

His home, sometimes for many months, may be his waggon or tent; or, mayhap, if his stay in one place should be prolonged, a Kafir hut or deserted farm-house. But he carries with him most of the comforts, and often the luxuries, of civilised life, and is exposed to none of the hardships or privations which many would deem inseparable from such circumstances. Nor need he, if a married man, be without the society of his family; his wife may, and often does, accompany him, and his young ones return with sun-burnt faces and sturdy frames that contrast forcibly with those of the better preserved, but less hardy, children of the town. His work, meanwhile, is not difficult, nor does it require any extraordinary amount of attention or ability. No large and expensive apparatus, no very close or accurate measurements are necessary; there are no 'offsets' to be made. The farms are divided, wherever it is possible, by natural boundaries, and their limits marked by beacons on elevated positions; but an acre more or less, in 6,000, is of no great importance, and the minute details, with which our railway surveyors are familiar, would be here superfluous.

From these causes, an excellent opening is afforded for young men, such, indeed, as in the palmiest days of railway projects was scarcely to be commanded without high talent and reputation; and the profession is so popular, that it is in great danger of being overstocked. The only test required, beyond the ordinary testimonials, is that the candidate should pass a previous examination—no very formidable barrier—after which the way is clear before him, and with common prudence and economy his position is secured, and a comfortable independence, if not a fortune, is in his grasp. A young friend of mine, sharp and clever, but without any practical experience, made 300*l.* during the first six months of his residence here; and those who have obtained greater proficiency are easily able to clear from 800*l.* to 1,000*l.* a-year, without devoting more than nine months out of the twelve to their professional duties."

Miscellanea.

THE FINE ARTS AND THE "ART-JOURNAL."—Thus, then, the first great step has at length been taken *to place the Arts of Great Britain on a sure, lasting, and extended foundation;* and while we congratulate the country on the State-recognition of their necessities, we may, without arrogance, assume that, in a variety of ways, the columns of the *Art Journal* have largely contributed to this result. There are many in Parliament who know and feel this, and who have not been slow to acknowledge it out of the House, though they have refrained from making mention of it within. For fourteen years have we been labouring to rouse the country to a sense of its requirements: our Journal, circulating its thousands monthly from one end of the kingdom to the other, and in channels where its influence could not fail of being effective, has hitherto fulfilled its mission of advancing the Arts, of causing them to be respected, and regarded as necessary to the well-being of the country. Our primary aim was one of no inferior magnitude: we have reason to feel pride that it is thus far accomplished amid so many discouragements as have fallen to our lot. Much, very much, yet remains to be done, and our zeal shall not abate one iota while we can serve the cause with which we have been so long and so closely identified.—*Art Journal. Second Report of the Royal Commission.*

ARCHITECTURE AND ENGINEERING, QUEEN'S COLLEGE, BIRMINGHAM.—The council has resolved upon a course of study extended over a period of three years, to comprise modern languages, pure and mixed mathematics, chemistry, mineralogy, experimental philosophy, mechanics, manufacturing art, the principles and construction of machinery, architectural constructions, and mechanical drawing, terminating under the powers granted by the Crown in the degree of Bachelor of Civil Engineering (B.C.E.), and after not less than two years practical study in the office of an engineer, architect, or mechanician, the student will be eligible for the degree of Master of Civil Engineering (M.C.E.), and for a fellowship of the college. The new buildings in the east wing, in Paradise-street, have been prepared for resident students: the courses will also be open to occasional students, and clerks and assistants in the offices of engineers and architects and railway establishments.

EXCAVATION UNDER WATER: UNTENABLE PATENT.—In the Court of Exchequer, on Wednesday week, before the Chief Baron and a special jury, the case *Bush* v. *Fox* (*Knight*) *and Others*, came on for hearing. This was an action against Sir C. Fox, Henderson, and Co. for infringement of patent obtained by plaintiff, Mr. Bush, an engineer, who constructed a lighthouse on the Godwin Sands. The patent had been taken out by the plaintiff in September 1841, for the construction of a caisson of iron plates, with air-tight chambers, and means of supplying air, to be used in excavation under water. It was alleged defendants had infringed the patent in preparing the foundations of a bridge at Rochester. The defence set up was, that Lord Dundonald had invented a similar mode of excavating before plaintiff had obtained his patent. Plaintiff was examined, and admitted that the only difference between his invention and that of Lord Dundonald was, that the latter was to be used on land, and the former in water. The Lord Chief Baron said, that after this evidence the patent could not be supported. Sir A. Cockburn tendered a bill of exceptions to the ruling of the judge. The Lord Chief Baron then directed the verdict to be entered on the third issue for the defendants, and the jury were discharged as to the others.

ELECTRO-MAGNETISM AS A MOTIVE POWER.—The few scientific men who have endeavoured to introduce electro-magnetism as a motive power, have hitherto failed in producing machines capable of competing with steam-engines, but have always retained the conviction that future discoverers would prove its superiority over steam-compressed air, or any other means of producing a cheap motive power. Surely in all their experiments it must have occurred to them that some mechanical use could be made of the wonderful velocity of the force—a velocity so great that it is scarcely possible to distinguish the difference of time between its traversing a circle of one yard or one of twenty miles, conveying with the speed of lightning a vast amount of available power—capable of being used almost at the same instant at any part of such circle; hence, while the battery is worked in London, engines may be set in motion all over England. For some time past I have been studying the best and most simple way of making use of this principle, and, I am happy to say, with success, for I can make a machine far more simple in its construction than the steam-engine, taking up very little room, and suitable for all purposes where steam-power is now employed; and what increases its value more than aught else is, that the same battery power will propel with equal velocity an engine of five-horse power or one of twenty-horse power—the power of the engine depending on the length of lever employed in the construction of this machine. I require neither pinions nor cranes, and only two wheels weighing a few ounces.—H. P.

THE ANCIENT CHAPEL AT KILLALOE, called by some the Oratory of St. Flannan, and singularly interesting as one of the few remaining steep stone-roofed churches, has long been in a state of ruin. The chancel is gone. Of the nave, the north side is much dilapidated, the squared stones with which it was faced having nearly all crumbled away. A great part of the stone roof has also fallen, and the remainder seems only kept together by the ivy and lichens with which it is covered. It is proposed to repair, so as to preserve, this ancient building, and subscriptions are being sought for the purpose. The estimated cost is but 60*l.* and surely those who venerate the monuments of days when Ireland was renowned throughout Europe for her learning and religion, will provide this, to save from ruin this,—one of the most venerable of them all. It is to be hoped that nothing will be done without proper professional advice.

LONGTON BRANCH SCHOOL OF DESIGN.—The distribution of prizes in this school took place on Monday in last week, at the town-hall, in presence of a numerous and influential meeting. The Earl of Harrowby presided. A number of drawings by the students were exhibited, together with others done at the Stoke school of a more advanced order, in order to show what might be expected with time and perseverance. The report contained an urgent appeal to all interested in the success of the school and the welfare of the district. The cash account showed the income, including a sum of 31*l.* 2s. 6d. as annual subscriptions, to be 69*l.* 8s. 7d., and the expenditure, 44*l.* 15s. 9d., leaving a balance in hand of 15*l.* 12s. 10d. It was hoped the liberality of the district would enable the committee to meet the liberal conditions of the Board of Trade, so as to place the school on a permanent and more extended basis.

EDINBURGH.—The Wellington Statue being now uniformly embrowned by the action of the elements, the surface of the group has been cleaned with the view of ultimately fixing the colour by the application of oils. No darkening corrosives have been employed, as in the case of Chantrey's statues in George-street, to blacken the figures. A meeting has been held in regard to the improvement of East Register-street, near where the Wellington statue, at the front of the Register House, stands. Mr. P. Wilson, architect, explained a plan prepared under the notice of the Paving Board, and negotiations are to be entered into with proprietors as to the proposed improvements. A further and more extensive project was mooted by Mr. Wilson for reducing the summit level of St. James's-square, and converting the sunk floors into shops. In the old town, the engineering of Warriston's-close, leading directly from the railway stations, Waverley-bridge, to Parliament-square, has been finally settled. The side face of the long building erected by the Messrs. Chambers for their printing establishment, occupies a large part of the western range of this close.

NEW CHIMNEY AT THE HASTINGS GASWORKS.—According to a correspondent, the general features of this shaft are taken from the watch-towers erected during the Middle Ages, sometimes for defence and sometimes for ornament, in the northern and middle parts of Italy; and it bears a close resemblance to a well-known campanile in the public square at Sienna. It consists of a tower enclosing a circular shaft of one uniform internal diameter from top to bottom, thus comprising two separate and distinct structures. A more regular current and a larger amount of heat in the furnace are obtained than can be procured from the regularly-diminishing shaft in general use. The internal flue is composed of red circular bricks made of the required curvature, partly lined with fire-bricks; while the square external tower is of white brick with Caen stone dressings. The total height above the surface of the ground is 70 feet, the exterior diameter at the bottom 9 feet, and at the top about 6 feet 6 inches. The internal flue has a clear diameter of 3 feet throughout. Messrs. Reeks and Humbert were the architects. The contractors were Messrs. Moreland, London.

THE TOMB OF DANIEL THE PROPHET.—A letter from Persia, mentioned in the *Boston Chronicle* (U.S.), states that in the course of works on the line between Persia and Turkey, the commissioners have come upon the remains of the ancient palace Shushan, mentioned in the sacred books of Esther and Daniel, together with the tomb of Daniel the Prophet. The reader can turn to Esther, and there he will read of a "pavement of red, and blue, and white, and black marble" in that palace. That pavement still exists, and in the marble columns, dilapidated ruins, the sculpture, and the remaining marks of greatness and glory that are scattered around, the commissioners read the exact truth of the record made by the sacred penman. Not far from the palace stands a tomb: on it is sculptured the figure of a man bound hand and foot, with a huge lion in the act of springing upon him to devour him.

BEDFORDSHIRE ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.—The monthly meeting of council was held at the society's rooms, Bedford, on Tuesday in last week. The Rev. J. Taddy read an account of some excavations at Sandy, near Cæsar's Camp, and on the site of the ancient Salinæ, at the line of the Great Northern Railway; and a description of interesting remains, consisting of Saxon and Roman vases, amphoræ, pateræ, coins, weapons, &c. with a quantity of charred wheat. An account was also given by Mr. Taddy of some subsequent discoveries of Saxon remains. The secretary laid on the table a proof of the new publication of the society, called the "Notes;" relating to the ecclesiology and antiquities of the county.

DESTRUCTION OF THE ALSTON VIADUCT.—The fine viaduct at Haltwhistle, which carried the Alston branch of the Newcastle railway across the Tyne, has been reduced to a total wreck by the recent floods. According to the *Carlisle Patriot*, one arch has been completely washed away, and the other injured to a serious extent. The amount of damage done is enormous. The bridge cost 20,000*l.*, and a moiety of that sum will not restore it. The inconvenience is great, all traffic along the line being entirely stopped. The accident arose from the constant undermining influence of the water, which was aggravated by the recent flood. In rebuilding the structure, precautions should be used to prevent a recurrence of the accident. The danger to which the structure was subject had been frequently pointed out, but without effect.

GAS LIGHTING.—An important improvement is said to have just been made in France in the mode of purifying gas for lighting. Instead of lime, the inventor uses peat charcoal and acids, which deprive the gas of the sulphur and ammonia. The gas thus purified is said to have an addition of 10 per cent. to its illuminating power, and the materials used for the purification of the gas are converted into a manure so valuable, it is declared, that it can be sold for more than the original cost.

THE FRUITS OF A HALF CENTURY.—Fifty years ago steamboats were unknown—now there are 3,000 afloat on American waters alone. In 1800 there was not a single railroad in the world—now there are 10,000 miles in the United States, and about 22,000 in America and England. Half a century ago it took some weeks to convey news from Washington to New Orleans—now not as many seconds as it then did weeks. Fifty years ago the most rapid printing-press was worked by hand power—now steam prints 20,000 papers an hour on a single press. *Now* is a great fellow, but will be much bigger half a century hence.—*Philadelphia Ledger.*

FALL OF SUSPENSION BRIDGE.—A few days since, the suspension bridge on the Tech-au-Baulon (Pyrénées Orientales) gave way while a waggon, drawn by five horses, and laden with 3,000 kilogrammes of iron ore, was passing over it.

ENLARGEMENT OF EXETER WATERWORKS.—The first sod of new works for the filtration of the water and extension of the works of the Exeter Water Company, was cut on Thursday in last week. The plans were furnished by Mr. Simpson, of London, hydraulic engineer, and consist of two new reservoirs adjoining the old one, at "Dane's Castle," or "Fairfax's Entrenchment," and capable of holding between four and five million gallons, into which the water will be pumped from Pynes, for settling previous to filtration. The present reservoir will be converted into two filters, through which the water will pass into large covered brick tanks, and thence into tributory mains and service pipes to the houses. Those in the higher districts will be supplied by a steam-engine. By Mr. Simpson's plan the works are in duplicate. Mr. Dark is the contractor, and the works will be superintended by Mr. Lea.

HOW TO MAKE OLD OAK.—The appearance of old oak may be obtained by exposing any article of new oak to the vapours of ammonia. Every variety of tint may be procured, according to the duration and temperature of the volatile compounds. A new oak carved arm-chair, exposed to the vapours of ammonia, will, in about twelve hours, have all the appearance of having been made 200 years before.—*Kidd's Own Journal.*

TRACTILE FORCE.—In a recent number of the *Builder*, I perceive an answer to a question as to what is the direct tractile force necessary to move a ton weight in the common carriages on the rails. Will any of your correspondents kindly inform me how much more power is necessary on a common road for the same purpose, as I cannot discover any data in several mechanical books which I have been examining?—E. H.

FALL AT DONCASTER TOWN-HALL.—During the violent storm of wind which prevailed on the morning of Monday last, an immense stack of chimneys, placed on the roof of the Guildhall, fell with a tremendous crash upon the roof, and through into the large hall below. This building was erected five years ago by the town council of Doncaster. The hall, which is now a mass of *débris*, is used for all the purposes of business and pleasure of the town, and hundreds of persons are in the habit of congregating therein. As the town council did not think it worth their while to employ an architect in the construction, but entrusted the work to one of its own officials, it now surely demands from them a strict professional examination.—Z.

VALUATION OF CHARLTON, DOVER.—The following tenders show that builders are not the only class who are guilty of "wide estimating." Tenders were required for a revaluation of the parish of Charlton, in Dover, for parochial purposes, the contractor to furnish a fair rating, with a terrier; the attendance in case of appeals to be paid extra, according to the terms stated in the notice of tender previously fixed by the guardians:—

Hownslow and Co.	£135	0
Cooper	100	0
Hiller	78	15
Coleman and Elwin, 2½ per cent. on rental		
Colegate	70	0
Ayers	70	0
Rees	50	0
Elgar	50	0
Cornelius (accepted)	45	0
Saloman	31	0

A DOVER BUILDER.

NEW HALL AT OXFORD.—The Tutors' Association, recently formed, for the extension and the self-reform of the University, propose, amongst other arrangements, for the establishment of affiliated and private halls, &c. to erect a new independent hall on the plan of Hatfield Hall, Durham, in which education may be given at the rate of about 60*l.* per annum.

[ADVERTISEMENT.]

STREET ARCHITECTURE.—We noticed the other day the gorgeous yet artistic effect produced by the judicious employment of colours in the *façade* of MESSRS. Futvoye's establishment in Regent and Beak streets. It would seem that the whole of this vast frontage, which used to occupy more than an hour in closing, is now thoroughly secured by one of CLARK's patent iron shutters, the largest in the world, working horizontally and passing over an area of 378 feet in less than forty seconds.—*Globe.*

CLARK and Co.'s Patent Shutter Works, Gate-street, Lincoln's-Inn-Fields, London.

TO CORRESPONDENTS.

"R. E.," "*Verbum s.t.*," "Alpha" (will find a note at office), "W. H. F," "C. G. E." (we shall be glad to hear), "E. M. T.," "W. C," "P P C"

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

ARCHITECTURAL, CIVIL ENGINEERING, and MECHANICAL DRAWING CLASSES, conducted by THOMAS J. HILL, Offices, 12, Helmet-row, Old-street. Morning Classes from Ten till Four, Evening ditto, Seven till Ten, every day except Saturdays. Terms, and detailed prospectuses, to be had on application at the Offices. The Offices reopen on the 3rd of January, 1853.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made to the important advantages obtained by FISH-JOINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 25th August. This invention not only saves a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar, and which fish jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish-jointed rails that were under water, and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

Eastern Counties Railway,
East Indian,
Edinburgh and Glasgow,
Egyptian,
London, Brighton, and South Coast,
London and North-Western,
Midland,
Morayshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:—

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Midland Great Western (Ireland),
Northern Railway of France,
Newport and Abergavenny,
South Wales,
St. Germains and Versailles,
West Cornwall.

The Permanent Way Company have received gratifying testimonials in favour of its adoption from I. K. BRUNELL, Esq. C.E. G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

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The Builder.

SATURDAY, JANUARY 8, 1853.

WE have before now treated the subject of Architects' responsibilities, and oppressive enough they are without having them thoughtlessly increased by insufficiently instructed judges and juries.

A decision has just been given in the County Court of Southampton, before Judge Gale, which requires attention; for if it is to establish a precedent it will affect every professional man in the kingdom. We must go a little into particulars.

In July, 1850, a Mr. Ivimey, of Southampton, required Mr. John Elliott to design for him a double villa, eight rooms in each, not to exceed in value 400*l.* for the pair. A design was ultimately made and estimated by the architect at 500*l.* Tenders were obtained: all were under that amount; and one was accepted at 419*l.* White bricks were subsequently substituted for red; and Ivimey himself ordered the builder, Simms, to make the houses one foot wider; but with the additions the buildings were completed under the amount of the architect's estimate.

The time fixed for completion was three months, with a penalty of 5*l.* per week for after time; and there was a clause in the specifications that the roof, which, according to the architect, was of one-third pitch, was "to be slated with countess cut slates, laid to a 2½-inch lap, and pointed on the inside." The roofs were slated in about two months from the commencement of the work, and then the exertions of the builder suddenly ceased, and the proprietor and the builder quarrelled desperately.

The winter of 1850-51 was a stormy one, and the situation of the houses (at Woolston) rather exposed. After one of these storms, observing the ceiling to be spotted along the middle of the roof with damp, the architect examined it on the outside, and found the lap very irregular, and, in the centre, one course was only 1¾ instead of 2½ inches. He mentioned this to the builder, who admitted the defect, laid the blame on the slater, Flood, and he offered to point the roof on the outside as a remedy, and give a guarantee to keep it in repair for seven years. This was told the owner, and that the proper course was to have the slates off; but as he was in a hurry to get in, and as it was thought that the builder would probably encounter a lawsuit rather than submit to take off the roof, he was advised to consider whether he would try the pointing. Ivimey desired to be kept from collision with Simms, and he gave full permission that the architect might adopt such a course as he thought best. Under the circumstances, the latter decided on the pointing, telling the builder to get it done with John's cement, and this, up to the time of the architect quitting the buildings, excluded the weather. When the accounts came to be settled, Ivimey called upon the architect to put the forfeiture clause in force against the builder, and ultimately, there being mitigating circumstances, a deduction of 25*l.* was made. One of the houses the owner has occupied since April 1851, and the other has been let to a party who has lived in it some time.

About a fortnight or three weeks ago, Mr. Ivimey brought an action against the architect, laying his damages at 50*l.* sustained through the alleged want of skill of the defendant as an architect.

Mr. Leigh, in opening the case for the plaintiff, said,—He apprehended they would hear from his Honour that the law was, if a man undertook any employment, the carrying out of which implied the bringing to bear of any amount of intelligence and skill, he was bound to bring it to bear; and if for want of it any damage was sustained by the other party, he was bound to make it good. Supposing that any one of the jury employed a surgeon to treat him in his illness, and he did him more harm than good, or that an attorney showed such want of skill in conducting a case that it was lost instead of won, they would be liable to actions for damages; and the case of an architect was perfectly analogous, because he was employed to exhibit certain skill and care in the execution of the building. Many a man employed a mere builder, but if, out of greater care, and because everything should be done in a proper manner, he, in addition to the builder, employed an architect, whose duty it was to design the house, and see it properly constructed, it was as clear as the sun in noonday, that if, being so employed, he misconducted himself, he was as much liable to be sued for damages as the surgeon or attorney. Of all the operations in building to which skill and care should in the first place be most particularly directed, it was not the least that the house should be made water-tight, as a building which would not keep out the weather was not of much use. An architect having been selected, it was his duty to furnish the design, and attend to the proper construction of the building, the person employing him having nothing further to do with it; and it was most important, in the first place, that the architect should make himself acquainted with the site of the building, because a house situated in a sheltered valley, and protected by the natural formation of the land from any great stress of weather, might be built safely and with less particular care than a house posted on the top of a rock; and it would be no answer to a case of this kind to say that such roofs as had been put on Mr. Ivimey's houses had answered very well elsewhere. No doubt they had, but that had nothing whatever to do with the question.

The plaintiff when examined, said the erections of the houses had occupied nine months instead of three, mainly through the negligence of Mr. Elliott.

Mr. Flood, the slater, said the slates were countess slates, cut round at the end, and all had 2½-in. lap. Thought a lap of 3 inches, or 3½ inches, was necessary.

Price, a workman, employed by Mr. Cole to put on new slates, thought the lap was insufficient.

Mr. R. Coles, slater, stated that he examined the roof, and found the lap insufficient. The damage done to the ceiling was very great, and the pointing, which had been executed by Flood, had done more harm than good. He found the lap was not sufficient, and he advised the taking off the slates, and putting on other larger slates with a lap of 4 inches. The roof was a quarter pitch. It was very wrong ever to put countess cut slates on flat roofs. The degree of the lap given did not depend upon the cost of the house! Nothing less than 3½-inch lap was necessary to keep the roof water-tight.

Mr. Joseph Hill, surveyor, stated that he had inspected the roof, and found it never would be a dry one, the roof being too flat for that description of slate, and the lap not being sufficient.

Mr. Moody, on the part of the defendant, said there was no doubt but that under certain circumstances, the general principle was, that where a person employed another for skill in a particular branch of business, he was entitled to look to that person for the exercise of that skill; but that rule must not be extended so as to convert the architect into a clerk of the works, or to compel him to see to the putting on of every piece of slate, wood, or brickwork. His duties were two-fold, first to design, and next to prepare a specification of the work to be done; and by modern practice it was also necessary that he should superintend the construction of the building; but it was next to impossible to detect a misconstruction in many parts unless the person was constantly on the spot,—and it could not for one moment be considered to be the duty of the architect to inspect the carrying out from first to last of the work shown in his specification. He was to superintend generally, and not with the particularity of a clerk of the works, for it was out of the power of any architect to watch the putting on of slate by slate, and timber by timber. He contended that the lap was quite sufficient in houses of that description, and that Mr. Ivimey could not expect, with the limit he had put to the expenses, that he should have a house which no weather could affect. If there was any fault in the construction of the house, the proprietor had a remedy against the contractor, but it could not be said that the architect who designed the building was open to an action.

Mr. Elliott, when examined, said that Mr. Ivimey's first instructions were, that he wanted places little better than cottages. He was not clerk of the works, which was quite a different officer, generally selected by the architect and paid by the owner. He gave certificates to Simms of certain portions of work being completed, in order to enable him to obtain money, but was never called upon to give a certificate of the final completion. Witness was on the spot superintending much oftener than usual in an architect. Either himself or clerk went to the building between thirty and forty times. The delay which took place, he understood from the builder, rested with the proprietor. The Countess-cut slates, he considered, did not require more than an ordinary lap, and in one place where he measured it he only found it 1¾ inch, and that matter he reported to Mr. Ivimey, telling him he had power to order the slates to be taken off, and he replied that he had had some disagreement with Mr. Simms. Ultimately Mr. Ivimey agreed to the pointing of the slates, and when witness gave up the building it was quite water-tight. Nine out of ten of the common villas throughout the country had not a greater lap than 2½ inches. Mr. Ivimey had never alluded to the site. He considered that in an ordinary instance of a roof of this description a 2½-inch lap was sufficient; but he had heard that a perfect tornado rushed up the neighbourhood, and he could not be expected to have a knowledge of, or be responsible for, that, or no one would be an architect.

Mr. Simms, the builder, being examined, said a 2½-inch lap was named in the specification. He believed all the slates had not that lap, and something was deducted from his bill in consequence.

Mr. Geo. Brinton, builder, gave it as his opinion that a 2½-inch lap in square slates would keep the wet out in a roof of one-third pitch.*

The judge told the jury the question at issue was, whether Mr. Elliott had committed any error in judgment, and if so, what damages had been sustained. If there had been no error in judgment, they could not give damages. The architect was bound to bring a reasonable amount of skill to bear, and if he did not he was liable to an action. Their main consideration would be whether the 2½-inch lap was sufficient, and the result of the cause would depend on that issue. An architect was bound, in making a design for a house, to consider the ordinary laws of nature, and whether a house in any situation would be particularly subject to the weather: he was expected not only to exercise his imagination, but also to prepare the working plans, and to be acquainted with the strength of materials, and all those ordinary things, without knowing which he would mislead the builder. He said, that "the price of the houses had nothing to do with the lap." In answer to the architect's statement, that before specifying cut slates he had taken the trouble to inquire of those who had used them whether the lap was sufficient—he replied, that "as an architect, he must take all the consequences of trying any new material." In answer to an observation, that if such a lap as that mentioned by Cole was really necessary it would prove something very peculiar in the site, which it was impossible for the architect to foresee or guard

* We have not given the whole of the evidence—only those parts which bear most strongly on the point at issue.

against,—the judge remarked, that "an architect was bound to know the laws of nature, and that Mr. Elliott was therefore liable for this."

Mr. Simms the contractor, in the course of his evidence, having stated that Ivimey had personally ordered an additional foot to be added to the width of the building; the judge remarked, that "this would but relieve the architect, if he were subsequently made aware of the alteration made by his employer." He also told the jury that "if an architect provide Countess-cut slates in the specifications, with a lap of 2½ inches, and that proves insufficient, he is clearly answerable for all damages." If he gives an insufficient lap, and damage occurs by defective execution, the architect is still liable, because of the original defect in the specifications.

Of course with such directions the jury could do no otherwise than give *a verdict against the architect—damages 20l.* On applying for a new trial, the defendant pledging himself to bring a mass of evidence to prove that he had given ample lap and rise had the work been properly done, it was refused by the judge, who clinched his former view of an architect's liability by saying, that he "could not see what use a new trial would be, as he should direct the jury that, if an architect finds out a defect and suggests a remedy and that fails, he is equally answerable for all the consequences."

Henceforth, if Judge Gale's law be law, no architect or engineer can try an experiment or a new material with the slightest safety: he will be absolutely at the mercy of every workman disposed to cheat, or of any unprincipled employer inclined to avail himself of his own especial directions to cut the work down to the lowest sum, and saddle the architect with all the risk of cheap building.

THE DECORATION OF ST. PAUL'S.

THE subject of the present paper,—the Chromatic and Sculptural embellishment, *i.e.* the finishing, of a great ecclesiastical edifice,—is one of the most important that could occupy the attention of the profession; the shrine of religion embodying the loftiest ideas, its erection and adornment have in all ages and nations been the most important task of the architect, the painter, and the sculptor. This paper has been written, however, under a great disadvantage,—my not having the Cathedral at hand. For on the spot we not only get more accurate information of its present state, but there is inspiration itself in a great building that prompts ideas of what is wanting to the full development of its beauties. We converse, as it were, with the genius of the place, and drink of the spirit that designed it. Nevertheless, with every deference to the architect of St. Paul's, it is possible, I think, to be over-anxious to discover what were his intentions in respect of decoration. A thorough knowledge of the spirit and character of the building we must have before we can plan its embellishments; but with this knowledge, and aided by all new lights, I believe it is possible so to clothe the great work of Wren as to realize a brighter conception than he himself had attained to. To do this would be paying him more honour than blindly and unfeelingly following his directions, supposing he had left any.

As the legitimate object of decorating a building is to impart to it full life and vigour, our first care in the decoration of St. Paul's should be not to overbear or crush the spirit of the architecture,—not to obscure its forms (the development of its structural organization); but to give them, on the contrary, their full intensity of expression. Ornamentation there, is to be a transparent veil of beauty thrown over its sublime features. Whatever arts are called in for this purpose are to be used truthfully; not to add sham features to the architecture or sculpture, but to contribute their own native graces to the general effect. Painting and sculpture have each their separate office: when architecture has done her part, these are called in, not to mimic, but to assist each other in giving additional beauty and perfection. The aid we receive from the painter must come as painting, which is for the relief and embellishment of a flat surface, not to make sham pilasters, or sham anything. There is not the shadow of an excuse for the imitation of architecture or sculpture by means of painting, painting being a legitimate decoration in itself. Sculpture, it is true, possesses the additional element of light and shade; but it is inferior in that it lacks colour. But the arts are all legitimate means of decoration: the wondrous effect produced in the cathedrals and abbeys of the middle ages was by the truthful and united operation of the arts in their embellishment; and not only were sculpture, painting, and architecture employed together, each assisting the other, but music was called in to heighten their effect upon the mind, and give a tongue—an audible voice, as it were,—to her sister arts.

The first thing I consider necessary to be done in St. Paul's is the insertion of new windows,—windows with broad divisions either of wood or stone to receive light and shade, and produce unity and breadth both outside and in. In interior decoration windows play a most important part; their design may contribute largely by its fitness and beauty to the embellishment of the interior, or by its ugliness or want of character spoil all embellishment, as it often does in buildings of the revived Roman and Italian period. The interior beauty of St. Stephen's, Walbrook, is all but destroyed by the windows, which are so many blotches on the design; and in a qualified degree this is the case at St. Paul's. It would seem as if the window at this period was to be under the ban of ugliness: while the door was a mark for beauty, the aperture through which the radiant guest was received was abandoned to at least a barbarous plainness. We want, then, proper windows to St. Paul's: at present we have only window dressings surrounding each a great gap in the wall, which must be filled in with the window *proper*. In this window I would make larger use than has yet been done, in the style, of the beauties of geometrical form, till its dividing mullions went far to rival the tracery of the Gothic. There is room here, I think, for an entirely new and beautiful conception. Light beaming through graceful architectural forms would be less than usually dependent on embellishment connected with the glazing.

Of all the decorative elements ever invented and introduced into ecclesiastical architecture perhaps that of glass painting is the most grandly significant, and this alone would lay us under lasting obligations to the mediæval builders. A window thus decorated and seen under a good light and other favourable circumstances, affords a type of celestial glory that no other material could yield. It may well be compared, as it has been, to a heavenly tissue of gems and crystals; to the bright varying surface of a sea of fiery flowers and others of the most glorious of conceivable images; for there we have the mysteries of light and colour crowding upon our vision and lighting up the place with ever-varying splendour.

There is, however, this difficulty with stained glass,—it cannot be introduced along with historical painting; at least, if introduced, it would result in a war of art-elements that would be fatal to the paintings; for the proper contemplation of which the dazzling colours of the windows would, in the first place, totally incapacitate the eye. I would, therefore, have the ardent beauties of stained glass in the windows (both aisle and clerestory) of the choir only, where I would omit painted subjects, and substitute other embellishments. Thus distinguishing the choir, the most sacred part of the edifice, by stained glass, would, while there was sufficient meaning in it, give a pleasing and satisfactory variety. It would aid the effect of the vista viewed from the west end of the nave, which would terminate in a flood of radiance deepened in intensity by the increase of window-light about the altar.

But in using this means of embellishment, we should bear in mind the primary object of the window, which is to admit light, and not to depict history. I would give it a mosaic character, and lavish on it all the beauties of geometrical design, but I would confine figure subjects to the walls. The light may come as through pearls and gems of every hue, but not through the opaque bodies of men and women.

Besides, we can have more complete harmony of colour, when unrestricted by the requisite forms of the picture, and left to geometrical disposition only, the beauty of which would be aided by the admission of smaller pieces of glass than would be allowable in subjects.

As the light would require subduing in the nave, I would use a monochrome, say a light sepia, which would be warmer and richer than ground-glass, and yet would not interfere either with frescoes or sculpture. This I would relieve by an arabesque or geometrical pattern. The windows of Magdalen College Chapel, Oxford, have figure subjects in this material, and they yield a sombre and solemn effect very suitable to such a place.

In interior decoration one of the first things to be considered is, what is the artistic quality expressed by the architecture; that the same quality may be made to pervade the sculpture and painting: for the idea that disposed the masses of the architecture must reign in every branch of art employed in its decoration, and be visible in every detail. If the forms are grand, the colour must be grave, not gay. In concert halls, theatres, and the like, a variety of agreeable colours may be indulged in; but in great and solemn interiors, one or two simple and grave colours will best carry out its expression. Polychromy, I consider, would be the destruction of St. Paul's, annihilating both unity and grandeur, charms which are very easily dispelled. One of the easiest things, perhaps, in the world is to spoil a grand interior in the endeavour to finish it. To complete the unity of such a building we should give it, I think, one ground colour from end to end, from top to bottom: further variety should consist chiefly in relieving, by a different colour, columns, and entablatures, archivolts and other mouldings of walls and ceilings.

I believe that the inside of the walls and ceilings in the great epic works of architecture should, like the outside, exhibit the polished surface of the material of which they are built; that the superior beauty of the inside should arise from a superior material having been used in the construction of the interior course of the walls, just as we apply an ashlar facing to the outside of brickwork; *i. e.* where three-fourths or more of the thickness of the wall, measuring from the outside, was, for example, Portland or Bath stone with the ordinary polish, the remainder to the inside would be fine granite or coloured and veined marbles, with the highest possible polish.

Or if not thus, the interior should present the surface of a solid casing of the more precious materials subsequently applied, in which casing the various panels (not meant for pictures) would be distinguished by a material of superior richness or beauty,—coloured and variegated marbles, porphyries, or lapis lazuli, selected and arranged with due respect to harmonious contrast of colour. This would be a rational and architectural way of treating panelled work, both of walls and ceilings: a beautiful marble in the coffers of vaults and vault bands would look quite as well as a rosette.

A mere coating of any kind to be afterwards coloured seems to me beneath the dignity of the highest works of architecture. Besides, a great monumental structure, as a national temple built to endure for ages, should be as little as possible dependent for beauty or greatness of effect on the perishable materials that we apply to dwelling-houses and ordinary buildings. Its forms and decorations should, *in the first instance*, be such as to place it above the comparatively ephemeral graces which it is within the power of the painter or gilder to bestow.

Now the above being, as I think, the most natural and artistic, as well as the loftiest mode of procedure, we should, when we have to colour an interior like St. Paul's, that has not been thus constructed, take this stone theory, this ideal (perhaps it may be called) of decoration as our guide: in fact, structural division is the

proper guide in painting an interior, and this I would take in the decoration of St. Paul's, not, however, to the imitation of stone or marble, but to the production by painting (clearly acknowledged) of as nearly as possible the same general effect.

As above suggested, I would have two colours for the whole interior: the one I would have a yellowish or greenish grey; the other, a reddish or purplish tint: these, containing in their composition the three primary colours,—blue, red, yellow,—would make perfect harmony, while their contrast would give life and vigour to the whole. The first, or lightest colour, I would employ on the general ground of walls, ceilings, domes; keeping domes and ceilings, however, a shade lighter than the walls. The last-mentioned or darker colour I would use on the projecting portions, as the pilasters, cornices, &c. which would thus be relieved off a lighter ground, an arrangement calculated to give a natural air to the place; projections in exteriors, from greater exposure to weather and smoke, generally showing darker than the receding portions.

The capitals of columns and pilasters I would have white, relieving the fibres and edges of the leaves with gold. I would also relieve the mouldings and enrichments of the ceiling with the darker colour, picked out in gold. Carrying light into the dark and dark into the light I look to as a means of great unity and harmony in the entire effect, which will be much benefited, however, by keeping the general tone of the ceiling as light as possible consistent with harmony. Deep and varied colouring there would infallibly destroy, or at least greatly injure, effect of height.

Besides the gilding before mentioned, all the sculptured bands and archivolts, the carved mouldings and modillions of the cornice, and the various rosettes in the panels of soffits I would relieve with gold in the manner described for the capitals. Gilding, by the way, judiciously applied, I look upon as a solemn and fitting decoration. It should, however, be distributed with much circumspection, as, if lavishly used, as by forming therewith backgrounds of figures and the like, it becomes gaudy and childish in its result. The more sparingly used (within certain limits) perhaps the greater its decorative value.

As to the floor of St. Paul's, I doubt not it is sufficiently ornate to meet *my* views on the subject; for I could not approve of the ancient variegated and florid tiles, nor of any minute or elaborate mosaic or marquetry being introduced there. Mosaic is best employed on walls and ceilings: it is too rich and elaborate a decoration for floors, which I consider should be kept simple in form and grave in colour, being subordinate and subsidiary in place both to walls and ceilings. Beyond the beauties of geometrical form, and *that* not very intricate or minute, I would not indulge in the pavement of a great building. Its components might be of two colours, as a black and white tesselation, an alternation of grey or dove-coloured, and white marbles or other plain, coloured, and contrasting materials that would harmonise with the colours of walls and ceilings; but encaustic and figured tiles I consider out of place, and only calculated to lessen or injure the effect of the mural decorations.

It will be said that Nature's floor is thus variegated with grass and flowers. It is so; but though we love the green velvety grass under our feet, we do not generally—and we should always be loath to—walk upon flowers.

The further embellishment of St. Paul's is to come in the shape of historical and decorative painting and detached sculpture. Though the former—historical subjects—are not essential to the architectural effect, yet they contribute to the significance—the intellectual expression—of the building,—give more decision and emphasis to its sacred character. Great ideas may be expressed in allegorical and emblematic painting, and in such a fabric as St. Paul's historical, poetic, and symbolical pictures in illustration of the Bible, as far as space permits, would add greatly to the moral and religious influence of the place.

Not, however, for the purpose of teaching the Bible to the visitors would I place such pictures there: the invention of printing, and translation of the Bible into the mother tongue, have rendered such mode of instruction no longer necessary: I would illustrate the Bible, not that it might be useful as elementary teaching, but because its subjects are such as the place demands, and because the sublimest subjects for the pencil or the chisel are there contained.

Properly placing sculptural, pictorial, and decorative embellishment is very important: columns, arch-piers, pillars of any kind, should, except in their capitals, be kept undivided, unsculptured, and monotonous in colour: walls are planes, and are more for enclosure than support, and these, with ceilings, both present their surfaces as proper places for decoration.

The ceiling, generally, though a proper field for decoration, is not so fit a situation for figure subjects; and even detached figures, with no backgrounds, are best represented on planes upright, or nearly so: on other surfaces, horizontal, inclined, or curved, if figures be introduced, they should be aërial or winged beings, as angels or genii.*

S. H.

OLD LONDON.

During the reign of Queen Anne, London continued rapidly to increase, many fashionable squares were built, the houses being remarkable for a certain amount of elegance and great excellence of workmanship. Queen's-square and the adjoining streets are good examples of the period: many of the house-doors of this and the two succeeding reigns are of good design and beautifully carved: the wrought-iron work attached to the houses is worthy of notice. A great improvement was also made in the application of moulded brickwork. Many specimens still remain—some of them represented in our last volume.

The old galleried inns of London, which, in the days of waggons and stage-coaches, were so common, have now nearly vanished, or are so completely altered as to retain little of their original appearance. The engraving of the "Four Swans, Bishopsgate-street," (p. 813, vol. x.) is the most perfect existing example, and is likely, if it escapes fire, to continue for some time, as the proprietor has had it carefully repaired, and made available to the uses of the present day by the introduction of glass windows along the galleries. The old cobblers' stalls are also very scarce, and will soon become as rare as the watch-boxes of our former guardians of the night.

In this reign there was, as we have said, in the London building a certain amount of elegance. This gradually declined until the middle of the reign of George III. when all was plain, substantial, and utilitarian, which may be considered the dark period of English art in architecture, furniture, and costume.

In bringing up our notices of London houses and shops to the reign of George III. we have endeavoured to trace the progress of London improvements, and while it is with pride that we look upon the present development of this great city, we witness with pain the numerous abuses, which are rendered of increased importance by the magnitude of the interests which they affect. The history of London from an early period to the present time is a continued account of "trimming" measures, either forced by plague and pestilence, by fire, by interest, or by fears of the safety of property. An alderman is robbed,—then the lighting of the City is seen after; an epidemic disease carries off one-sixth of the old inhabitants,—the Fleet Ditch is partly covered. In modern days the cholera pays us a visit, and during the terrors of its visitation the people are made to see and appreciate the unwholesomeness of intramural interments: such is the case in many other instances.

At the end of the year 1852, the slaughtering of animals is continued in all parts of the City and suburbs. In these particulars, London is worse than before the time of Henry VII.; for then, under payment of a heavy penalty, butchers were obliged to kill animals used for food at a distance from the inhabitants. We also, at the present day, tolerate the slaughtering of horses, &c. the preparation of tallow, and other abominations to be carried forward in the midst of our most dense population.

In many parts of this great metropolis, often hid from public view by stately squares and other buildings, lurk dense masses of houses totally unfit for human use, and yet crowded with those who, born in such localities, have little other prospect except the hospital, the workhouse, or the jail: here light or water scarcely enters, and instruction, save that in vice, is an almost utter stranger.

Is it not possible to provide dwellings for the abject poor of London and other large towns, where they may be brought into contact with light and the means of cleanliness, without rendering the supply of such buildings in a pecuniary way a charity to this large and helpless mass? It is said by many, that buildings on a new plan would not meet the views of those who have been reared in filth, and prejudiced by ignorance to their own good. We think that this prejudice would, if the proper material were supplied, soon vanish. Nothing can be more encouraging than the success of the first building erected in Old St. Pancras-road, by the Metropolitan Association for Improving the Dwellings of the Industrious Classes. This building, as most of our readers are aware, is erected on the principle of the Edinburgh and Parisian houses. This departure from established custom met, at first, with many objectors, and some difficulty was felt in obtaining tenants Since the opening of this building the rents have been twice raised, and, notwithstanding, it is rare now to meet with a set of rooms vacant. The inhabitants have continued to increase in respectability, and consist of the higher class of citizens, such as die-sinkers, engravers, ornamental painters, compositors, skilled carpenters, &c.: in addition to these we may mention a gentleman who has been for many years connected with literature, a bank clerk, &c. There can be no doubt that this first erection of the association is paying a handsome per centage on the expended capital; and it is almost certain that similar buildings, scattered about St. Pancras and elsewhere, would be a satisfactory speculation; and would also gradually pave the way to an alteration for the better of the dwellings of the very poor. We will not at present enter into the consideration of the slow progress of sewer reform; the necessity for the appointment of sanitary police, particularly in the districts of St. Pancras, Marylebone, Westminster, and parts of the Borough—the nuisance of smoke, &c. We cannot, however, refrain from saying a few words respecting the present condition of the "Grave-yard" question. The Act of Parliament which has been passed may be classed amongst the worst of the "trimming" measures of former days: it is, in fact, worse than useless, and will be only a means of continuing the evil until some fresh outbreak of disease forces a more complete measure for this bad practice. A Bill for the discontinuance of intramural interments in London has caused many to make their minds at ease, considering that, as an Act of Parliament has been passed, the evil has ceased. Such, however, is, unfortunately not the case. On Sundays during the afternoon, the St. Pancras-road and adjoining streets present the appearance of an almost continued procession of coffins of children and adults, accompanied by the usual mourners, wending their way to the already closely-packed grave-yards of St. Pancras and St. Martin's-in-the-fields. Nor are the Sundays the only days on which the already putrified mass is increased by fresh additions. The scenes at these burial-grounds on Sundays are most disgraceful. Not long since we visited the St. Martin's ground on a Sunday afternoon: the part appropriated for the poorer kind of funerals was crowded: in all directions open graves awaited their tenants: in one part a young Irish girl was screaming for the loss of her mother, whose grave was being filled up by several drunken Irishmen and costermongers.

The background to this scene is the St. Pancras Workhouse: the hospital adjoins this particular part: several aged heads covered with nightcaps, pressed against the glass, contemplating, no doubt, their own speedy removal to their last home. The lunatic wards also adjoin this graveyard; and when we have at times gone by to wonder at the ingenuity with which the

* To be continued.

ground was "managed," we have heard the wailing of madness adding to the terror of the scene; for terrible it is to those who understand the subject, and can in the mind's eye see below the surface of these receptacles. We trust, that if Parliament has in the past instance failed in its usefulness, the Press will continue to agitate this matter till it is settled, and prevent us the disgrace of having it said of us, that we waited until the time of fever, or something worse, forced us to act. And who knows how soon the pestilence may come upon us? The earth all over England is saturated by most unusual moisture, and the London graveyards completely drenched. This moisture must be extracted into the atmosphere and spread around. Who can foresee the consequence?

OUR NATIONAL ARMOURY AT THE TOWER.

IMITATIONS.

IN the last number of the journal published by the Archæological Institute of Great Britain and Ireland is an engraving of what is called a "Winged Burgonet of the Sixteenth Century," said to have been lately added to the collection at the Tower. In the account of it given by the gentleman who exhibited it,—by permission of the authorities, I presume,—I find no allusion to the fact, well known to these authorities, that this helmet has been pronounced a modern fabrication partly modelled from a specimen in the Ambras collection at Vienna, and one of a score of the same pattern manufactured by a clever foreign artist, not privately for fraud, but publicly for sale, for theatrical and other pageantry. I should, therefore, like to know whether the curators of our national armoury have satisfied themselves that this report is unfounded by writing to the respectable manufacturer, who bears a high reputation abroad for his admirable imitations of every description of ancient armour and weapons, and who would, I am convinced, have confirmed or denied the assertion by return of post; or if they have not done so, whether, in order to make a wholesale addition to the armoury in the Tower, they would upon the same principle like to open a negociation with the lessee of the Royal Italian Opera House, Covent Garden, for a dozen of the fine suits worn in "La Juive," made expressly for that opera from the very best authorities by Mons. Grangier, of Paris, or contract with that artist and his ingenious rival Herr Obermeyer, of Vienna, for imitations of all the most interesting specimens contained in the Musée d'Artillerie and the Belvedere Palace. I am perfectly willing to admit that, in the present state of art, imitations of antiquities can be produced, so perfect in form and colour as to puzzle exceedingly acute antiquaries, but where an article is only presumed to be as early as the sixteenth century, and therefore might easily have an authenticated pedigree, or where, as in this case, a doubt has been thrown on it, which could be dispelled in a week by a letter from Vienna, there is no excuse for its purchase without such satisfaction by the curator of a national collection, although that collection already contains so many fabulous monsters that the present Winged Burgonet may, if actually spurious, be called only "*une bête de plus.*"

I have the authority of an excellent antiquary for stating that he himself publicly sold an Anelace as the manufacture of that celebrated impostor San Quirico, and which has, notwithstanding its avowed character, been recently added to the Tower collection, and paraded as one of its rarest curiosities! In the meanwhile, the really valuable and genuine specimens are carried off to Russia and France, unless by some fortunate accident they are secured by the taste and liberality of private individuals. The magnificent suit in which Sir Philip Sydney was slain, and allowed by the Tower authorities to slip through their fingers for less than half its intrinsic value, the whole being embossed with figures and ornaments of solid gold, has migrated to St. Petersburgh. A helmet of the twelfth century has, fortunately, gone to Warwick Castle; and another extremely fine one of the time of Edward III. has luckily been secured by Lord Londesborough; whilst a unique specimen of the vizord Basinet of the same period, with the camail or chain neck-piece appendant, will shortly be on its road to Paris. In brief, a column of your pages might be filled with well-authenticated anecdotes of the extraordinary caprice, to use the mildest phrase, which seems to influence the conduct of those to whom is intrusted the management of the funds collected from the public to be expended for the benefit of the public,—who do not blush to exhibit to that public a patched-up figure in Indian mail as a Norman Crusader of the time of Edward I. and who have only changed the absurd titles of "William the Conqueror," "William Rufus," &c. formerly appended to suits of the sixteenth and seventeenth centuries, for the more deceptive, because more probable, fictions which now appropriate the suits to historical personages who may have been contemporary with, but were never proprietors of them. There is, indeed, a guide to the armoury, published and sold by authority in the Tower, which tells you you are not to believe what is written up! Can absurdity be carried farther?

Now, sir, you may ask in your turn how this case specially concerns the *Builder?* I answer thus:—On the subject of the intended gigantic building at Kensington, which is to comprise a new National Gallery, you have published much correspondence, and promulgated many valuable hints. I venture to suggest, amongst other desiderata, that a gallery in it should be appropriated to the free exhibition of a collection of national antiquities, and that the nucleus of that collection should be formed from the contents of the dark corner cupboard in the British Museum, dignified by the name of the Ethnological Room, and the really valuable portion of the Horse Armoury at the Tower. That such a collection would be continually augmented by presentations and bequests of antiquities I have not the least doubt, and that it *should* be so, by the purchase of all truly desirable relics which fall into the hands of respectable dealers, I think would not be denied by Government; especially as I feel assured that her Most Gracious Majesty and her illustrious Consort, who have shown so much anxiety for the development of art in this country, would, if the matter were properly placed before them, give their unqualified sanction and support to the measure.

A.

THE ARCHITECTURAL MUSEUM, PARLIAMENT-STREET.

THE collection is increasing apace, and will, we are satisfied, prove of great use. Since our last statement, numerous additions have been made; including, from Mr. Scott, three of the figures filling the spandrels between the arches of the Angel Choir, Lincoln Cathedral; three figures from the Sepulchre, Lincoln, singularly fine; a fine boss from the passage leading from the Cloisters to the Chapter-house, Westminster; and a series of brasses from Westminster. A series of eight casts of bosses from the Cloisters, Lincoln, presented by Mr. Philip, sculptor; also a set of casts of ornamental detail, all from Lincoln. The fine head of St. Simeon, from the church at Venice of that name, presented by Mr. Ruskin, is specially worthy of a visit, it being singularly noble for that early time, the date being 1317. The sculptor of it thus records his name:—"Celavit Marcus opus hoc insigne, Romanis laudibus non parvis est sua digna manus." Some good specimens have also been presented by Mr. Gawen, which were purchased by him from the Cottingham collection. Mr. Burges has, since his last gift, given the museum a fine rubbing of the Lynn brass, one of the largest brasses in England; also the Crumpington brass. Mr. Chantril has given a fine Runic cross found by him. Mr. Minton has presented a series of tiles, from designs by the late Mr. Pugin. It is to be hoped that Sir Charles Barry will allow casts to be taken for the museum, of the valuable part of those obtained by him as models for the works at the Houses, Sir Charles having, it is understood, presented the whole collection to the department of practical art.

The school opened by the curator in connection with the collection, has now some fourteen pupils. The apartments which have been provided, in Cannon-row, Parliament-street, although rough, have a certain mediæval appropriateness not unsatisfactory. A better means of access, however, is desirable. Subscribers are of course needed, and we would further suggest to our readers, that they should look up such casts or specimens of ancient work as they may have, and present them to the museum. Although they may be of comparatively little worth themselves, in the aggregate they will help to form an illustrative series of great educational value. When the rooms are more in order, the committee should send out cards for an evening meeting there, and so bring their object and views prominently before the public.

IRON AND OTHER METALS.

AT the usual preliminary quarterly meeting of iron-masters of South Staffordshire, an attempt was made to pass a resolution to the effect "that in consequence of the large amount of orders on the manufacturers' books, the scarcity of coals, and the speculation existing in the pig-iron trade, no prices be declared." After a protracted discussion, however, this proposal was rejected, and a resolution passed, to the effect "that the prices of bars be fixed at 11*l.* hoops at 12*l.* and sheets and plates at 13*l.* per ton." It was also agreed to advance puddlers' wages at 1s. 6d. per ton, to commence in a fortnight, with a proportionate advance to all the other workpeople. As for pig-iron, so fully was the "excessive speculation" in that form of the trade article admitted, that the first resolution, "that no prices be declared," was virtually adopted. While the masters are thus setting the example of rising prices, complaint is somewhat inconsistently made of "the refractory conduct of the men" who supply the requisite coals. There are even fears that "a general turn-out" in that direction will bring matters to a dead lock, at least till the colliers be allowed by their more immediate masters that fair share of the spoil which the iron-masters have seen the necessity of at once yielding to their men. In respect to the prices lately fixed, the *Birmingham Journal*, which adds those of pig-iron to the others as from 5*l.* to 6*l.* a ton, says, "That these are not merely nominal prices, is proved by the fact that by the next post the dealers were informed of the decision arrived at, and the quotation of prices was the highest we have given. We have repeatedly expressed our opinion of the policy of this sudden, and, as appears to us, unjustifiable advance of prices. Undoubtedly the discovery of new uses for iron, and the increasing wants of consumers, must gradually and permanently increase the production; but these legitimate causes combined could not, without an extraordinary amount of speculation, have effected so marvellous an advance in price, an advance to which the insane mania of 1846 offers no parallel."

Other metals are following in the wake of iron. Tin has unexpectedly advanced 4*l.* 10s. a ton, and copper is daily expected to follow. That the latter is becoming scarce, there seems to be a general belief. Whether the American copper-miners of Lake Superior have deserted them for gold in California, we do not know; but it appears that the valuable copper-mines in Australia have been left for the Australian gold-diggings; and, doubtless, many miners in this country have been flying off both to California and Australia. The anticipated rise in copper, at all events, has doubtless more to do with gold than even with iron.

PARIS.

THE prolongation of the *Rue de Rivoli* has effected an immense improvement in that quarter of the city. The municipal commission have determined that the new street shall be arcaded, like the *Rue des Poulies*.

Workmen have been busy in the Pantheon, especially in the construction of three magnificent altars and a pulpit. The building was reinaugurated on the 3rd of January.

We learn from the *Revue des Beaux Arts*, that at the sale of the effects of Pradier the sculptor, his "Sappho" was bought by the Government for 13,000 francs (520*l.*), and his model in plaster of "Homer and his Guide," for 3,070 francs, by the city of Geneva, the native place of the artist.

TOMB OF MADAME DELAROCHE, MONTMARTRE.——MONS. F. DUBAN, ARCHITECT.

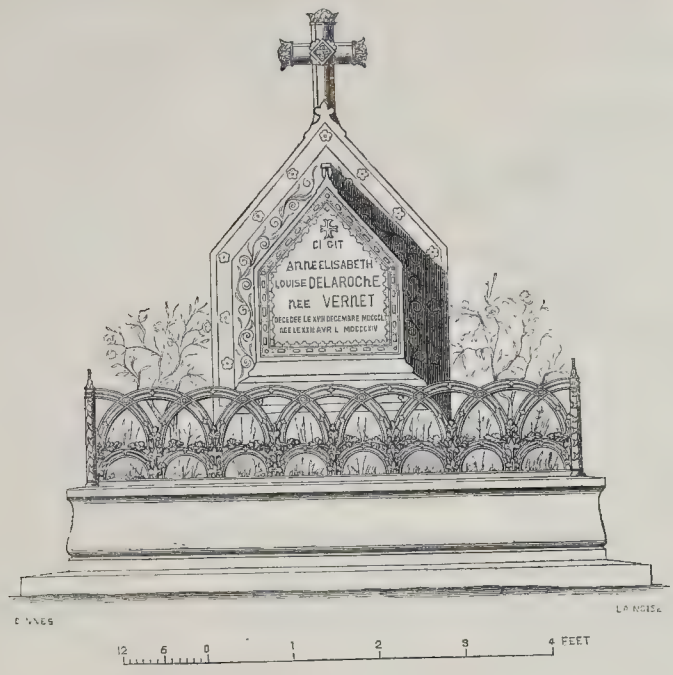


FIG. 1.

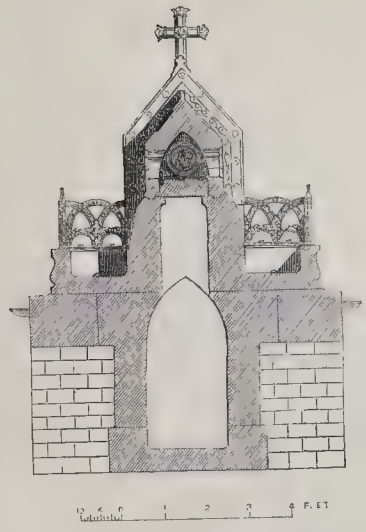


FIG. 2.

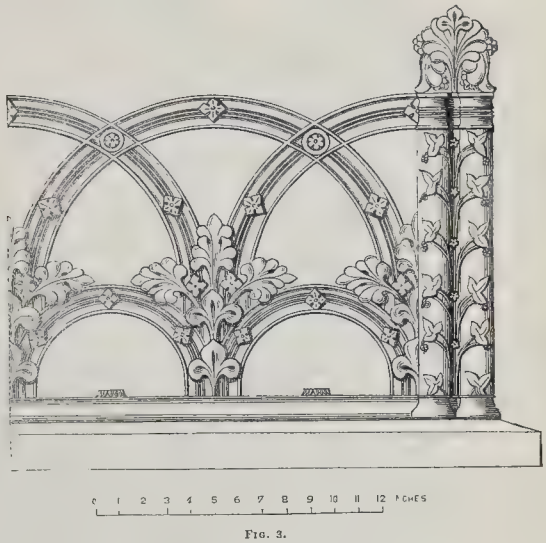


FIG. 3.

THE TOMB OF MADAME DELAROCHE, PARIS.

THE tomb which is set up in the cemetery at Montmartre, in memory of the wife of the painter Delaroche, displays much elegant fancy. It was designed by M. F. Duban. Fig. 1 is a view of the front of the tomb, with the railing round it; fig. 2 a transverse section; and fig. 3, part of the ironwork at large.

The sides of the tomb are perforated with three quatrefoil openings (shown in fig. 2), which allow a medallion of the deceased to be seen inside. The sloping sides of the top have also quatrefoil panels, but these are not perforated.

NEW SCIENTIFIC AND LITERARY SOCIETY AT BIRMINGHAM.—A public meeting of inhabitants interested in the advancement of science and literature has been called for the 10th inst. to consider the desirableness of establishing in Birmingham a Scientific and Literary Society upon a comprehensive plan; the meeting to be held in the Philosophical Institution Buildings, Cannon-street.

TRACTILE FORCE.

IN answer to your correspondent, "E. H." (p. 14), the following is the tractile force required for drawing one ton (over a pulley), on the respective surfaces:—

Edge Railway.	Granite Block, Wheel Courses.	Best London Pavement.	Broken stone road good foundation.	Loose Stone Road, without good Foundation.
10 lbs.	12½ lbs.	22½ lbs.	43 lbs.	140 lbs.

W. W.

PREVENTION OF THE SMOKE NUISANCE.

A COMMITTEE of the "York Health of Towns' Association," have just now made a report on the smoke nuisance, with evidence as to the causes of the nuisance, and the entire practicability and economy of prevention, which deserves consideration.

The report commences with a few extracts from the printed evidence of the Committee of the House of Commons (1843).

Mr. Faraday said, "When a fresh charge of coal is put upon the fire, a great quantity of evaporable matter, which would be called impure coal gas, is produced; and as that matter travels on in the heated place, if there be a sufficient supply of air, both the hydrogen and carbon are entirely burnt. But if there be an insufficient supply of air, the hydrogen is taken possession of first, and the carbon is set free in its black and solid form: that carbon carried out into the atmosphere is the smoke in question. The admission of air in a due proportion will entirely do away with smoke. There is no combustion without atmospheric oxygen."

Mr. Charles Wye Williams said, "A very few shillings will correct the nuisance from a small furnace: it is merely a perforated plate, or bricks with holes in them, or any way in which you can introduce the air in small films, or streams, or jets. In the *Hindostan* steamer, which went out to India, there were sixteen furnaces, and it cost only 25s. each, though it is rather an intricate apparatus in a steamer. Generally speaking, a very few shillings would be sufficient."

It has been strongly impressed upon the committee during their inquiries, that in some instances much of the injury inflicted upon the public by the soot from furnaces is due to the wilful negligence, ignorance, and prejudices of the workmen in charge of the fires; and that unless measures be adopted to obviate this source of evil, it will not be possible to abate the nuisance effectually or permanently.

THE RESULTS OF THE INQUIRIES MADE BY THE COMMITTEE.

Although the abundant evidence printed with the Parliamentary Report of 1843, is perfectly conclusive as to the practicability and economy of preventing the formation of smoke, and as to the propriety of legislative enactments for the protection of the public against the nuisance, it is not shown whether commercial or industrial interests had suffered in any degree where police regulations for the suppression of the nuisance had been carried out; nor (with one or two unimportant exceptions) is there any information as to the method of proceeding against offenders, or as to the results. The committee have therefore turned their attention to these points, in addition to the questions of the practicability of preventing smoke and of the saving of fuel effected. Amongst the towns in which police regulations have been enforced, Liverpool, Birmingham, and Manchester are pre-eminent, as well for the extent of their commerce and manufactures, as for the powerful opposition which could be brought to bear on the authorities in their laudable efforts to check so great an evil. They therefore made particular inquiries in official quarters in each of these towns.

In the year 1844 there were 176 chimneys in Birmingham, 111 of which poured forth dense black smoke for from 16 to 35 minutes per hour, and 65 averaged from 6 to 16 minutes of black smoke per hour. The exercise of the compulsory powers entrusted to the town commissioners in no respect interfered with the manufacturing industry of Birmingham, for in the report of their smoke-nuisance committee to the town council in 1851, when the powers of the commissioners were surrendered to the former, it is stated that —

"There has been since 1844 an increase of 103 steam-engine chimneys, 97 proprietors, 114 boilers, 1,165 horse-power; and as respects the present state of the smoke-nuisance, the inspector's report shows that various plans for the consumption of smoke have been applied to and are now used in 264 furnaces, and which suppress the nuisance from 224 chimneys, leaving about 55 chimneys discreditably bad, in consequence of the proprietors neglecting to use the means they have at their command. In some parts of the borough not within the jurisdiction of the commissioners, where the authorities do not appear to have given much attention to the subject, it is found that in these districts there are upwards of 80 chimneys which emit on the average about 34 minutes of dense black smoke per working hour. Of the chimneys now [1851] under inspection the following important results have been obtained.

A four-horse engine, with no means adapted to consume the smoke, emits dense black smoke 20 *minutes* per hour; whilst another four-horse engine, with the application of a remedy and care, only smokes 4 *minutes* per hour.

A rolling-mill chimney, with an engine of 100 horse power, with no means applied to consume the smoke, emits a black smoke of 30 *minutes per hour*; whilst another rolling-mill, with an engine of 100-horse power, a remedy having been applied, smokes only 6 *minutes per hour*.

A nail-mill engine of 18-horse power, having but little boiler-room, and no means applied to suppress the smoke, consuming 3½ *tons of fuel* per day, emits dense smoke for 28 minutes per hour. Another nail-mill of 28-horse power, having a sufficiency of boiler-room and other means, consumes but 2 *tons of fuel* per day, and emits smoke only 6 minutes per hour.

A screw-mill chimney, with an engine of 30-horse power and one boiler, consuming 6 *tons of coal* per day, emits dense black smoke 28 minutes per hour. Another screw-mill chimney, with an engine of 40-horse power and two boilers, consuming 3½ *tons of coal* per day, smokes only 5 minutes per hour."

It will be seen, on calculation, that the economy of the consumption of smoke in these two instances is respectively 61·0 and 56·2 per cent.; or, taking the value of coals at 5s. 9d. per ton, a relative saving of 296*l.* 6s. 3d. and 387*l.* 2s. 6d. per annum of 300 working days.

Of ninety-four furnaces in Birmingham, supplied with patented inventions,—fifty are Beddington's, twenty-seven Williams's, and seventeen Hall's. In March 1851, careful observations were made at Birmingham, under the supervision of Samuel Jones, the inspector to the town commissioners, to test the working of a smoke-consuming apparatus (Beddington's). The following were the results:—

Albion Mill, Lionel-street:

	Coal used.	Black Smoke.	Light Smoke.
Observations during 6 hours, without apparatus.....	30 cwt.	123 min.	42 min.
With apparatus (average)	26 cwt.	0 min.	7½ min.
Saving by use of apparatus in 6 hours }	4 cwt.	122 min.	34½ min.

J. Cadbury's Chocolate Manufactory:

Observations during 8 hours, without apparatus.....	25 cwt.	79 min.	119 min.
With apparatus	23½ cwt.	0 min.	13½ min.
Saving by use of apparatus in 8 hours }	1½ cwt.	79 min.	105½ min.

Manchester.—A deputation proceeded to this city, from York, on Nov. 1, and had an interview with the town clerk, who most kindly supplied every information in his power. The powers of the Manchester Police Act are not great, but the authorities have received so strenuous and cordial a co-operation from the manufacturers that a great result has been obtained by enforcing the law. At first the attempt excited much opposition, on the ground that it would interfere seriously with industrial interests, that it would drive away manufacturers, and that not to produce smoke was impossible. The Act was applied in the first instance with strict impartiality to leading manufacturers, magistrates, and members of the town council (who in some instances had to fine each other), and the practicability of working engines without smoke having been proved, no further opposition was made to the Act, and all the more important establishments adopted suitable means for preventing the nuisance. The deputation proceeded to inspect some of the large establishments, accompanied by Mr. Fox, the able superintendent: in all the nuisance was effectually prevented, and the saving in coal effected was from a fourth to a third. They were more particularly struck with the results obtained at the very large establishment of Messrs. Geo. Clarke and Co. who work with 216 horse power. Mr. Clarke said, that previously to the setting up of new boilers, the furnaces used to darken the air almost permanently, and so fill it with dense smoke and soot that the dress of persons passing along the street was seriously injured. Mr. Clarke informed the deputation that the saving of coal by the new boilers paid their cost in twenty-two months, the consumption of coal being diminished by 35 tons weekly, or at the rate of 1,700 tons per annum.

Mr. Houldsworth has calculated that Manchester would save from 200,000*l.* to 300,000*l.* a year by the consumption of smoke,—a calculation more than justified by the experience of other gentlemen. Mr. Houldsworth does not believe that the smoke can be wholly consumed; but he says it ought only to be produced in any quantity on making up the fires in the morning, and after cleaning out the furnaces; and that the smoke ought not at any time, after the first lighting, to be so dense that it cannot be seen through at the top of the chimney.

Mr. Heron, the town clerk of Manchester, reports that the practicability of preventing smoke is not now questioned by mill-owners, and the economy of so doing is equally certain. From many chimneys which formerly emitted dense smoke from morning till night, offensive smoke is now seldom if ever allowed to issue, and it is now generally admitted that it is not necessary to emit opaque smoke after the furnaces are in full operation. The powers possessed by the corporation are not extensive, but in Manchester, where the corporation have fortunately secured the willing co-operation of the mill-owners and others, in the efforts made to lessen the smoke nuisance, a most beneficial and striking reduction in the quantity of smoke previously complained of has been accomplished.

The committee consider it proved that it is perfectly practicable to abate the nuisance of dense smoke from furnaces; and that so far from any injury being inflicted thereby on commercial or industrial interests, the contrary result has been obtained, in the shape of a very profitable economy of fuel. Facts also show that police enactments, judiciously carried out, are sufficient for the purpose, and are not in any way injurious or oppressive to proprietors of furnaces.

The committee say they have reason to know that much disappointment and dissatisfaction have been experienced and expressed by those who have tried various patent methods; and they would therefore add a few brief observations respecting the methods that have been used.* To understand these, it should be always remembered that the term "*burning* of smoke" is not strictly correct: smoke consists of small particles of carbon in the form of soot, and is burnt with difficulty. Smoke is formed from the gas of the coal: a good furnace should prevent the formation of smoke, by burning all the carbon of the gas; or, in other words, by combining at a certain temperature every atom of carbon in the gas with two atoms of oxygen before it leaves the furnace. It is during the act of combination of these two that the heat is produced in great degree (though not entirely), the act being that ordinarily termed burning or combustion. When coal is placed on a fire, the same process of decomposition takes place as in the manufacture of gas; that is to say, carbon in combination with hydrogen is given off, constituting common gas. At a proper temperature, this unites with oxygen to form water and carbonic acid; and if there be a due supply of atmospheric air, there is no smoke produced; but if there be not a due supply of air, then the carbon cannot combine with oxygen into carbonic acid, but is precipitated as soot, just as when a common gas-light, or an oil-lamp, is turned on too high; consequently, all such carbon is wasted fuel. It is the great principle, then, of all smoke-consuming furnaces to maintain a proper temperature of the coal-gas, and to supply a due quantity of atmospheric air; and that method is the best which secures both these essential requisites in the most effectual, the simplest, and most economical manner.

* There are about fifty described methods for preventing smoke, more than half of which are patented.

When the methods recommended have failed to answer the expectation of proprietors, the failure has generally been in two points. 1. There has been a continued formation of smoke, in spite of their use; or, 2. There has not been the expected economy in fuel, although no smoke was formed. Now as to the latter point it is to be observed, that the fault is generally in the method; as to the former, in the management. It is quite possible to construct a furnace so that little smoke shall appear, and yet there be a great waste of fuel. Of this kind are all those in which the furnace is so constructed that the carbonic acid gas produced in the furnace is mixed in large proportions with the atmospheric air supplied. There is another way in which the proprietors are also disappointed in the promised saving. The great economy is obtained by a more perfect combustion of the *coal-gas* given off; consequently, if the coal originally used contained little bitumen (from which the gas is produced), and approached to the nature of anthracite, there will be much less saving proportionately than if a very gassy coal had been used. The saving will be proportionately less, too, if the fireman has known and attended to his business when feeding the common furnace. The state of the atmosphere itself also makes a difference: if it be cold and dry, as in frosty weather, the combustion will be better than in damp, warm weather. All experience shows, however, that it is by negligence in the construction and management of the furnace that the greatest injury is inflicted on the public and the proprietor. It is quite certain that no method whatever will answer the intended purpose unless the fireman does his duty; and it is equally certain that any ordinary furnace without any appliances whatever, if it be large enough in proportion to the horse-power required (that is to say, if there be sufficient boiler room), may be used so as to cause very little nuisance, provided the fire is so attended to that a due supply of atmospheric air can enter it.

Although with ample boiler-room and careful firing, much of the existing smoke nuisance might be obviated, it must be stated, however, that no proprietor of a furnace who consults his own interest (not to mention his neighbour's), will neglect to provide at least some simple and inexpensive apparatus for the *due* admission of air, as the best means of economizing fuel and preventing the formation of smoke, and at the same time so watching over the conduct of his servants that they shall do their duty. Those laws seem very reasonable which inflict a penalty on the proprietor for neglecting to prevent the nuisance *when* practicable; and it has occurred to the committee that as experience has shown how difficult it is for a proprietor (however anxious he may be) to secure the attention of the fireman to his fire, and how wilfully careless this class of men are, it would be advisable to extend legislation to them, by subjecting them to a penalty, as well as the proprietors (who have hitherto been the only parties mentioned in Police Acts), whenever they allowed smoke to be formed, and it could be proved that it was *practicable* to prevent it. The employer would thus be spared the necessity of dismissing his fireman for neglect of duty, and could still, if he thought right, encourage him in habits of forethought and attention by adding to his wages a proportion of the saving he effected.

In presenting such abundant and convincing evidence as to the economy to the manufacturer of preventing smoke, and as to the efficacy of the means requisite to that end, the committee wish to add finally, that they do not think it at all necessary that such economy should be demonstrated. On the contrary, they feel strongly that even if the prevention of smoke entailed an outlay upon the proprietors of furnaces without any equivalent advantage, their neighbours and fellow-citizens may reasonably expect that every practicable effort should be made to abate the nuisance, in consideration of the incalculable injury it inflicts upon their health, comfort, and property. Families in every grade of society, and of every calling, but especially large numbers of the industrious poor, are under an imperative necessity to reside in the city. The soot injures their clothing, their furniture, their goods,—prevents the due ventilation of their houses, by compelling them to keep their windows shut to exclude the soot,—and in various ways inflicts domestic and personal discomfort. Such of the wealthier inhabitants as are able, leave the city to avoid the nuisance, and thus valuable house-property is depreciated in value, and the poor and other rates proportionately increased in the localities infected with the nuisance.

PROVINCIAL NEWS.

Wolverhampton.—A site for the local school of Practical Art has been purchased in Darlington-street; the plan of Mr. Banks, architect, accepted, and builders' estimates received; but an increase of funds, it appears, is requisite ere farther progress can be made. Out of 2,500*l.* the sum necessary, according to the local *Chronicle*, only about 900*l.* have as yet been contributed.

Trowbridge.—Hilperton church was on Wednesday in last week consecrated by the bishop of the diocese, after having been rebuilt on the old foundation, and considerably lengthened both in nave and chancel. Its entire length is 91 feet, and width 21 feet. The churchyard has also been considerably enlarged, and was consecrated at the same time. The expense incurred in these improvements amounted to about 1,100*l.* There is still a deficiency of 80*l.* The church has been rebuilt in the early decorated style, according to the plans of Mr. Wyatt. The roof is open. The church contains sittings for 300, of which 250 are free.

Merthyr.—Pont-yr-yn new church, in the immediate vicinity of the Taff Vale Railway Station at Troedyrhiw, was to be consecrated on Thursday. This church, the designs for which were furnished by Mr. J. Prichard, of Llandaff, architect, is so contrived as to admit of the addition of transepts when required. During the last two or three years a population has been rapidly springing up both at Troedyrhiw, where there had been previously a small village, and at Pont-yr-yn, at the other side of the Taff; and this population already amounts to nearly 2,000, without any apparent diminution of the rate of building. The site of the church was given by the Hon. R. H. Clive, and the endowment by Mr. Hill.

Liverpool.—The new borough gaol at Walton will be completed and ready for the reception of prisoners by the close of the ensuing summer. The shell of the building is up, and the outer wall finished, so that the work remaining to be done is chiefly to put in the floors and fit up the cells branching on each side from the long corridor.

Coldstream.—The water-works, for which the inhabitants of this place are indebted to the liberality of Sir John Marjoribanks, have just been completed, and at a numerous meeting held on the 22nd ult. it was unanimously resolved, on the recommendation of the committee, that a column with a suitable inscription should be erected as a lasting public record of gratitude to the young baronet. Liberal subscriptions were at once offered.

Berwick-upon-Tweed.—A company has been formed under the appellation of "The Border Cemetery Association," for the purpose of providing a suitable place of interment for the borough of Berwick-upon-Tweed, the grounds of which will be laid out in a tasteful manner, and form a place of resort for the enjoyment of a walk in the summer evenings.

Glasgow.—At a recent special meeting of the Glasgow Water Company, the chairman stated that, after taking the advice of Mr. Rendel, C.E. as to the propriety of introducing an additional supply of water from Loch Lubnaig, the directors had agreed to instruct Mr. Rendel as engineer-in-chief, and Mr. Leslie and Mr. Mackaird, to prepare plans of the proposed works. It is now proposed, also, to render available the waters in Loch Doine and Loch Katrine for maintaining the flow down the river Teith, and to construct a regulating reservoir on the high ground above Milngavie, the better to guarantee regularity of supply to the city. The engineers have estimated the cost of the works at 490,000*l.* The proceedings of the directors were unanimously approved of, and they were authorised to proceed with the Bill to enable the company to execute the necessary works.——On Thursday, in last week, according to the local *Gazette*, the key-stone of the middle arch of the Victoria-bridge was fixed in its place by Mr. York, this operation being all that was required to complete the construction of the whole five arches of which the bridge is composed. The bridge proper is now finished, therefore. In a few days the centering was to be removed from all the arches, so that now little remains to be done but to construct the roadway and erect the parapets. The bridge will probably be opened by the time promised,—July next. The arches increase in span as they tend inwards, the centre arch being 80 feet wide, the intermediate arches 76, and the outermost 67. The length of the whole is 467 feet; and the breadth of roadway, 60 feet.

Melrose.—The New Free Church here, according to the *Kelso Chronicle*, was opened on Wednesday week. It is in the Early English style, and rises on an eminence at the west-end of the town. It measures about 90 feet in length by 40 feet in breadth, and has five bay windows on each of the north and south sides. At the east-end there is a triplet, and at the west a wheel window, both of which are filled in with stained glass. The groining, corbels, and bosses of the ceiling are of the simplest description. The entire cost of this church, which has also a spire of considerable altitude, and which, without any gallery, accommodates nearly 600 people, does not exceed 2,000*l.* There is a carved pulpit and canopy, the work of a native artist, and which, together with the stained-glass windows, by Messrs. Ballantine and Allan, of Edinburgh, have been presented by friends to the congregation. The architect was Mr. Charles Wilson, of Glasgow; the builder, Mr. Oliver, of Kelso.

Aberdeen.—A design for a "*Bon Accord*" Exchange, to form a termination to the extended vista of Union-street (the top of Castle-street), has been lithographed for distribution by Mr. A. W. Bisset. Aberdeen is familiarly termed "*Bon Accord*," the motto on the City arms.

WESTMINSTER ABBEY.

AT Westminster Abbey Church, about ten minutes are allowed for taking seats before the organ strikes up, and about the same time for the dispersion of the congregation after the blessing; and the gates are absolutely locked, as soon as the sexton, who had performed the office of whipper-in, has ejected the last lingering loiterer! The circumstance of this rigorous limitation as to open doors is productive of serious inconvenience to the public; and it is astonishing to find, considering the rush at the doors to obtain seats, and also the painful sensation of *cold* and *damp* which is felt even in the summer season, that such crowds should present themselves at the gates long before they are opened, and that, too, in the worst weather.

On a late occasion, the writer saw a lady overthrown, trampled on, and hurt, and on inquiry found that she had for years been in the habit of attending the morning choral service, and that she invariably took her station close to the door, but at one side. The love of sacred music no doubt leads many to endure the crush, and to despise the cold: curiosity draws many more; but there are few who regard their health and comforts that would be enticed to repeat a visit at the sacrifice of both. Every Englishman glories in the splendour of this temple, of which he is justly proud; but the piety of the greatest zealot for High Church must be indeed ardent, if he can continue his devotional attendance throughout our dreary winter. The windows and walls stream with damp, the statues perspire of it, and the stone floors are below zero!

Wherefore is there no fire? Is the chapter too poor? Or is there danger to be apprehended (St. Paul's was erst burnt down) from the inflammable nature of the materials?

On a recent visit a devotionalist could see nothing susceptible of fire, nothing that could aid combustion, save the pew divisions, the seats, and the organ: he thought that all danger might be avoided by properly arranged pipes of hot water: he considered that under the modern improved system of stoves (the columns of the *Builder* advertise many) a genial, or at least bearable, temperature might be assured at a small cost, certainly at less than

one halfpenny *per soul* of the worshippers: in fact, there is little of an inflammable nature in the church to be at all dreaded, if we except an occasional sermon against Popery!

If, however, the sculpture be of any value (and much of it has begun to exfoliate), or if it be desirable to keep the organ in good tone and preservation, not to speak of the congregation, a fire would be a mercy and a blessing.

Lastly, as the preacher might say, and as our service prescribes, all worshippers are invited: the "Jubilate" opens with the pealing organ:—"Serve the Lord with gladness. Oh! go your way into his gates with thanksgiving, and into his courts with praise." In Roman Catholic countries the temples are all open, and at all times, although but one or two be gathered together, or even for straggling visiters of *other faiths*. In England alone are they closed. Surely this is a mockery!

There is also another view, not altogether canonical, but, in these times, rational. In our open places there is little good sculpture, whilst there are too many evidences of low art, or rather of caricature. Now, in the cathedrals there are many studies of the first artists, some that would not discredit the Vatican. If, in Rome, a straggler may admire, a student may sketch them, if he may enter at all times, and *without a fee*, how mercenary must it appear to foreigners that all are excluded here who come not provided with Peter-pence, and a good many of them!

Whether the closing of doors is promotive of religion, the bishops may be the best judges. Fine arts and Christianity formerly went hand and hand, but the connection in this land has long been severed. Nevertheless, it might be well to warm the churches, if only to preserve them, and the gems they contain.

QUONDAM.

THE PIPE SEWER AT KILBURN.

MY attention has been called to a letter in the *Builder* of 25th December, signed "George Duncan," regarding "the failure of a pipe sewer at Kilburn," and in which Mr. Duncan states, "that the owner of the sewer gave a flat contradiction to Mr. Lovick's statement" of the cause of failure, as reported in the *Builder* of the 18th ult.; "and accounted for the failure by reason of the pipes being too thin and brittle for the great pressure above them; and that it was not only the 10 feet mentioned by Mr. Lovick that failed, but the whole length of the 15-inch sewer, measuring above 1,000 feet."

Mr. Duncan is in error in supposing that I alluded to any *portion* of this work: my remarks, as correctly reported by you, applied to the *whole* of the work mentioned by Mr. Duncan, which had been done in the most improper manner; and this I subsequently repeated in answer to Mr. Duncan's "flat contradiction." I mentioned that the *trench* was 10 feet in depth, not that 10 feet in length of pipe only had failed, as stated by Mr. Duncan. I also stated that the pipes which had been laid down, and which had been crushed at the time by the improper performance of the work, were, for the most part, condemned pipes, very many being cracked before they were laid down. Of the cause of failure, as reported by you, Mr. George Duncan was one of my informants; and it was upon Mr. Duncan's own statement to me of the causes of failure, that I brought the matter to the knowledge of the Commissioners of Sewers at the time, by whom it was thoroughly investigated.

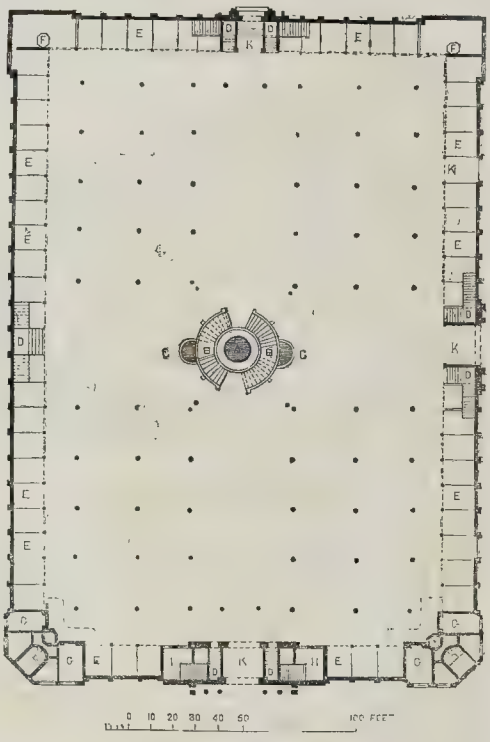
THOS. LOVICK.

P.S. I might add that very few brick sewers could have withstood the shock of the falling earth which in this case was caused by the improper striking of the timbers, as soon as each length of pipe was laid, and the letting of the whole mass of ground, 10 feet in depth, bodily in upon the pipes, and without the least protection of the pipes by ramming or otherwise, to resist the immense force of such a mass.

T. L.

OPENING OF EXHIBITION TO THE WORKING CLASSES.—The Liverpool Academy's Exhibition of Paintings was last week opened to the working classes at reduced prices.

PLAN OF BOLTON MARKET.



THE NEW MARKET AT BOLTON.

SOME of our readers will remember that about two years ago the corporation of Bolton advertised for designs for a market-house; that the drawings were afterwards referred to the conductor of this journal to report on; and that the premiums were ultimately awarded, 1st to Mr. G. T. Robinson, and 2nd to Mr. Leigh Hall. The design of the first-named architect, with certain modifications, has been carried into execution, and we now give a view and plan of the building as executed.

The site upon which the market is placed is an extremely irregular plot of land, sloping considerably to the north and north-east, and forming the bank of the river Croal: indeed, so great is the declivity, that there is upwards of 50 feet of difference between the foundation level at the north-east angle and the ground-line at the south-west.

Owing to this, the market building is of two stories, the lower one entirely vaulted over, and devoted to storage purposes, while the upper one serves as the general market. The plan, in accordance with the suggestion of the referee, has been made a regular parallelogram instead of the rhomboidal figure given in the original. The sides are respectively 218 feet and 300 feet long.

The whole of the area thus circumscribed is covered by wrought-iron roofs, supported by ornamental cast-iron piers, brackets, and girders, and divided into a nave of 54 feet span, and six aisles, each 26 feet wide, both intersected by a transept of equal width and height with the nave. At the point of junction between the nave and transept-roofs rises a large ventilating-shaft, whose summit is 76 feet from the market-floor, and immediately beneath which are two circular staircases leading to the basement, between which is situated a fountain on the lower level. To the exterior wall is affixed a row of shops, each 16 feet high, and over them is obtained a gallery for the sale of light commodities, and receiving additional light from the circular apertures surmounting the arcade.

The internal height of the exterior walls is 28 feet from the market-floor. The height of the aisles' roofs is 38 feet to the apex; and the central and transeptal roofs have an altitude of 52 feet, being raised above the narrow roofs of the aisles by a clerestory of cast-iron, filled with rough plate-glass louvres. The angle-buildings seen in the perspective contain offices and residences for the market inspectors and others.

The contractor is Mr. William Tomkinson, of Liverpool; and the probable cost, when complete, will be, we are told, about 20,000*l.* exclusive of the two viaducts and a retaining wall to the river Croal, which are now in hand.

REFERENCES TO PLAN.

A. Fountain in basement.
BB. Stairs to basement.
CC. Fountains in market.
DD. Stairs to gallery.
EE. Shops, with gallery over.
FF. Ventilating-shafts and flues from heating-apparatus.
GG. Market inspector's residence and offices.
H. Clerk of market's office.
I. Public weighing-machine.
KKKKK. Entrances.

SOMERSETSHIRE ARCHÆOLOGICAL AND ARCHITECTURAL SOCIETY.—The second conversazione was held at the Museum last week. The rooms were well filled. Dr. Metford commenced the evening's proceedings with a lecture on "Electricity." Mr. H. Batten, of Thorn Falcon, delivered an address on the "History of the Times, and Murder of St. Thomas à Becket." The Rev. Mr. Phelps, of Bicknoller, concluded by reading a paper on "Geology." Not much Archæology.

BOLTON MARKET.—Mr. G. T. Robinson, Architect.



SIGHTS AND SCENERY.

The Princess's Theatre.—The pantomime here is burlesqued from the story of Cherry and Fair Star, and has some pretty scenery,—"The Peri's Retreat," "Icy Summits of the Kork-Assus," &c. It is altogether well done, and the world-famous characters Harlequin, Columbine, Clown, and Pantaloon, are ably sustained. The doings of these four in a pantomime form a picture of life which all feel, although they may not recognize it, and thence its enduring popularity. On the stage the mutually supporting Innocence and Love always triumph over Malevolence and Foolishness: it is not always so out of doors. The descent of the fairies on to the stage at the Princess's by the boughs of trees is novel and pretty.

Adelphi Theatre.—A position whence you look upon the crown of the actors' heads,—where you may see a steady individual seated in the river winding the floating ice of the Ohio into motion,—a portly and plush-clad attendant in the midst of the fairies leaning against the brick wall which bounds so narrowly the domains of enchantment behind the scenes of the Adelphi,—where you can observe the carpenters behind the roses, and, in short, see the process better than the proceeds—all the arrangements, and none of the effects,—is certainly not the best place to see and judge of a Christmas pantomime. We happened to be thus placed at the Adelphi, thanks to the fondness for this house of a discerning public which had left scarcely a corner unfilled, so we will simply say that "Nell Gwynne," with some pretty dancing and groups, Mr. Honey's burlesque acting, and Flexmore and his well-known imitation of dancers, is very successful. There will be no occasion to say to the public as King Charles did, "Don't let poor Nelly starve." There are few things connected with the property room in which greater improvement has been made in late years than in the pantomime *masks*. Many of these in "Nell Gwynne" are exceedingly clever.

ON IMITATION IN DECORATION.*

It has been common with us to paint the joiner work in imitation of some fancy wood, and to this art, and that of imitating marbles, the chief attention of our decorators has been directed. Great success has attended their efforts, and in the late Industrial Exhibition specimens were to be seen which actually excelled the reality. But a notion has sprung up of late years that all attempts at imitating material are to be condemned as æsthetical falsehoods. It becomes, therefore, a matter of some importance to ascertain whether a practice which prevails so generally is founded on a false principle, and this discussion occurs appropriately in its present position, as connected with the style of finishing the wood-work of our apartments. The author of the "Seven Lamps of Architecture" says:—

"Touching the false representation of material, the question is infinitely more simple, and the law more sweeping: all such imitations are utterly base and inadmissible. It is melancholy to think of the time and expense lost in marbling the shop-fronts of London alone, and of the waste of our resources in absolute vanities, in things about which no mortal cares, by which no eye is ever arrested, unless painfully, and which do not add one whit to comfort, or cleanliness, or even to that great object of commercial art—conspicuousness. But in architecture of a higher rank, how much more is it to be condemned. * * * I may, perhaps, be permitted," he continues, "while I express my sincere admiration of the very noble entrance and general architecture of the British Museum, to express also my regret that the noble granite foundation of the staircase should be mocked at its landing by an imitation, the more blameable because tolerably successful. The only effect of it is to cast a suspicion upon the true stones below, and upon every bit of granite afterwards encountered."

And again, at another part of the same book:—

"The worth of a diamond is simply the understanding of the time it must take to look for it before it is found. * * * Exactly as a woman of feeling would not wear false jewels, so would a builder of honour disdain false ornaments. The using of them is just as downright and inexcusable a lie. You use that which pretends to a worth which it has not; which pretends to have cost, and to be, what it did not, and is not: it is an imposition, a vulgarity, an impertinence, and a sin. Down with it to the ground: grind it to powder: leave its ragged place upon the wall rather You have not paid for it: you have no business with it: you do not want it. Nobody wants ornaments in this world, but everybody wants integrity. All the fair devices that ever were fancied are not worth a lie. Leave your walls as bare as a planed board, or build them of baked mud and chopped straw, if need be, but do not rough-cast them with falsehood."

I cannot agree with those who think there is no force in these arguments. They seem to me not a little convincing, and coming to us with the sanction of Mr. Ruskin's name, they would have been worthy of our best attention, although they had been possessed of no other claims. But I believe that they are fallacious notwithstanding.

It will be observed that the sin is held to lie in the *deception*. We shall not be suspected of an intention to argue that there is no harm in a moral deception; but it may, perhaps, be asked on what authority the principles of ethics are in this case applied to æsthetics. The principles of ethics are founded (leaving revelation out of view) on the primary convictions of mankind, and I am not aware that æsthetics can lay claim to any *higher* authority. The very fact, then, that these imitations are so generally practised, and so much admired among an educated people, certainly affords a presumption in their favour. But we shall pass from this point, and ascertain, as careful judges ought to do, on what side the best precedents can be quoted. Now, it is common in disputed questions of taste—which means, of course, in all questions of taste—to appeal to the authority of the ancient Greeks as the court of last resort; and I should be sorry to depart from a custom which, if not yet venerable from its antiquity, has at least the merit of being the fashion. And in appealing to them we may congratulate ourselves, and perhaps the *ancient* Greeks too, that they do not live in *modern* times; for one of two things must have been the result of such a misfortune: either we should have wanted a tribunal before which we could bring our cases for ultimate decision, or they must have had an accumulation of suits which would have left the Court of Chancery altogether destitute of a reputation.

Did the Greeks, then, allow the principle of deception in art?

It is recorded of Xeuxis, one of the greatest painters of ancient times, that the birds came and pecked at the fruit on his canvas. Whether this story be more worthy of belief than that of Arion and his dolphins, we know not, but the fact of its being related sufficiently proves that the wonderful people whose support we claim were not less alive to the power of painting than of music, and that the deceptive character of the former was reckoned one of its chief merits. In a trial of skill between Xeuxis and Parrhasius, the victory was adjudged to the latter, when his opponent, entering his studio, desired him to withdraw the curtain behind which he supposed his rival picture was concealed,—the curtain itself being the picture; and Xeuxis gracefully acknowledged his defeat, saying his own picture had merely deceived birds, while the other had deceived men.

But we depend not on the support of the ancient Greeks alone. Mr. Ruskin, and all the other writers on this subject, admit of veneering, both with wood and marble. Now it is difficult to see how there can be more harm in making a wall look like solid marble by veneering it with paint, than by covering it with thin slices of the marble itself—the common method, when that material is actually made use of. It appears quite as justifiable to paint a door in imitation of maple or satin wood as to make a veneer of the same on fir.

But deception is allowed in many cases besides painting. The chief merit of novel writing and of acting consists in their deceptive character. It would be a new style of objection to the story of Robinson Crusoe that it was a gross deception—that no one could read such a work without feeling convinced that it narrated facts; and to Macready's acting, that he appeared to be animated by the passions which his words expressed. It is difficult to see wherein these cases differ, so far as the deception is concerned, from that of imitative painting. The paintings on the ceilings of the Bourse in Paris, and many of the friezes in the Louvre, Versailles, &c. are drawn and painted with such exquisite nicety as to fulfil all the conditions required of the material represented. And probably these objects obtain greater admiration than would have been bestowed on sculpture itself, even as we should admire the man who could personify a passion, while we should disregard one actually under its influence.

But the novel writing, the dramatic representation, and the painting, only deceive those who have not knowledge or penetration enough to detect the imposition. In this case, indeed, if the deception is the crime, the balance of argument, according to the views of our opponents, is in our favour. The painting contains internal evidence to reveal its true nature, while the real character of the romance and the acting, if they at all fulfil the conditions required of them, must be ascertained from certain conventionalisms known only to the initiated, or from extraneous sources. But, indeed, although imitations may occasionally deceive, they are not used for the purpose of deception. Deception may therefore in every case be altogether incapable of defence, and imitations of woods and marbles may be justifiable notwithstanding. Indeed, in the same chapter which contains their condemnation there are passages which seem directly to justify such of them as decorators are in the habit of using. "Gilding," Mr. Ruskin says, "has become, from its frequent use, innocent." "It is understood," he says, "for a film merely, and therefore is allowable to any extent." I cannot admit the abstract justice of the doctrine contained in this passage, for it would go far towards justifying any practice, however absurd, which might happen to have the sanction of antiquity, and it is certainly altogether at variance with the principle on which imitations are condemned. According to this doctrine, gilding must at one time have been wrong. But that which is originally wrong can never be made right by repetition. On the contrary, it is common to hold that what is here admitted as an atonement for the offence serves as an aggravation of it. But in our view of the case we are at full liberty to take advantage of the statement, which—even granting, for argument sake, that deceptions cannot be allowed—supplies us with an apology for imitating woods and marbles in all *legitimate* situations; for the use of them has been for a long period so common, and the real materials which are usually imitated so rare in internal fittings, that they will seldom, if ever, pass for aught else than what they are.

Several causes combine to favour the use of imitations, which I shall mention in the order of their importance:—1. Their beauty; 2. Their durability; 3. The dignity which they confer as objects of cost.

Their beauty arises from various sources. One of these—common to all works of art—is the rare talent and skill displayed in the execution, and which the practised eye at once detects. The second is an inherent beauty, and is due to the colour, shades, and veining, which, constituting the loveliness of the real object, are found only in a less degree beautiful in the representation; while a third class of beauty may be discovered in the deceptive character objected to, and which, to use the words which Mr. Ruskin employs in reference to another matter, forms a legitimate appeal to the imagination. The durability of imitations of woods and marbles forms a strong recommendation, for they are lasting beyond all other styles of painting. As objects of cost they are in themselves of no mean value, but the fact of their being executed in imitation of objects still more costly is never taken into consideration.

These reasons for the use of imitations seem of themselves sufficiently cogent, while their beauty we have traced to the identical sources from which the beauty of all works of art is *in some measure* derived. No doubt they are altogether wanting in beauty of the highest class, but that which they do possess is derived

* From a paper read before the Architectural Institute of Scotland.

from sources which are quite legitimate. This explanation serves to expose the nature of the fallacy contained in the arguments against representations of material generally, and which would thus appear to consist in placing under the same category imitations of objects which are used *solely or chiefly on account of their beauty*, and those which are used *solely or chiefly on account of their suggesting ideas of cost*. A fancy wood is an example of the former, a precious stone of the latter. You may deceive by making an article which possesses very little real value resemble a costly one; but to speak of deceiving as to beauty would be an absurdity. The appearance of cost and of value may exist without the reality, but the *appearance* of beauty and the *reality* are one and the same thing.

There are, however, several conditions, attention to which is imperative in the use of imitations, and, if these are observed, they may be resorted to without infringing the laws of good taste.

1st. That they be not employed where the material represented would of itself be out of place or inappropriate.

2nd. That no object be painted in imitation of one material which, from its form, construction, or application, was obviously or necessarily composed of another.

3rd. That no imitation be employed in positions where we are entitled to expect that the real material should be used, or where the discovery would create disappointment.

In conclusion, why should not the principle of generalization common to all the arts be allowed to extend even to the humble one of imitating woods and marbles? A skilful imitator does not require to copy, and does not copy individuals merely: he may adopt the principle which Bacon lays down of copying all the best parts from various individuals, that he may make one the more excellent. And if we must admit the principles which govern the æsthetics of mere decoration to be as rigid and unyielding as those which fix the foundations of morals, we may still, taking another view of our subject, claim for imitative painting the same admiration that a skilful intellectual gladiator obtains, who, without any intention to deceive, or without being himself deceived, succeeds in making the worse appear to be the better reason.

THOMAS PURDIE.

BUILDINGS INJURED.

AMONGST the wreck of the recent hurricane, we have accounts of the following:—

Windsor.—The large gasometer on the premises of the Royal Gas Company, near the Great Western Railway station here, was blown out of the tank, knocking down the massive brick pillars, and entailing injury upon the works to the extent of some hundreds of pounds.

Lincoln.—At the Tattershall station here, the engine shed, opposite the workshops, and about 200 yards south of the station, was, without a moment's warning, blown to the ground, and three men buried in the ruins. Two escaped: the third, we regret, was killed on the spot.

Grantham.—The new workshops in course of erection on the Spittlegate-road, by Mr. Hornsby, the well-known agricultural machinist, were blown down. The front and back walls, with the south gable, had been built up, and the wooden frame of the roof put on.

Derby.—Here during the hurricane a violent peal of thunder burst over the church, the lightning striking and shattering the upper portion of the spire, and throwing down the masonry in fragments all around. Upon examination, it was found that about 3 yards of the spire had been thrown down, many of the fragments striking and considerably injuring the roof of the church. "It is to be hoped," says the *Derby Mercury*, in describing the circumstance, "that the authorities, in restoring the spire, will not fail to provide it with a lightning conductor;" from which it is pretty clear that the spire was not so protected. Was not this spire, on that very account, the centre and the fomenter of the local thunder-storm which here accompanied the hurricane?

Middlesborough.—Great damage has been done to the works of Messrs. Bolckow and Vaughan. A tall chimney-stack, which was much shaken by the wind, opened in several places, and must be taken down and rebuilt: the upper part, for several yards, has been removed to relieve the damaged portion. A new building, three stories high, just finished and roofed, has been overturned; and a new set of sheds, erected on cast-iron pillars, near the river, have also been destroyed.

Haslingden.—Two of the iron girders of the bridge which carries the old Haslingden and Blackburn turnpike-road over the East Lancashire Railway, near this place, gave way and came down with a tremendous crash; iron, soil, and stones blocking up both lines of rails underneath.

Salford.—The octagonal chimney of the new workhouse was so much injured that it will have to be taken down to the square base upon which it stands. The structure, when complete, was of brick, with a stone cap, and its height from the top stone to the ground, 30 yards: a large portion of it was screened by surrounding buildings.

Kersal Moor.—The most serious disaster in the Manchester neighbourhood happened to St. Paul's Church, Kersal Moor. The pinnacle at the south-east corner of the tower, at the base of the spire, was blown down upon the roof, and as the stones were large and heavy, one of them weighing about three-fourths of a ton, they broke completely through, and destroyed several pews below. A second pinnacle fell in a short time after, doing further damage. Two or three of those remaining were loosened, but were removed or fastened with ropes in course of the day; but on Sunday night another, which had been considered safe, fell, and completed the damage by breaking up the Caen stone font in the south aisle. The damage is estimated at not less than 500*l.*; for the roof, it is believed, must be entirely renewed.

ORNAMENTAL PLASTERERS IN MANCHESTER.

THERE is a little dispute in Manchester between the architects and the "Operative Plasterers' Association," the grounds of which are these:—Some of the architects in Manchester have recently adopted a system of inserting a clause in specifications of work entrusted to their superintendence, whereby they are enabled to give the ornamental portion of the work into other hands than the contractor for the general or "rough" work, by leaving the ornamental portion out of the contract, to the benefit of one particular ornamentist, who obtains the execution of the ornamental portion from these architects, and, in a manner, makes his own charges for this portion of the work. The plasterers say they have not the slightest chance of competing with the ornamentalist named, as the contract is not thrown open to fair rivalry amongst the master plasterers, which is all they desire. Besides, there is another important consideration, they say, viz. causing the owners of property to give a much higher price for the whole of the plastering than if it had been all (ornamental and general work) included in one contract. They deny that the particular individual is superior in skill to others, and say they "are determined to resist to their utmost such an act of injustice as the one complained of." It is very natural that they should dislike to do the plain work and run the mouldings for other men to come and put up the ornamental work: we like the feeling greatly, but we are so much opposed to any interference with the natural course of trade that we cannot encourage them to the resistance they threaten. If other firms can do the work as well as the establishment objected to, with a saving to the employer, they may depend on having opportunities afforded them; and if they cannot, it would be scarcely consistent with "Manchester policy" to try to prevent employers from going to the best and cheapest market. We hope it may have the better effect of leading plasterers to improve in their art: this is much needed.

MORTARS AND WINE.—Lime contained in mortar being considered injurious to wines by some merchants, I should like to know if cement would obviate the difficulty?—P.

APSLEY HOUSE, PICCADILLY.

THE present Duke of Wellington has shown his desire to meet the wishes of his countrymen and countrywomen, by opening to the public the residence of the lamented Commander, and thousands will doubtless avail themselves of the opportunity thus afforded them. We had the advantage of a private view, but at the moment of going to press, and so can do little more than mention the circumstance for the information of our readers. The house was originally built for the Earl Bathurst. It was bought by the duke in 1820, and afterwards enlarged and reformed, externally, under the direction of the Messrs. Wyatt. It is not a lively house internally; indeed, were it not for the frightful weather we are now enjoying, which may deceive, we should say it is dark, especially the staircase and the picture-gallery. There are many interesting, and some few fine pictures and works of art; but the last rooms passed through by the visitors,—"the Secretary's room," "the Duke's private room," and "the Duke's bedroom,"—will, after all, most interest the greatest number. The bedroom here, as at Walmer, is strikingly bare and simple. The house will be open on Tuesdays, Thursdays, and Saturdays, during the present month, to tickets, which will be issued by Mr. Mitchell, of Bond-street, in answer to *written applications*. Mr. Mitchell will need an extra clerk or two.

BUILDING NEWS IN IRELAND.

THE first rib of the southern aisle of the Dublin Industrial Exhibition building, has been raised to its resting-place. The ribs for the nave and aisles are ready for fixing, and all the columns of the galleries will soon be placed in their sockets. The trusses of the roofs over the compartments between nave and aisles are in some parts fixed, and a large quantity of them are completed. The iron work is being quickly delivered by Messrs. Young and Co. and Mr. Turner respectively, and everything betokens a punctual completion of the building.

On the Waterford and Limerick line, the station at Clonmel is nearly finished. The walls are all of dressed ashlar, having chiselled lime-stone dressings. The building comprehends the ordinary booking and waiting rooms, station-master's apartments, &c. The style is Gothic: Messrs. Doolin, contractors.

At Fiddown and Carrick stations, goods sheds are in progress of completion. The southern portion of the Fiddown bridge is finished. The opis for the swivel of the northern portion will be 40 feet wide. In consequence of the heavy rains, the works have been delayed: Mr. Hemans, engineer-in-chief.

House building and shop architecture in Victoria and Corporation streets are improving. Three large storehouses are in progress, one on the fire-proof principle, with rolled iron joists, concrete floors, &c. The joists are being manufactured at the Belfast Iron Foundry: Mr. Jackson, proprietor and architect. We hear a new terrace is to be built at Holywood, a bathing village near Belfast: Mr. T. Turner, architect. The trade is generally brisk, notwithstanding the season of the year, and various improvements are in contemplation. We noticed lately several public works in progress and projected. A large building is in course of erection in Wellington-place, intended for a warehouse. The front is of red brick, with sand-stone dressings. The first story is all of chiselled stone: Mr. Lanyon, architect; Mr. Fulton, contractor; Messrs. Henry, proprietors.

Galway is becoming the field for building speculations; the outskirts are extending themselves, and improving. In the locality of Salt-hill, works are in progress, and further improvements are talked of. The R. C. church to be erected in Middle-street, from the designs of Mr. Lyons, is likely to commence in spring, as the subscription-list is progressing.

Serious obstacles have arisen in sinking for the foundations of the channel pier of the Boyne viaduct, and notwithstanding the many attempts made to secure a good footing, no progress has been made. Borings to a depth of 70 or 80 feet have been tried ineffectually, not the least appearance of rock being presented. Many

modes of evading the contingency have been suggested, but we have reason to believe that all are abandoned, and that the contractor will (as a last resource) make a new dam. In case this fails, it is not improbable that a tube, similar to the Britannia, may be substituted, although, no doubt, at this stage of the proceedings, the appearance of the structure would be much interfered with. All other parts of the work are in a very forward state. Most of the piers are completed, four of the arches far advanced, and the entire length of the masonry is covered with machinery, consisting of cranes, &c.

A church is being erected in the parish of Kilbryan, within four miles of Boyle, county Roscommon. The drawings for this have been furnished by the architect to the Ecclesiastical Commissioners.

A baptismal font is to be fixed in the parish church of Kilcrohan, partly purchased by the Ecclesiastical Board and partly by the vicar, aided by his parishioners. There are many wanting through the country.

The first portion of the iron-work of the gate entrance to the Limerick new docks (weighing 14 tons) has been lowered to a depth of 35 feet with perfect safety and in mechanical style, under the direction of Mr. P. Toomey, of the firm of Messrs. Mallett, engineers, Dublin.

Mr. Dargan, the Irish contractor, has been offered knighthood by his Excellency the Earl of Eglinton, but has declined the honour.

A monument to Banim is projected at Kilkenny: the Marquis of Ormonde is one of the committee.

It is stated by a Newry journal, that the value of house property in and about Downpatrick has been considerably enhanced during the last six months, and that the town is greatly improving.

Additional martello-towers are in the course of construction on the south side of Dublin Bay, close to the county Wicklow.

The railway between Derry and Newtownlimavady has been opened for passenger as well as goods traffic. The Government inspector, Mr. Wynne, reported favourably of the entire works constructed.

The terminus of the Ennis and Limerick line will be at the Limerick side of the Shannon, near the present terminus of the Waterford and Limerick railway. A bridge is proposed to be thrown across at Corbally, near the Salmon Weir.

DRAINAGE OF RUGBY.

BRICKS *v.* PIPES.

INTERESTED, as every one connected with building must be, with the various communications and discussions which have lately appeared in the columns of your paper respecting the relative value of the two systems of drainage, "bricks" and "pipes," I have watched with interest the success of the 'pipe" system as laid down in Rugby, and must say that, although greatly prejudiced against the same before its introduction here, its applicability has proved itself *in the highest degree satisfactory*.

It is now more than twelve months since the main sewers were completed, and since that time more than two-thirds of the inhabitants have availed themselves of the opportunity afforded for cleansing their dwellings; and, to a stranger visiting the town, it is quite surprising to observe the completeness attending the sanitary improvements here; for in many of the humblest cottages may be found the most perfect salubrity and freedom from those unwholesome and unhealthy smells which are generally prevalent amongst the crowded dwellings of the lower classes of the towns of England.

Although the pipe system has been now in successful operation for more than twelve months, with a main of some seven or eight miles in length, independent of subsidiary drains, yet out of the whole, not one pipe has been found broken through any defect of the *system:* it is true that a portion of the main was found broken, where the pipe (2 feet diameter) was 23 feet below the surface; but on examination it was found that the cause thereof was the sinking of the brickwork of one of the shafts, made, at the time, for the purpose of driving a "heading," the pipes just immediately adjoining not having been protected against such a direct pressure.

I give you my name. H.

BUILDERS' COMMISSION TO HOUSE AGENTS.

MARYLEBONE COUNTY COURT.

BUTLER *v.* BRYDEN.—The plaintiff, a builder, of Carlisle-street, sought to recover 16*l.* 4s. 10d. of the defendant, a house-agent, of Waterloo-place. The claim was admitted, less 11*l.* 12s. 4d.; and the balance had been paid into court in satisfaction.

In support of the set-off, the defendant stated that it was customary with him to deduct from tradesmen's accounts a commission, ranging from 5 to 10 per cent. The plaintiff had done work to the amount he sued for at various houses, of which he (defendant) was the house-agent, and his commission upon the bill was 1*l.* 12s. 4d.: this was one item in his set-off. The other item was 10*l.* being 5 per cent. commission upon an assumed 200*l.* job the plaintiff had got through his (witness's) introduction. In cross-examination by Mr. Samuel Bicknell, the defendant said, upon his clerk informing him that Butler was at work at Mr. Filer's house, he sent for him to his office, and asked why he had not let him know he was at work at Mr. Filer's, and that he should expect 10 per cent. upon the job. Mr. Butler demurred; and it was then agreed between them that the plaintiff was to allow 5 per cent. upon the work done. Had made no application to Mr. Filer to ascertain the amount or nature of Butler's contract. Cannot say if the plaintiff has received two hundred pence or two hundred pounds for the work he has done at Filer's house. Introduced Butler to Mr. Filer by mentioning his name. Mr. Filer called at his office about purchasing a house, and remarked upon the excellent work in his office, and said he wanted some repairs done, and he gave him Butler's address: out of this the introduction arose.

Mr. Burton, clerk to defendant, was called to corroborate the agreement between the parties. In cross-examination, the witness admitted that he was not sure Mr. Butler heard the defendant's demand for commission upon Filer's job. That it was he (witness) who suggested to Butler to try and get Mr. Filer's contract. He met the plaintiff in the street, and told him Penny had put in for it. Mr. Butler had given him several sums of money in consideration of his getting the job.

Mr. S. Bicknell said, there was neither special nor general agreement proved. His client all along repudiated the idea of allowing another tradesman to share his legitimate profits; and to promise to allow 10 per cent. upon the amount of a contract, which might often not realize that profit, or might be 10 per cent. or more loss, was preposterous. In the course of his professional career, he never heard the like of Mr. Bryden's demand; for defendant, without knowing whether his client had received one penny for his work, or if he were a gainer or loser by it,—whether it was on contract, or if the contract amounted to 200 pence or 200*l.* came into court and claimed 5 per cent. upon an assumed job. With respect to the alleged introduction, it was all fudge: it was through no introduction of Bryden that Mr. Filer employed his client: it was the work in Mr. Bryden's office that recommended Butler, and not Bryden. All Bryden did was to oblige a customer with the name of the person who fitted up his office, and for which act of civility to a customer the defendant had the modesty to claim 10*l.* of Butler. He urged that, neither by law, custom, nor from the evidence adduced, was the defendant entitled to a commission.

Mr. Butler positively denied agreeing to allow the defendant a commission for work done for him, or procured at his recommendation. His contract with Mr. Filer amounted to 184*l.* only, and he did not believe he got the contract through Bryden; for Mr. Filer had informed him that Bryden had recommended Penny to the job.

In cross-examination by Mr. Finch, the plaintiff said, beside the contract for 184*l.* he had done extra work to the amount of 10*l.* He had only been paid 160*l.*

In answer to a question of the judge (Adolphus), Mr. Bryden said his commission would be for the actual work done, and not upon the contract. He did not expect a greater commission than that upon the sum the plaintiff had to receive.

The Judge said he thought, upon the specific statement of Mr. Bryden, that the plaintiff had entered into an agreement as stated by the defendant, and was entitled to a commission. As the plaintiff had only received 160*l.* he considered the defendant was only entitled to 5 per cent. on that sum. He also thought the defendant was entitled to a commission upon the sum the plaintiff sued for. This would turn the scale in favour of the plaintiff, and his judgment would be for the plaintiff for 2*l.* over and above the sum paid into court. Verdict for the plaintiff for 6*l.* 12s. 6d.

Mr. Bicknell, for the plaintiff, intimated his intention of carrying the case to another tribunal.

NON-PERFORMANCE OF CONTRACTS.

LIABILITY OF A CONTRACTOR FOR DAMAGES SUSTAINED THROUGH NON-PERFORMANCE OF A CONTRACT.

IN the Brentford County Court, recently, an action was brought by Mr. Hayes, a speculative builder, against William Adams, a working builder, to recover 10*l.* for compensation in damages for the injury sustained in consequence of the non-performance of an agreement for the building and finishing a cottage at Ealing, within the time and manner specified in an estimate of the defendant's.

Mr. Hayes said the defendant agreed to build and finish a cottage for 26*l.* After he had paid the defendant, he left his work unfinished, and what was done was performed in an unworkmanlike manner. The plastering fell down, and there were only three window-sills put in. The rental of the house, if properly finished, would have realized 45*l.* per annum; but in consequence of its being so badly built, he was glad to let it to a surveyor at 35*l.* per year. His actual loss he estimated at 10*l.* per year for sixty-six years; in round figures, 660*l.*

By Mr. G. Keene.—The defendant only stood still for materials once. He had only to order them when they were wanted.

Mr. Nye, a surveyor and builder, deposed to the work being badly executed; and other witnesses were called to speak to the same effect, one of whom being closely questioned by the judge as to the mysteries of compoing, caused some merriment by bluntly telling the legal functionary that he might be a very good judge of law, but he must tell him that he was a d—d bad judge of compo.

Mr. George Keene, solicitor, said he was fortunate enough to be a better builder than a lawyer, his father having been most extensively engaged in building pursuits; and from his knowledge, he had no hesitation in saying that any man who agreed to build, or any one who expected to have built, a house to realize 45*l.* a year for 26*l.* must be out of his senses. He considered the loss Mr. Hayes estimated he was at, a just retribution for his grinding contract, and that his now suing a poor man for damages sustained through an impossibility created by himself, deserved the censure of all fair-dealing builders. He could not deny that his client had entered into some sort of an agreement to erect this cottage *ornée* for 520 shillings; but there was some excuse for this ignorant man making such a silly bargain: it was his first contract on a large scale; but on the other hand, Mr. Hayes was well up to builders' prices, specifications, estimates, and designs, and knew as well as any man, that, to build this house in a workmanlike and substantial manner, two years of its rental would barely pay for the labour, much less the wages of one man for fifteen weeks. It was a snare and downright fraud upon labour to expect it. With respect to the damage sustained by the defendant not finishing the work in the time specified, he was prepared to prove that his client could not complete the contract in the time for want of materials to go on with.

Mr. Keene called the defendant, who did not seem to clearly understand what agreement he had entered into, or what he was to do to the cottage, except that "sartin dimensions was to be at a sartin height." He, however, swore that the reason he did not finish the cottage was for want of materials;—that he and his men stood still for several days before he was compelled to complete the contract. Two men employed on the work also deposed to standing still for materials, and added that alterations were made for the upset contract price. Thomas Adams further stated that the cause of the plastering blowing arose from their having to make the compo of lime and hair.

Mr. Keene here called the attention of the Court to the fact, that the plaintiff had subpœnaed a gentleman from London to give evidence, and was afraid to call him. Upon this, Mr. William Timewell stepped forth. He stated that he was a builder in an extensive way, and had been requested by Mr. Hayes to inspect the house in question. He could not conceive how any man could expect a house to be built in a workmanlike manner for the contract price named. The work was badly done; but as a builder he should not have expected it to be done better for the money.

By Mr. Sleape.—Can form no idea how the house was to be built. Is in the habit of building largely upon speculation. Maintains it is built in an unworkmanlike manner, but would qualify this by saying he thought it to be the duty of the employer to see that the employed were not working at ruinous prices,

and to act honestly towards their workmen; and by paying fair wages they would get good work and good workmen.

His Honour observed that it was much to be desired that all parties called in to speak to disputes of this nature would act in the impartial manner of Mr. Timewell. He regretted such was far from being the case, for, instead of arbitrators, they became advocates for the party who called them in. He thought Mr. Hayes was to blame himself in employing the defendant, and that it was a case which did not call for heavy damages. Still the plaintiff appeared to be entitled to something; for it was no answer of the defendant to say, "I did not complete my contract, because I made a bad bargain." It was defendant's own doing, and he must abide the issue. He should make an order for £4. Judgment for plaintiff, damages £4.

A PLEA FOR ARCHITECTS' CLERKS.

IN these days of progress, you will not be surprised to find one who thinks that the internal management of your own profession admits of improvement, inasmuch as a boon is as yet withheld, which would be productive of considerable benefit to a numerous class, on whose part I now address you. The class—architects' clerks; and the boon—a weekly half-holiday.

I shall not insist upon facts already well known—of operatives and merchants' clerks in manufacturing districts having obtained this favour from their employers, but shall endeavour to enlist the like sympathy in our behalf.

Clerks in architects' offices have, for the most part, received a regular professional education; and from this body the ranks of architects are perpetually recruited.

Although a social accident places them for a time in a subordinate position, they generally belong to the same grade in society as their employer, and, on this account, may, not unreasonably, look for liberal treatment at his hands. And in what more graceful way can employers evince their generosity than by giving up *some* portion of the week, now throughout its entire length devoted to their service?

Eight hours a day are usual in most offices. Let any architect consider how little leisure is left to his clerks. The reply may be—"I am myself obliged to work much longer." Granted: but, surely, it is at an architect's own option whether he works fewer or more hours in the day. He finds it pay better to work longer, and so he does it—and does it, probably, as an act of duty for the support of his family. Clerks, on the other hand, being young, unmarried men (for which of them ever ventured to marry), are still going through an educational course. The profitable employment of leisure is of even more importance to them, than to a man already established in practice. But what opportunities does the present allotment of time afford? With minds jaded and harassed, and bodies wearied, clerks (unless they have frames of iron) cannot study much in the evening: besides that, some little time must be given to the cultivation of the social and domestic affections. A few hours subtracted from one day in the week would materially tend to supply their need.

While all admit that works of art elevate the mind, correct the eye, and refine the taste, they will also freely acknowledge how great is the loss sustained by those who are practically excluded from the sphere of their influences. And on what class is it more important that these influences should be brought to bear than upon those who, under their employers' direction, are constantly engaged in carrying out designs intended to confer credit on their originators, and to stamp a character on the age in which they are produced. If architecture be, indeed, a noble art, it clearly demands minds and tastes educated to the highest possible point. Where shall its votaries strike a richer vein of ideas than in the glorious master-pieces of painting and sculpture stored in our national edifices?

P. P. C.

MUSEUM OF ORNAMENTAL ART, AT MARLBOROUGH HOUSE.—The members attending, &c. during the month of December, were as follow:—13,811 persons on the public days and admitted free (the number in the Christmas week being 11,119); 711 persons on the students' days, and admitted as students on the payment of 6d. each.

Notices of Books.

Saxon Obsequies; illustrated by Ornaments and Weapons, discovered by the Hon. R. C. NEVILLE, *Wilbraham, Cambridgeshire.* London: John Murray. 1852.

IN the autumn of 1851, the Hon. R. C. Neville trenched and examined a field at Little Wilbraham, about six miles south of Cambridge, which was found to be a Saxon cemetery, and yielded a singularly large number of fibulæ, urns, rings, and beads. Of the first, in the area of 2 roods 17 poles opened, no fewer than 125 were found, together with 1,176 beads, besides buckles, shields, spears, tweezers, knives, and ornaments. The fibulæ were found invariably on the breast of the bodies, and all the appendages occupied their natural and proper places. Mr. Neville has now published representations of all the principal things found, drawn and lithographed by Mr. Samuel Stanesby, and printed in colours, on forty sheets, by Johnson and Bessent. They serve to convey with great accuracy the appearance of the originals, and are very valuable materials for comparison and comment. The greater number of the fibulæ, or brooches, are cruciform, and, with a general resemblance, they all display interesting special differences.

The beads exhibit an incredible variety of form, pattern, and material. The majority are said to be composed of amber, jet, spar, crystal, pottery, and coloured glass. The conjunction of more than 100 urns containing bones, and perfect skeletons in graves, with evidence that the interments were of the same date, shows the co-existence for a time of these two methods of interment,—the time when urn-burial was falling into disuse and becoming gradually obsolete.

Mr. Neville is a most diligent and at the same time most successful explorer. Quite recently he has brought to light considerable remains of a villa near the Bartlow tumuli in Essex, and numerous ornaments and other traces of the Roman occupants of that district. For the volume now before us he deserves the special thanks of all investigators of the arts, manners, and customs of the early inhabitants of the country.

The Seven Wonders of the World, and their Associations. With illustrations. Routledge and Co. Farringdon-street. 1853.

M. J. H. Hall has here gathered together all the more interesting information in regard to the Pyramids, the temple, walls, and hanging gardens of Babylon, the Chryselephantine statue of Jupiter Olympus, the temple of Diana at Ephesus, the Mausoleum at Halicarnassus, the Pharos at Alexandria, and the Colossus of Rhodes,—or, in other words, the seven ancient "Wonders of the World,"—into a very pleasant and readable little volume.

Miscellanea.

LOCOMOTIVE FOR PLANK OR COMMON ROADS.—Mr. William D. Arneet, of Iowa (U.S.), has made certain improvements in the locomotive, by which it is said to be adapted to running on plank or macadamised roads. This locomotive in form resembles those in common use. It has a steering apparatus, by which the pilot can, by the turning of a windlass, give any desired direction to the locomotive in the shortest possible time. It is said to be adaptable to agricultural purposes, by simply connecting therewith a line of ploughs. Steering such locomotives by a windlass, with a pointer ranging along a marked scale of degrees corresponding with the deviation of the fore-wheels, was one of the oldest and first methods adopted and used in common-road locomotives or steam-carriages, before any railway locomotive ever ran.

MORTALITY FROM DEFECTIVE DRAINAGE.—On Thursday, in last week, an investigation took place before the coroner for East Middlesex, at Bethnal-green, respecting the death of a child, the daughter of a shoemaker, who, with two other children, have perished during the last three weeks in one house from malignant fever, and a fourth was not expected to live many hours, arising through the defective drainage and filthy condition of the wretched place where the family were residing. The jury returned a verdict accordingly.

THE NIAGARA SUSPENSION BRIDGE.—Workmen are busily engaged in bringing this bridge to completion. We have already given some of its details, but we may here quote the *Lockport* (U.S.) *Journal*, which says:—"Imagine a span of 800 feet in length, forming a straight hollow beam 20 feet wide and about 18 feet deep, with top, bottom, and sides. There will be an upper floor to support the railroad and cars, 20 feet wide between the railings, and suspended by two wire cables, assisted by stays. The lower floor, 19 feet wide and 15 feet high in the clear, is connected to the upper floor by vertical tresses. The cohesion of good iron wire, when properly united into cables or ropes, is found to be from 90,000 to 130,000 lbs. per square inch, according to quality. The limestone used in constructing the towers will bear a pressure of 500 tons upon every square foot. The towers are 60 feet high, 15 feet square at the base, and 8 feet at the top. When this bridge is covered with a train of cars the whole length, it will sustain a pressure of not less than 405 tons. The speed is supposed to add 15 per cent. to the pressure, equal to 61 tons. The weight of superstructure added, estimated at 782 tons, makes the total aggregate weight sustained 1,273 tons. Assuming 2,000 tons as the greatest tension to which the cables can be subjected, it is considered safe to allow five times the regular strength, and providing for a weight of 10,000 tons. For this 15,000 miles of wire are required. The number of wires in one cable is 3,000; the diameter of cable, about 9¼ inches."

DAMAGE TO PREMISES: DISPUTED LIABILITY.—In the County Court at Bradford, on Tuesday in last week, before Mr. J. Hamerton, deputy-judge, an action, Snow *v.* Withers, was tried for the recovery of 33*l.* 10*s.* as damage, sustained by plaintiff, to certain premises, in consequence of an explosion of gas therein, while in occupancy of defendant as his tenant. The premises had been recently occupied by a person named Neil, and on his effects being sold by his assignees, a pendant had been torn down from a ceiling by Mr. T. Ingham, who left the hole unplugged. Defendant made use of the gas apparatus, which he caused to be restored, although the workmen employed unfortunately overlooked the unplugged place from which the pendant had been torn. The fact, according to plaintiff, might have been perceived by any person of ordinary perception, inasmuch as a mark was left of the pendant having been there. In defence, it was denied that any mark was left. Every room had been carefully examined, and plaintiff was himself to blame, not only for the destruction of his own property, but the damage sustained by defendant, —whose loss in engravings, &c. was estimated at 60*l.* or 70*l.*,—because plaintiff was aware of the pendant having been removed, and did not communicate the fact to defendant on letting the premises. The judge gave a verdict for plaintiff, saying that it did not appear to him that plaintiff had done anything to conceal the danger, or that he had neglected to disclose any fact which would have been the means of preventing the accident; but it appeared defendant had failed in his duty in not taking proper precaution to prevent explosion, as any person of competent skill must have seen that a pendant had been in the room before.

RAILWAY MATTERS.—A great fall of cliff took place on the South Devon line, between Dawlish and Teignmouth, on 29th ult. On the formation of the line, it was found necessary to cut a tunnel through the rocks known as the "Parson and Clerk." A portion of Langstone cliff was thus cut off, and its base was undermined by the action of the recent heavy rains.——The extensive works at the terminus of the Great Western, at Paddington, are rapidly approaching completion. The company have erected an immense extent of premises in the shape of arrival and departure sheds. The new works comprise an extensive goods warehouse, and the accommodation for the public will, it is said, be ample.——One of the tunnels on the Pennsylvania railway, now constructing, is to be 3,570 feet in length. Its area, at the widest space within the lines of the masonry, will be about 24 feet, and the spring of the arch will begin 16 feet from the crown of the arch. The arch itself of the tunnel will be rather of an oval form. The greater part of the arched excavation will be inlaid with masonry, more than half of which will be composed of sandstone laid in hydraulic cement, and the remainder of hard-burnt brick. This masonry will be 22 inches thick. The tunnel passes the Alleghany mountain in Sugar-rum Gap. About 400 men are employed upon it.

THE GOLDSMITH AND JEWELLERS' ANNUITY INSTITUTION.—The committee propose to erect an asylum for sixteen persons. The site of land is situated on the west side of Manor-road, South Hackney, about 140 feet frontage. Mr. W. P. Griffith is the architect appointed. The accommodation will be on the same principle as that afforded to the poor Brethren in the Charterhouse.

CITY OF LONDON LIBRARY.—It is not very frequently that the citizens of London afford an opportunity to a literary paper for a word of praise about what they have done. It is with real pleasure, therefore, that we announce a considerate and proper act now on the eve of accomplishment by the citizens of London, through the good sense of one of their committees. Many of our readers are doubtless aware that this great city possesses a most curious library relating to London matters,—that it is annually adding to its stores,—and that it is in possession of a fund fully adequate to the acquisition of fresh curiosities. But how few have ever consulted its shelves,—or, indeed, been within its walls? This library, so little used for the purposes of research by literary men, has lately attracted the attention of the present chairman of the committee (Mr. William Williams); and the result has been, that cards of admission have been sent—or rather, are now on the eve of being sent—to every author of distinction whose habits of research are at all likely to render the collection of use to him. A new printed catalogue of the library will, as soon as completed (and it is nearly ready), accompany every ticket,—so that, an author may consult the catalogue in his own room—and on finding what he wants, wait on the Librarian with his ticket, and see at once what he wishes to see. This good example should be copied by the authorities at Oxford and at Cambridge, at Lambeth Palace, and at Sion College.—*Athenæum.*

HERMOPOLIS.—A correspondent of the *Literary Gazette*, writing from Athens, says,—"Many of the most important cities of antiquity, as well as of modern times, owe their existence to wealth and commerce. Syra, or rather Hermopolis, on the island of that name, is one of them. It has often been represented as a naked rock, with a town on one of its hills; great, therefore, was my surprise, on finding not only a place most picturesquely situated, but in its proximity extensive gardens, fields, and vineyards. From the port, filled with vessels of all sizes, the visitor beholds, to the left, the old town on a steep hill, and the new town, called Hermopolis, having a population of more than 20,000, extending itself like an amphitheatre along the declivity, at the foot of the same hill and two or three others. Several considerable edifices are discerned, not only churches and other public institutions, but also private dwellings, scattered here and there, and these being altogether or in part of white marble and plaster, they form a pleasing effect against the brownish hills. None of the streets have names, but they are paved, and consequently free from the dust so disagreeable in Athens. In these streets the olfactory organs are often affected in anything but a pleasant manner. It may cause some surprise that in so modern a town not a better regulation has taken place by the construction of houses and the direction of streets. A few improvements are being made in this respect, but it would be too expensive to do so on a large scale. The principal commercial street makes some exception, it having a satisfactory width, is level, tolerably straight, and paved with flag stones like the others. It has a singular appearance through a net of cordage, by means of which awnings are drawn before the houses as a protection for merchandise from the rays of the sun, affording also agreeable shade to the foot passengers. Near to this street is a large irregular square, partly planted with trees: in its centre is a triumphal arch, constantly adorned by green branches: some houses are scattered about, among which are some coffee houses.

THE NEW ELECTRIC WIRES.—Men connected with the Electric Telegraph Company's works have been laying down the new electric wires through Westminster, the Strand, and the curb-way in Fleet-street, Ludgate-hill, St. Paul's Churchyard, and Cheapside, to the General Post-office, St. Martin's-le-Grand. The new wires are twenty-five in number, forming the appearance of an open cable, and are not only galvanised over, but coated in gutta percha, and covered over with saturated tar tape. These wires pass through the iron pipes or tubes which were laid down a few months ago, so that they are protected from any injury.

PROGRESS OF THE NEW WORLD.—From the reports of the Census and Land Departments of the Government of the United States, just published, the following information is extracted by the *Liverpool Albion*. The population of the United States has increased 337 per cent. during the last fifty years, and is now increasing at the rate of about 3 per cent. per annum. Out of this population, consisting of 24,000,000 of people, only 2,250,000, or less than 10 per cent. were born in Europe. From 1840 to 1850 the population was augmented from 17,000,000 to 23,000,000, the increase being 6,000,000 in ten years. At the rate of annual mortality, the total deaths during the same period were from 2,500,000 to 3,000,000, being nearly equal to half only of the residual increase by births and immigration. The real and personal estates in the United States and territories are returned as of the actual value of 7,133,369,735 dols. The churches or edifices for public worship in the States number 36,011, of which the Methodists own one-third, or 12,467; the Baptists nearly one-fourth, or 8,791; the Presbyterian and related churches, 8,112. The Methodist accommodate 4,209,333; the Baptist, 3,130,878; and the Presbyterian 3,705,211. The Roman Catholics have but 1,112 churches, accommodating 620,950; Episcopalians, 1,422, accommodating 625,213. The farm-lands of the United States are set down in the census as amounting to 113,457,622 acres of improved, and 184,621,848 of unimproved; total, 303,078,970 acres; worth in the average 10 dols. per acre.

ELECTRO-TELEGRAPHIC PROGRESS.—The telegraph marches apace over continental Europe; and so complete is now the magic network of intellectual nerves, that for all purposes of communication it may be said there is no longer any British Channel. From the mountain cities of Transylvania to the marshes of Pomerania there is scarcely a town of any literary or commercial importance not connected by the metallic pulses terminating at Charing-cross. These lines cross over rivers and traverse vast mountain regions—as, for example, the Trieste wire along the alpine roads of Illyria—to touch the sea. The Baltic, the Black Sea, the Bay of Biscay, are all now brought into immediate contact with each other. A word may be shot by lightning from the Gulf of Venice to the Irish Sea. Holland—until now almost outside the European system, having neither railway nor telegraphic communication with surrounding countries—has just been brought, as it were, within the general organization, and Amsterdam, Haarlem, the Hague, Leyden, Rotterdam, Dordrecht, and Breda, are now linked in the great chain of European confraternity.——The contractor for the works of the Electric Telegraph Company of Ireland, Mr. Gilpin, states that these works are completed in Scotland, except a few miles in New Galloway. The company intend immediately to open the line between Dumfries and Newton Stewart.——An agreement has been entered into between the Electric Telegraph Company and the Scottish Central Railway Company for the continuance of the telegraph from Edinburgh to Perth; and efforts are being made at Dundee to have it also extended thither.

CONVERSION OF ROTARY INTO RECTILINEAR MOTION.—Mr. A. Carson, of New York, has patented a plan for converting any rotary motion into a reciprocating rectilinear movement. In place of the cross head attached to the piston-rod, slotted or forked rods are let into grooves in the periphery of the pulley, and connected thereto by three chains, two of which connect with each rod on opposite sides, and pass in one direction round the pulley; while the third connects each rod within the slot or fork, and passes in the opposite direction round the pulley.

CHRONOLOGICAL OR ARITHMETICAL COINCIDENCES.—A Frenchman lately communicated the following rather curious calculations to an English friend:—

Fall of Robespierre	1794
	1
	7
	9
	4
Fall of Napoleon	1815
	1
	8
	1
	5
Fall of Charles X.	1830
	1
	8
	3
	0
Fall of Duke of *Orleans**	1842
	1
	8
	4
	2
Fall of ——— ?	1857

These coincidences remind us of others lately going the rounds of the newspaper press, to the effect that Nelson on the day of his greatest victory and death had attained the age of forty-seven years; that Bonaparte and Wellington were each in their forty-seventh year at the great and last decisive battle of Waterloo; and that in the forty-seventh year from the death of Nelson, the last of this illustrious trio, Wellington, passed into eternity.

* It is here considered that the death of the Duke of Orleans by a fall sealed the fate of the Orleans dynasty even before the flight of Louis Philippe; because the Duke was so much beloved, that had he been alive he would have been accepted as king on the abdication of Louis Philippe.

IMPORTANCE OF LIBRARIES FOR THE WORKING CLASSES.—Libraries for the learned are of remote antiquity. It is the glory of our times to have provided libraries for working men, for clerks, for apprentices, for Sunday-school children. The intellectual results of this provision are its least recommendation: it powerfully subserves sound morals and true religion. In a country where the means of living are within easy reach of all who are industrious and frugal, there will be time on hand for use or for abuse. There is nothing to meet this case and turn it to advantage like a taste for reading. Next to the institutions of religion, and the schools of various grades and adaptations, a well-selected and well-regulated library is the greatest public blessing. Here, where the issues of the press compete in number with the leaves upon the trees, a reading-room becomes its natural appendage. Who can appreciate the hours that may be thus reclaimed from the accursed haunts of drunkenness and dissipation? Who can begin to measure the blessing to society in young men, won from the fatal fascinations which beset them, and guided in the path of virtue, honour, and religion? With what a cheerful light the hearth of home may be invested, as the instructive or amusing volume holds its happy circle spell-bound by the beloved voice that gives it utterance. And how the children's cheeks will glow, and their eyes glisten, as their interest increases in the adventurous traveller, or in the struggling patriot! You have done well, my friends, in the establishment of a library and reading room; you will do well to draw to it the interest of working men especially: you will do well to secure for it the attention of the young. The corners of your streets will be more quiet for it: it will be seen in the increasing comfort and good order of the humble homes that lie along your paths: it will be felt in all the pulses of your social life, in peacefulness, and tranquilness, and harmony, and happiness.—*Bishop Doane, of New Jersey.*

BLOWING UP A LOFTY CHIMNEY.—Near Warrington Junction, about twenty miles from Liverpool, was a lofty chimney, connected with Messrs. Muspratt's chemical works. It was 406 feet high; 46 feet diameter at the base; 17 feet diameter at the summit; contained 3,500,000 bricks, 3,500 tons in weight; and cost 7,000*l.* erecting. The works have not been in operation for about eight months, owing to arrangements being made to remove them to another locality. There being, therefore, no further use for the chimney, it was blown up the other day, under the superintendence of Mr. Stephen Court, architect of the St. Helen's Canal and Railway Company. A number of holes were delved round the base; and fourteen charges of gunpowder were inserted. At half-past two o'clock the train was fired. Nine charges exploded without any apparent damage being done to the stability of the shaft; but the report of the tenth had no sooner been heard than the chimney was rent from top to bottom, and the huge fabric fell, crumbling away gradually from the base upwards. The whole of the column fell nearly within the circumference of its own base. A dense cloud of lime-dust hid the ruins for a few seconds; but when it cleared away, the 3,500,000 bricks were perceived in the shape of a huge mound.

NORTHAMPTON BUILDERS.—The builders of Northampton have represented to the Improvement Commissioners that the regulation requiring that the party wall between new houses should be carried 15 inches above the roof is very objectionable. Nearly all the cottages, with such walls, they said, were suffering from the wet finding its way in, and in cases where the junction of the slate with the wall was secure, the bricks in this part were generally of such a porous nature that the wet was absorbed by them, and the walls became damp. The great advantage of the party wall coming through the roof, the absolute necessity for this arrangement, indeed, being evident, the attention of the builders would be better given to effecting it in a sound and efficient manner.

PURIFICATION OF GAS.—You inserted a paragraph in your paper of the 1st inst. stating that a new mode of purifying gas by peat charcoal, &c. had been discovered in France, and that the refuse consisted in a valuable manure. The invention is an English one, Mr. W. Chisholm, chemist, having obtained letters patent for this discovery, and his process is about being carried out in Paris. Gas purified upon Mr. Chisholm's principle surpasses in purity and illuminating power anything hitherto obtained; and I understand the residuum yields a manure equal to any foreign guano.—A GAS ENGINEER.

SEWERS.—The following is a list of tenders for the construction of sewers down the Pownall-road, Dalston:—

Thompson	£993	0	0
Hocken (accepted)	825	0	0
Scott and Rudkin	702	5	0

The sewer is 3 feet 9 inches by 2 feet 6 inches, half brick in cement, and 1,680 feet long.

IMPROVED HYDRAULIC SYPHON.—The principle of the new hydraulic syphon of Mr. F. C. Mouatis, according to the *Mining Journal*, is, that "the water is not lifted in one upright pipe, but raised by a succession of tubes (say 30 feet each), with an accompanying cistern and valves, on the principle of the force-pump. One continuous piston-rod runs through the whole, passing through stuffing-boxes, and carrying a piston in each tube, and a continuous stream is thus produced on the application of motive power. The valves are of peculiar construction, free from friction, and the cylinder being only of the same diameter as the tubes, instead of twice the diameter, as at present generally in use, there is an avoidance of a cost of power from this source alone four times as great on the part of the atmosphere as that of the piston."

DEATH OF MR. ROBERT FORREST, SCULPTOR.—The death of this gentleman took place on Wednesday, in last week. Mr. Forrest, who was in his 63rd year, was a native of Carluke, Lanarkshire. He was a self-taught artist, and was bred as a stone-mason in the quarries of Clydesdale. His first public work was the statue of the "Wallace Wight," which occupies a niche in the steeple of Lanark parish church, and was erected in 1817. He was subsequently employed to cut the colossal figure of the first Viscount Melville, which surmounts the pillar in the centre of St. Andrew's-square, at Edinburgh; and he was also the sculptor of the statue of John Knox, in the Necropolis of Glasgow. In 1832, Mr. Forrest opened a public exhibition of statuary on the Calton-hill, Edinburgh, with four equestrian statue, under the patronage of the Royal Association of Contributors to the National Monument there. In progress of time, the gallery was extended to about thirty groups, all executed by the sculptor himself, and the statuary took its place as one of the popular exhibitions in the Scottish metropolis.

BUILDING SOCIETIES AND DEPRECIATED VALUE OF MONEY.—The influx of gold and the glut of money in the market appear to be deranging the principles on which many of the building societies have been based. They are no longer able to obtain that per-centage for money lent on which their calculations were made.

CENTRALIZATION OF THE METROPOLITAN RAILWAYS.—A correspondent has forwarded to us a proposal for the centralization of the southern as well as the northern railways in Farringdon-street. The southern lines, he remarks, would all unite at the Waterloo station by the long-projected west-end extension of the Bricklayers' Arms branch; and thence they might run by one common trunk to Farringdon-street; Blackfriars-bridge being rebuilt double, to serve for the trains as well as for the ordinary traffic. Farringdon-street he regards as a singularly appropriate spot for a central station.

LIVERPOOL WELLINGTON MEMORIAL.—The sum raised towards the Liverpool Wellington Monument amounts to 5,250*l*.

MEETINGS.—Institute of Architects: Monday, 10th, a paper, by Professor Donaldson, "On a certain Class of Gallo-Byzantine Churches in and near Perigueux."—Tuesday, 11th: Institution of Civil Engineers; Syro-Egyptian.—Wednesday, 12th: British Archæological Association.—Thursday, 13th: Professor Cockerell's Second Lecture at Royal Academy;* the Royal Society; and the Society of Antiquaries.—Friday, 14th: Architectural Association; paper "On Architectural Botany."

TENDERS

For the extension of main arrival shed at the Waterloo Terminus of the South-Western Railway. Quantities supplied. Mr. W. Tite, architect.

Pollock and Sellon	£6,542
Grimsdell	6,373
Lee	6,145
Lawrence and Sons	5,642
Nicholson and Son	5,412
Pauling	5,240
Lucas, Brothers	5,100
Faithful	4,990
Jay	4,484

TO CORRESPONDENTS.

NOTICE TO SUBSCRIBERS.—A title-page in colours for the last volume may be obtained *gratis* by those who prefer it to that which accompanied the index in the closing number, on personal application at the office. Covers for the volume may be obtained at the office, price 2s. 6d. or the publisher will bind it for 3s. 6d. The complete volume may be obtained, price 21s.

"W. C." (the consideration of his letter would lead us out of our province). "T. F." "J. N. B." "G. M." (the member for Andover is not knighted. Sir W. Cubitt is an engineer). "Mr. G." (at what rate was it bought?). "W. A." "E. M. T." (the pans referred to are now common enough, and do not need a great pressure of water). "J. I. W." "J. M." "J. A. P." "S. S." (thanks). "F. P." "A Subscriber" (the valve will be found useful). "R R." "a nice state of things," truly). "H. T. R." "J. D. W." "A. N." "J. J." "S. H." "Z." shall appear). "P. P. C." (ditto). "E. L. G." (ditto). "H. D." "Parishioner." "Five Cents." "Miss S."

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

* A report of Mr. Cockerell's first Lecture is in type.

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January 5, 1853. J. YORK, Clerk to the Commissioners.

WANTED, a lot of OLD ROOFING, and other rough Timber, Lop and Top of Trees, to be delivered by boat, per Regent's Canal, within 5 miles of London.—Address, H. H. at the Office of "The Builder," 1, York-street, Covent Garden, stating price, quantity, &c.

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WANTED, during the months of next June, July, August, and September, in equal proportions per month, 1,500,000 of GREY STOCKS, of the best description, delivered alongside any wharf in the rivers Thames or Lee, or to the Stratford Station of the Eastern Counties Railway; or would treat with any party for a field near the metropolis, canal, or river; a field already in work would be preferred.—Address, stating full particulars, to A. B. Mr. STURCH'S, Post-office, Newington-butts.

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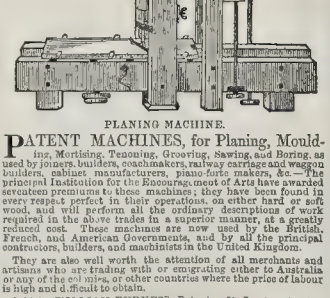
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H H H	for architectural use.	F	for general use.
H H	for engineering.	B	black for shading.
H	for sketching.	B B	ditto ditto.
H B	hard and black for drawing.	B B B	ditto ditto.
		B B B B	ditto ditto.
M	medium.		

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Sold by WILLIAM FURNESS, Patentee, 20, Lawton-street, Liverpool.

The Builder.

SATURDAY, JANUARY 15, 1853.

OUR last number, from various causes, has brought upon us a larger number of assenting and dissenting letters than we have received for some time,—a perfect cloud of "Constant Readers," "Old Admirers," and "Subscribers from the First." *En passant* we invite those who address us to adopt more distinctive titles than these, and to write so that what is written can be read. Some are jocose, some pathetic, some applaud, and others abuse: put together they would form a "Complete Letter Writer." There is scarcely one article in the number that has not brought a comment. Judge Gale's Law for Architects; the Adornment of St. Paul's; the Way our National Armoury in the Tower of London is managed; the State of the Burial-grounds; Pipe Sewers; the Half-holiday for Architects' Clerks; and the Effects of the late Storm, have put our readers' pens into active use. The majority of them, however, as it happens,—containing simply opinions given *anonymously*,—go for nothing.

Amongst those of another class, is one from the Rev. W. P. Babington, of St. Martin's Chapel, Camden Town, concerning the burial-ground of that parish. The rev. gentleman says,—

"Your paper of Saturday last contains an article in which allusion is made to the 'disgraceful scenes' witnessed in the 'already closely-packed graveyards of St. Pancras and St. Martin-in-the-Fields.' As chaplain to the burial-ground belonging to the latter parish, I beg to point out an obvious error into which the writer has fallen, and which, if not corrected, may be injurious to the interests of those to whom no blame attaches.

It is quite clear, from the particular mention of the adjacent buildings, that there was no intention of referring to our ground, situate as it is in Pratt Street, Camden Town, and not in the vicinity of St. Pancras Poorhouse. It is certainly not overcrowded, and I am most careful that all burials should be conducted in an orderly and becoming manner. I therefore trust that you will give this letter a place in your next number."

There is one also from the churchwarden of St. Martin's, Mr. George Countze, to the same effect, in the course of which the writer says,—

"As the article is likely to be very prejudicial to the interest of the authorities of St. Martin's parish, I trust you will arrest as speedily as possible the evil consequences which may ensue from the error, by stating the fact, that St. Martin's cemetery is not, at the present time, more than about one-third occupied, and is situated in Pratt Street, Camden Town. A large sum has been expended within a few years in planting it with trees and shrubs, which render it an agreeable ground as a place of sepulture. And every desire is manifested by the respected resident chaplain and sexton, aided by the police, to preserve as much as possible order and decorum when interments of Irish poor take place, which does not happen more frequently than one in twelve months. And I believe I can safely say, that scenes such as described in the article referred to, have not occurred, recently, at all events, in the St. Martin's-in-the-Fields cemetery, at Camden Town."

These gentlemen are correct in supposing, as the context must make obvious to all, that "St. Martin's" was written by a slip of the pen. Instead of the graveyards of "St. Pancras and St. Martin's-in-the-Fields," it should have been "of St. Pancras and *St. Giles's*-in-the-Fields," which adjoin. We cannot, however, exactly participate in the feeling of satisfaction with which they regard the proceedings in the grave-yard of St. Martin's, and will take an early opportunity to tell them why, when, too, we will make more clear the abominations of St. Pancras and St. Giles's. The Press has been lulled asleep by the insufficient Act recently passed: even Mr. Walker holds his peace; and yet in various parts of the metropolis practices fraught with deadly evils are still pursued. Holes are still filled with coffin upon coffin up to within a short depth from the surface,—a fearful fever-still; and little or nothing is being done anywhere towards effecting a sufficient change in the system. Even at Kensington, where, as we said, they were the first to move under the new Act, nothing has been achieved. They were in treaty for a tract of land belonging to Hammersmith, but the negociation has been brought to an end, and we do not hear that they have yet opened another. The health reports show conclusively every week the fatal effects of graveyards, want of pure air, and prevalence of defective drainage; but the lethargic public are content to "run the chance," and leave things as they are.

The letters as to St. Paul's only repeat in other shapes the suggestions already made in our pages. We may state with tolerable certainty that the dean and chapter have *determined* on executing certain adornments in the cathedral. What these may be we are not informed. We venture to suggest to the authorities that the public may justly expect to know what is intended to be done in St. Paul's *before* it is carried into execution. The dean, we have reason to believe, desires only to do what will be creditable and satisfactory to the nation. Mr. Cockerell, we may mention, has ceased to be the Surveyor to the Cathedral: Mr. Penrose holds the appointment. Should the result of the works there be unsatisfactory, will the architect be liable to an action for damages? Judge Gale would say yes.

"I cordially thank you," writes one to us, "for the manner in which you treated Mr. Judge Gale's decision in the case reported last week. If such Lynch law is to pass current as justice you may truly add that a profession already suffering from want of public support now is to be quietly extinguished. The present system of house building is to cut and contrive a plan which shall contain the greatest possible accommodation, and consume the smallest quantity of materials and the least labour, and then to apply to builders notorious for their cutting prices: among such, competition secures a price that pleases the client and meets his views, but the poor architect's troubles then begin: he has alternately to coax and bully to get the works complete, to constantly hear complaints for no neglect of his own, to write letters, dance attendances, and must often shut his eyes to the fact that the work is being done in a different manner to what is described in the specification; and for all this trouble, in the Southampton case on a less outlay than 500*l.* to receive 25*l.* If the time consumed by the architect were estimated by the lowest clerk's wages, the sum would not pay for it. Of course it will be urged that a respectable man would never allow himself to be exposed to insult and annoyance; but, Mr. Editor, the efforts of architects to establish a connection is a struggle that few achieve unless born with influential friends: without such support the very errand-boy has no greater difficulty in rising to become a shopkeeper."

We shall have to return to this subject; as we shall, too, to that of architectural education.

The appeal in favour of a half-holiday for architects' clerks is of course seconded by others in the same position; though some of them scarcely like the tone of the letter, and desire to put the claim on higher ground. None would aid more gladly than ourselves in obtaining for those who are to be hereafter the architects of England time for visiting collections and galleries, opportunities for improvement and healthful recreation. But this resolves itself after all into a question of *salary*.

In connection with the damage done by the recent storm of wind we received some statements as to the injury done to the *Crystal Palace at Sydenham*, which led us to visit the building. We found the damage very much exaggerated, but have, nevertheless, thought it worth while to place before our readers two views, illustrating the most remarkable features of the accident.* The first gives a general view of the portion of the structure most injured, and represents the clearing away of the *débris*. The second illustrates in a remarkable manner the extreme force of the gale. This immense structure, as our readers are doubtless aware, stands on the side of a hill, over which the wind rushed in a perfect hurricane, and with a violence so great, according to the statement made to us, as to carry the column represented in our second illustration off the adjoining brick-work, and several feet from it, in a position nearly vertical. The weight of the column is between 9 and 10 cwt. The immediate cause of the accident, so far as we can learn, was one of the scaffoldings erected for a circular rib over the transept. The wind appears to have torn it up, and so obtaining a sufficient resistance to its fury, swayed and wrenched the structure beneath till both came down and destroyed some of the work in front of and beyond it. One of the upper tier of columns in its fall became inverted, we are told, and stood so buried in the earth. The accident was witnessed by only one man, a stable keeper, so that we could learn nothing that could throw any light upon the manner in which the structure gave way. That the force of the falling mass was terrific may be seen in many instances in broken columns and girders, many of which are shattered into small pieces. The weight of iron alone brought to the ground is variously estimated, but we are confidently informed that the quantity of iron actually destroyed does not exceed 150 tons. Part of a girder was thrown through the glass of the rooms occupied by Mr. Bonomi, (where he is picturesquely at work preparing the *fac simile* of an Egyptian building which is to be set up, with its propylon and covered court), and injured one of the moulds of a capital. In connection with the Egyptian section, there will be a copy of the Tomb of Beni-hassan, the disputed type of the Greek Doric.

All those parts of the building which are finished have stood firm and unshaken, affording good proof of their stability. The whole length of the building is up next the public road, and some of the glazing and painting are done, although for the other side, next the Company's own grounds, only the foundations are in. The position of the building on the side of a hill renders it a much more difficult and onerous work than the structure in Hyde-park. Many of the columns on the low side are raised on brick piers of considerable height, to bring them up to the proper level. The ground-works are in progress, the well has been bored to a depth of 340 feet, found to be sufficient for an ample supply of water, and general activity prevails. The day was not propitious when we visited the spot, but while we were in the upper gallery the sun escaped from the clouds for a few minutes, and lighted brilliantly into view what will not be the least of the many attractions of the "palace,"—one of the most beautiful and extensive prospects in England.

After mention of this colossal undertaking, most matters would seem small and insignificant: we will therefore not dip again into the Letter Box.

* See page 41 of our present number.

NOTES ON FRENCH BUILDINGS, PRINCIPALLY ECCLESIASTICAL.*

THE art of architecture is connected at so many points with the habits, manners, and customs of the people amongst whom it flourishes, and it reflects by its structure and adaptations so much of the influence of climate, government, and the other external circumstances of a nation, that some general knowledge of the subject is essential to every one who would extend his inquiries into men and things beyond the narrow circle circumscribing his own immediate interests. Architecture has been happily termed, "History in Brick and Stone:" it is so; but it is also manners, morals, religions, modes of thought,—petrified—fossilized, so to speak, and preserved for the inquiring minds of future ages, as illustrations of the animated pages of history. But it is not necessary always to contemplate architecture in this retrospective manner. It is equally calculated to throw light on the moving panorama of the living, breathing world around. Comparative anatomy has done much to throw light on the structure and functions of the animal creation, and to raise our admiration of the works of Nature's great architect. Comparative architecture must tend, though in a lower degree, to expand the mind, to furnish it with new ideas, to exhibit the constructive powers of the human intellect under other circumstances than those we have been accustomed to, and, whilst teaching lessons of humility, teach also the capabilities which lie dormant until necessity calls them forth.

The development and progress of architecture amongst our continental neighbours is always an interesting subject, whether considered in reference to the magnificent remains of former times, or to the state of the arts of construction at the present day. The fine feeling of art and the general good taste of our French brethren none will dispute; and if all who visit the continent and are capable of appreciating the subject would describe in simple terms the buildings they have seen and the impressions derived from them, a mass of information would be accumulated of a very useful character. The following notes are a humble attempt to contribute in some slight degree to so desirable an end.

Architecture and building in France at the present time are in a decidedly prosperous condition. Several causes have combined to produce this state of things. The agricultural, commercial, and manufacturing classes are, for the most part, fully employed. Capital is abundant and money cheap. The reaction from the general paralysis caused by the revolution of 1848 is infusing vigour into every department of industry. The French people expect much from the new dynasty of rulers: whether their expectations be realised or not, it must be admitted that the present government, by public grants in some cases, by subsidiary contributions in others, and by exciting a spirit of emulation in every locality, has done much to stimulate the spirit of enterprise in undertaking and carrying forward great public works in every part of the country.

In no department of architecture is improvement more visible than in the attention now paid to the preservation and restoration of the magnificent mediæval structures with which France abounds. In this respect a wonderful change for the better has passed over the public feeling of France. For a long period previous to the first revolution a spirit of carelessness and neglect had been indulged, which had allowed much devastation and ruin to be perpetrated, to which the reckless and blind fury of the revolutionists merely put the finishing stroke. Much destruction was then perpetrated which no exertion can ever repair. Many noble structures were levelled with the ground, and many others were diverted from their sacred uses and degraded to the basest purposes. The feebleness of the Gallican church for a long period prevented any efficient attempts to remedy this state of things. Public opinion was indifferent or hostile to any movement in this direction. Of late years, and more especially since the late rapid changes in the government, a signal revolution has manifested itself in the public mind in reference to this subject. A strong and decided feeling in favour of mediæval architecture has begun to prevail. This has been greatly encouraged by the establishment of antiquarian societies in the various provinces, which pursue their researches with considerable zeal and earnestness.

The growing influence of the church and priesthood, thus encouraged by public feeling, and fostered by the assistance of government funds, has led to restorations of the most extensive character in most of the great ecclesiastical structures. Unsightly hovels and clusters of humble buildings, which had been allowed to nestle between the buttresses, and shroud the rich carvings of the churches, have been swept away. Tottering old houses, which had obscured the view of noble façades have been ruthlessly levelled with the ground. Crumbling and shattered masonry has been removed and replaced. The splendid ranges of statuary and tabernacle work, which the iconoclasts of the revolution had battered and mutilated, now shine forth in many cases with more than their original splendour and richness.

Two circumstances existing in France have materially contributed to increase the facilities for this work of renovation. One is, the abundance of excellent building-stone easily accessible in every department north of the Loire. This material, sometimes gypseous and sometimes calcareous in its composition, is beautiful in colour, readily worked, applicable to the most delicate tracery and mouldings, and for the most part durable when exposed to the weather. The other circumstance is, the existence of a numerous class of operatives, above the common stone-cutter, and yet not aspiring to the rank of artist; men very capable of executing the minutest details of Gothic sculpture and tracery, with characteristic spirit and boldness, and at a price which keeps the outlay within moderate bounds.

Many of the buildings where the restorations are in progress will be brought under our notice as we proceed.

It is a remarkable fact, account for it how we may, that the attention which has recently been paid in France to the mediæval remains, has not hitherto led to the revival of Gothic architecture to any appreciable extent in modern buildings. A few specimens undoubtedly exist, but they are exceedingly meagre both in design and in detail. The spirit which seems quite capable of entering into the feelings of ancient art when working under the visible shadow of its influence, appears entirely to evaporate when devoted to original composition. The modern French churches are essentially Italian in their conception and treatment. The larger ones are modelled on the form of the basilica, with clerestory, side aisles, and frequently with transepts and apsidal eastern ends.

A very good specimen of the modern French church is to be found in that of Notre Dame de Lorette at Paris, situated in the Rue St. Lazare, beyond the Northern Boulevards. It is large and commodious; rather plain externally, but highly ornamented in the interior. Its plan forms a Latin cross, forming three aisles with side chapels outside, and apsidal eastern end.* The southern front has a bold tetrastyle Corinthian portico.

The organ gallery is carried by a stone screen with columns, the centre part underneath forming an inner vestibule with baptisteries on each side. The church is a basilica in section, the clerestory carried on Ionic columns supporting a straight entablature. The ceilings are flat, divided into panels with considerable ornament and gilding. At the intersection of the cross a square tower is carried up with an entablature and attic, which is crowned by a bell turret, square on plan, with arched openings on each of its four sides.

The interior of this church is highly decorated with paintings in oil by the most celebrated artists of the modern French school. These cover the walls of the clerestory and side chapels and the pendentives and spandrils of the vaults at the intersection.

The architect of this church was M. Le Bas, whose plans were adopted after a public competition. It was commenced in 1823, and completed in 1836. The total cost was 1,800,000 francs, or 71,400*l.* for the building, and 400,000 francs, or 15,866*l.* 13s. 4d. for the paintings and decoration—in the whole 87,266*l.* When it is remembered that this is only a parish church having a district of moderate extent around it, it must be acknowledged that whatever the artistical result may be, public religious edifices in France present a wider scope for the display of the mental resources of the architect than the corresponding class of buildings in England.

In the present case the building exhibits several bold and original features. In plan it is well studied and arranged, and several very striking effects are produced by the large number of internal columns when seen in combination with the vaulted recesses and intersections. The mural paintings, belonging as they do to the architecture of the buildings, impart a vivid completeness and finish to the interior, which is not often met with in this country.

The design, however, is far from faultless. The straight entablature supporting the clerestory, the square-headed clerestory windows, and the flat ceilings divided into square panels, impart a rigidity and stiffness to the internal lines, which is scarcely removed even by the profusion of pictorial decoration. The outside is every way inferior to the inside of the building. The southern portico, as tetrastyle porticoes usually do, looks narrow and squeezed up. The centre tower is bald and meagre, and the remainder of the exterior consists of little more than plain walls crowned by a cornice and attic.

There is another church of equal size and superior external architecture now nearly completed near the Great Northern Railway terminus in the Place Roubaix.

The cost of these ecclesiastical buildings is not defrayed, as it is frequently supposed, out of the general taxation of the country. The Parisian churches draw their funds from rather a singular source. In Paris the furnishing of funerals is not left to private enterprise, as with us: one undertaker contracts under Government sanction for the whole city on a fixed scale of charges. Out of the profits thus acquired a certain per centage is allowed, which forms the sustentation fund of the churches. There are some other sources of income, but this forms the principal. To our habits this may appear a little repulsive; but it must be admitted that if taxed at all it is better to make the tax, like this, subservient to architecture, rather than, like our late odious window-tax, directly inimical and destructive to it.

Public improvements are at present occupying much attention at Paris. The new street, continuing the Rue de Rivoli up to the Hotel de Ville, has caused the destruction of several hundred houses in the most crowded and squalid portion of the city. Its new alignment is being set out, and will give abundant scope for the skill of our French brethren in the art. The cost of the buildings and interests requiring compensation in order to form this street, has amounted, according to the French papers, to the sum of 25,000,000 francs, nearly a million sterling, the whole of which is defrayed by the municipality. The completion of the northern side of the great quadrangle of the Louvre seems likely soon to be accomplished, the buildings which stood in the way having been removed, and the plans, it is said, approved. The rapidly accumulating treasures of the Louvre Gallery and Museum demand an extension of space. There are difficulties in the way of the design, arising from the circumstance of the axis of the buildings of the Louvre and the Tuileries not being in a right line; but there is no doubt this may be successfully got over. When completed, they will be, of their kind, the noblest group of buildings in the world, both artistically and historically considered.

The restoration of the *Sainte Chapelle* still continues, though very slowly. The interior is nearly completed, but wants the tiled floor and some of the glazing. As a specimen of rich thirteenth century architecture, this little building is probably unrivalled. Its polychromatic decorations are for the most part in good taste and keeping with the architecture, though ex-

* Read before the Liverpool Architectural and Archæological Society, December 2d, 1852.

* This church, like many others in France, stands north and south; our continental neighbours not being nearly so pedantic in regard to orientation as the Protestant Church of England.

ception might be taken to the star-spangled vaulted ceiling. The exterior is being gradually restored, though some time must yet elapse before it is completed.

The *Conservatoire des Arts et des Métiers*, in the Rue St. Denis, is being rebuilt and greatly enlarged. This institution, which is supported by the Government, and thrown open gratuitously, contains working models of the most improved machinery in every department of industry. Every new patent is here displayed, and every new invention exposed to the inquiring. Such an institution is much wanted amongst us, and it is to be hoped that in the new buildings to be erected at Kensington ample provision will be made for this purpose.

Time will not permit, however disposed I might be, to indulge in any critique on Parisian buildings in general. There is a wide field open in this direction for any competent architectural writer to enter upon, and I know of no greater service which could be rendered to the rising students of our art in this country than to familiarize them with the excellences, and point out the defects of the principal buildings in Paris. There are also many buildings of a class not so striking, from which valuable hints may be taken. Here, for instance, is a Protestant place of worship, in the Rue Chauchat, not of very large dimensions, of which the construction is bold and original. It was built in the year 1827, for a customs depôt, and converted into a church in 1843. In plan it is a parallelogram, with a single span roof. At intervals of about 16 feet, bold projections, resembling buttresses, are carried transversely inwards and outwards from the walls. From these semicircular arches are thrown across the building, which support the purlins and framing of the roof. The extension of the buttresses outside serves to counteract the thrust of the arches. Between the buttresses internally, side galleries are carried, and externally the spaces form corridors and apartments. The arches and buttresses thus forming the frame of the building, the curtain walls are only required to be comparatively slender. The construction and design, whether or not a pattern for imitation, are striking and effective.

Leaving Paris, we will now extend our view to the provinces. I propose simply to record the impressions made on my mind respecting the architecture and progress of building in a few of the towns in the centre and south-west of France during a recent visit. The first town to which I would call attention is the city of *Tours*. Situated on the south bank of the river Loire, in the midst of a fertile country, it has maintained a high position as a place of importance in every age of the history of France. Its present appearance is that of a respectable provincial town, with rather more of refinement and architectural pretence than is usually met with in places of equal magnitude. Its ancient walls are levelled with the ground, and the ramparts or boulevards converted into pleasant walks planted with trees. The Loire is here crossed by a handsome bridge of fifteen arches, from which the Rue Royale, a noble modern street, intersects the town from north to south, and is continued far away into the country by a road straight as an arrow, with a stately avenue of trees on either side. The buildings fronting the Rue Royale are lofty and handsome, faced with white stone, reminding the spectator of the best parts of the new town of Edinburgh. The portion of the town to the east of this street contains the aristocratical quarter. Many of the houses are very recent in their erection, and display considerable taste in the doorways, cornices, and balconies. Columns and pilasters seem to be not much patronised. The body of the building generally consists of plain wall, trusting for effect to a bold ornamented doorway, a moderately ornamented cornice, and decorated window-dressings. The result is on the whole very pleasing, partly, no doubt, the effect of the beautiful cream-coloured stone with which all the buildings are constructed.

The ancient part of the town presents many features of much interest to the architectural antiquary. The cathedral and monastery of St. Martin, of Tours, so famous during the middle ages, has almost entirely disappeared. The only remains left consist of two lofty towers, at such a distance from each other that it is difficult at first sight to believe that they could ever have formed part of the same building.

The Cathedral of St. Martin, in the height of its splendour, was decorated with seven towers, —two to the west front, two each to the north and south transepts, and one at the intersection of the cross. The towers now remaining are the southern tower of the west front, and the west tower of the north transept. The architecture is that of the latter part of the eleventh century. They are lofty, and enormously strong in the construction. A wide street now extends along the site of the ancient nave.

The present cathedral is the church of St. Gatien, in the eastern quarter of the city. It is a large and noble pile of building, commenced in 1170, and continued during the succeeding centuries down to the time of the Renaissance. It is a remarkable fact, however, that through the whole period of the erection the same plan and general character have been preserved, with differences in the details as the style progressed. This is the case in many of the continental buildings, which gives to them an air of unity and completeness, certainly superior to the grotesque and somewhat jarring contrasts which so frequently present themselves in the several portions of our English cathedrals.

The west front is rich in general character, but not pure in style, having been erected during the latter part of the fifteenth century. The character of the façade in its deeply recessed portals, with their statuary and niches, its triangular canopies, its rose windows, is an imitation of the thirteenth century design, carried out with detail of a later date. The sculpture and ornament is of the most elegant design and delicate execution. Much of it has been recently restored in a masterly manner. The towers are crowned with octagonal turrets, covered by domes and cupolas perfectly Italian in their style. The interior is pleasing and effective, though not on the magnificent scale which renders some of the French cathedrals so imposing. It is 256 feet long, and 85 feet high to the apex of the vaulting,

The plan is the usual Latin cross. The choir has a multangular apse, the aisles continued round the east end, with projecting side chapels between the buttresses. The transepts have large rose windows at the north and south terminations. The clerestory is lofty, having large windows with flowing tracery. The triforium is peculiar, having double sheets of tracery, one placed about a yard behind the other, the outer being glazed. This gives a remarkably light effect to the interior. There is a large quantity of good stained glass in the large clerestory and triforia windows. The organ is placed in the south transept under the rose window. It is very large, and in the Florid Renaissance style, adapting itself to the curves of the window.

The archbishop's Palace is a large middle-age building flanked by round towers, with an Italian façade immediately adjoining the cathedral.

The church of St. Julien, near the Rue Royale, has been long secularized, but is now being completely renovated and restored to its sacred uses. It is a large cross church, with tower at the west end. The tower and west front are Early Romanesque, equivalent to our Early Norman. The columns are of classical proportions, with foliaged capitals, the arches square and plain. The label moulds are ornamented with foliage, the strings exhibit the triple billet mould. The body of the building is early thirteenth century work, with groined vaulting and lofty clerestory. There is a noble crypt adjoining, now converted into a stable, which has apparently formed one side of the ancient cloisters.

There are many interesting mediæval buildings in the more ancient streets. No. 35, in the Rue du Commerce is a fine old mansion in excellent preservation, set back in a spacious forecourt. It is apparently of the early or middle part of the sixteenth century, in what may be called the Italianized Gothic, contemporary with our Early Elizabethan, but very different in its style and details.

Not far from this is the Place aux Fruits. There is a modern house, evidently of recent erection, which struck me as exhibiting remarkably good taste. It is not very easy without drawings to convey an adequate impression of a building, but the following is the general arrangement. The ground-story presents a large *porte-cochère* in the centre, with large folding gates on each side opening to the *remise*, a coach-house and offices. The one-pair floor has two arched windows, with pilasters and archivolts, and a continuous iron balcony. The two-pair story has two square-headed windows, with dressings round, and separate iron balconies. Above this runs an enriched frieze, surmounted by a bold cornice broken round the pilasters. Above this cornice is an attic set back some feet from the front, the space being occupied by a light verandah, forming a promenade with flowers, vases, and creeping-plants trained and festooned.

We will next turn our attention to the city of *Poitiers*, sixty-three miles south of the Loire, the capital of the ancient county of Poitou, interesting to every Englishman as the scene of one of the greatest triumphs recorded in the English annals. It is a venerable and picturesque city, rich in memorials of the past of every age of architecture. The cathedral demands our first notice. The pointed architecture of the towns south of the Loire differs materially in its character from that of the north of France, and departs much more widely from the English model. The west front of the cathedral of Poitiers is flanked by two towers, unequal in size, but apparently of the same date. The faces are formed in the lower stage into panels by light single shafts and pointed arches. In the next stage there are similar long panels formed by clustered piers and arches more deeply recessed, and canopied by triangular crocketted labels. Above this the towers break into octagons, without spires, and are finished at the angles by octagonal turrets and spirets or finials. The centre part of the west front has three portals, with statuary and niches in the archivolts, and bas-reliefs in the tympana of the arches. These doors are deeply recessed and fine in character. Above these a large rose-window in the centre is in course of restoration. The whole *façade* is of early or middle thirteenth century, with the exception of the octagonal portion of the north tower, which is probably of later date.

The main body of the structure is attributed to our Henry II. who was Duke of Anjou and Poitiers in right of his wife. With this date the style of the architecture appears to agree. The interior is curious, differing materially from most buildings of its class. There are three aisles of nearly equal height, without clerestory or triforium: the height is probably 70 feet in the centre. The aisle windows are carried up nearly to the apex of the vaulting, the cills being about 30 feet above the floor. Underneath the windows is an arcade formed with single shafts and semicircular arches. The vaulting is singular. The pier ribs and cross ribs are brought down about 1 foot 6 inches, and each bay forms a sort of pointed dome, with small cross springers formed by a simple bead, except at the east end of the choir, where they resemble the arch ribs. The transepts are shallow and without aisles. The east end is square, being in this respect almost unique in France. There is no Lady chapel, but there is a semi-octagonal recess at the east end of each aisle, in which an altar is placed.

The piers have delicately-cut foliaged capitals.

The north door of north transept is good Norman, or Romanesque, with three orders of moldings, and well executed statuary capitals to the columns.

The window at the west end of north aisle is a beautiful specimen of Early Geometrical tracery in six lights.

On the whole the Cathedral of Poitiers possesses a certain air of grandeur, though much inferior to many of its sister structures. Its peculiarities are worthy of study.

The most ancient building in Poitiers is that called the Baptistery of St. John, now the Museum. It is of a style anterior to the introduction of the Lombardic architecture into France, its details being classical, though somewhat debased. The walls are built with squared stones in courses about 6 inches thick, with occasional layers of red Roman tiles. The cornice is of Corinthian character, with

enriched modillions and a low-pitched pediment, the bed-mould carried across horizontally in the Roman mode. The interior is about 45 feet by 25 feet, with an octagonal recess on one side, and an addition of later date at the other side. The walls have paintings of Early Byzantine character. The octagonal apsis has an arcade with semicircular arches and capitals of Corinthian foliage. This very interesting relic was recently marked for destruction, and was only with difficulty saved by the intercession of the Society of Antiquaries of the west of France.

The church of Notre Dame de Poitiers has a most rich and curious west front of Early Romanesque or Norman. In general character it is not unlike the front of Castle Rising Church, Norfolk, but more extensive and rich. The front is flanked by two octagonal buttresses there, and the entire surface is covered with ranges of semicircular arched panels, strings, and corbels, enriched in the most profuse manner by grotesque sculpture in Runic knots, corbel tables, beak heads, and every variety of Romanesque enrichment. The buttresses are expanded into round turrets above the roof, and crowned with low cones or spirets covered with a scale ornament. The centre portion of the gable is kneed, and raised in the middle, to give height for a recess of vesica shape, filled in with sculpture.

The whole front is in an excellent state of preservation, apparently not the slightest alteration having been made since its erection. One circumstance is a little remarkable. The style of the whole is rude, and yet evidently the best of its kind, no pains having been spared upon it. This would mark the date of erection not later than the latter part of the eleventh century, with which the style corresponds; yet, with every other portion of the arched work semicircular, two of the recesses on the lower tier have the arches slightly pointed, evidently of the original work. We must either conclude that the rude style of execution continued longer in France than in England, which it seems hard to believe, or that the pointed arch arose earlier in France than in England, which I feel strongly inclined to think is the case. The interior consists of three aisles separated by piers into nine bays in the nave, beyond which the chancel forms an elongated semicircle with round apsis, the aisles continuing round, with projecting side chapels between the outer piers. The piers of chancel are round. The centre aisles of both nave and chancel are covered with barrel vaulting with a square cross rib at each pier. The side aisles have plain semicircular groining without ribs. There is no clerestory.

The floor of the chancel is raised about a yard above the aisles. There is a little introduction of later work in the groining of the side chapels and part of the piers of the south aisle of chancel, but the general arrangement is preserved, and the whole church is a very curious specimen of the period.

The nave and aisles have lately been painted in distemper in the Byzantine style, with stencilled patterns of all kinds covering the whole surface, brown and blue predominating. The effect is too showy, and yet, from the nature of the colours, by no means brilliant.

Externally, the windows are plain single lights, with semicircular heads set in arched recesses between flat buttresses.

There is a centre tower of the original construction, which is very curious. It consists of three stages, the two first square on plan, but set back at the string; the second story broached up to the upper stage, which is circular, covered with a round cone or spire. On the south side there is a small attached stair turret, covered with a similar cone.

The classification and nomenclature of Gothic architecture current in England are extremely perplexing when applied to French buildings. The terms, Norman, Early English, &c. when applied to English buildings, are intelligible enough; but it is to be regretted that a more comprehensive survey of the mediæval architecture of the continent was not taken before a definite classification was adopted. To apply the term "Norman" to the architecture of the south-west of France, where the Normans never were settled, and from whence they themselves derived their style, is about as applicable as it would be to term Grecian architecture Roman, because we first derived our knowledge of its principles through Italy. Hope and others have given to this style the name of Lombardic, as the most characteristic specimens are found in Lombardy; but perhaps the term Romanesque expresses its debased character, and its relation to the classical period, better than any other. As to the pointed style on the continent, in the confusion which exists, it would seem that no better classification can be adopted than that of the century in which the structures were erected.

Time and space would fail in the attempt at a detailed description of the numerous mediæval remains with which Poitiers abounds.

The church of St. Porchaire is Early Romanesque, with a square western tower in four stages, and a fine west door.

The hall in the Palais de Justice has an open timber roof of rather rude character and a blank arcade round the walls. One end forms a vast window of the fifteenth century character, with open turrets containing staircases at each side. Below the window is a broad band with angels holding shields, and several enriched bands of foliage. This apartment is stated to be the great hall of the ancient palace.

The church of St. Radegonde has a choir with semicircular apsis and aisles continued round, apparently of the eleventh century. This is of small dimensions. The nave, which is of later date, and identical in style with the cathedral, is in one broad aisle, which spans nearly the entire width of the choir and its aisles. Under the choir, the centre aisle of which is raised considerably above the nave, is a small, very ancient crypt, which contains the tomb of the saint in black marble. The choir and its aisles have been painted in a similar style to Notre Dame. The west tower is Early Romanesque, square below, and octagonal above, with attached stair-turret. The spires are now slated.

The church of St. Hilaire is Romanesque in style, but with much of the Byzantine in its character, with barrel-vaulting semicircular recesses covered with semi-domes, the bays in the nave covered by domes. This church is a mere fragment of the original building, a great portion of which was destroyed at the revolution.

There is not much modern architecture in Poitiers to remark upon. I observed in front of a new house not far from the Musée, a centre window with an enriched frieze consisting of a bust in high relief, with scrolls of vine-leaves, grapes, and tendrils of graceful design and beautiful workmanship.

In the Grande Rue, facing the Place d'Armes, there is a noble doorway, apparently of the seventeenth century, the aperture about 15 feet by 8 feet, with coupled Corinthian columns on each side, and entablature. The architrave is formed with a rich band of foliage. The building to which this is attached is now a warehouse. The buildings in Poitiers are for the most part of stone, timber framing being rare.*

J. A. PICTON.

* To be continued.

ROYAL ACADEMY.—LECTURES ON ARCHITECTURE.

PROFESSOR COCKERELL delivered the first lecture of this course on Wednesday evening, Jan. 5. He commenced by observing that the return of this period of the session was alike pleasing to the professor and to the students, from the satisfaction felt by the former in imparting his hard-earned experience, and the interest felt by the latter in listening to the dicta of a veteran, who, by the happy constitution of the academy, was not only an artist, but a practical architect. Quoting from Vitruvius and other ancient writers, their opinions on the importance of the union of theory with practice, the lecturer dwelt upon the necessity of laws, rules, and logical reasoning, in the study of architecture. He explained that the object of the Royal Academy lectures was to enforce the natural principles involved in the pursuit; to indicate the merits of the great authors who had treated of the theory of the art (and whose works the student was bound to possess as his stock-in-trade); and, lastly, so to exemplify that theory by reference to the varied beauties of different styles, as to supply the ways and means of acquiring a competent knowledge of each. The value of such lectures was, therefore, very great, especially as tending to encourage habits of just criticism and sound reasoning, and thereby to enlarge the mind. In the enunciation of principles which were always constant there must, of course, on repetition, be some want of novelty; but an academy should only be regarded as a depositary of knowledge, and as a field producing its annual and usual crop, improved by careful tillage, and not as a hot-bed of genius, or as calculated to produce those rare phenomena which Nature so charily displayed. If its natural action could be kept in healthful order, no more should be expected from such an institution. Architecture was so exposed to the fluctuations of fashion and the delusions of imagination, that the grave conclusions of learned inquirers in past ages were of the utmost value; for the rash adoption of novelty in such an art might be deplored to the remotest posterity; and when such novelties, ending in failure, were perpetrated in the durability of stone, they became a real misfortune to the country which possessed them. The works of Borromini especially, and in a scarcely less degree, of Batty Langley and of Horace Walpole, were striking illustrations of this evil. Great, on the other hand, were the value and importance of fine national monuments, in which the principles and theory of antiquity were duly recognised, and unhappy the country which could not point with triumph to such edifices as St. Paul's and Westminster Abbey. What would Egypt or Athens be without their architectural remains,—which, indeed, formed plainer evidences of the history of these countries than the writings of Herodotus and Thucydides, and which, after a lapse of 2,000 years, were still the chief delight of the student and the traveller? With these impressions of the importance of architecture, and of the heavy charge resting upon himself, as having been selected to give full expression to it, he proceeded to consider in what manner the student could best pursue the subject, and to what sources of instruction he could appeal. In the course of this inquiry he dwelt upon the necessity of ascertaining, in the first place, whether a true feeling and inclination for the art existed in the mind; for if a real pleasure in any art or science was manifested in early life, success might be considered certain with the aid of zeal and industry. If, however, such a decided taste for art did not exist, the youth should at once embrace some of the many other callings which were as useful and as honourable as that of the artist. The early inclination of Thucydides for history, and of Vitruvius and Palladio for architecture, might be referred to as instances of this truth. A liberal education was, of course, an essential preliminary to the study of architecture; and above all, the student should possess a sincere and ardent love of the beauties of nature. No department of the natural kingdom,—animal or vegetable,—from the infusoria and mollusca, to the carnivora; and from the dog-rose to the banyan-tree, was destitute of beauty, and many natural objects supplied the type of valuable architectural members. Thus, the strength of the straw had led to the use of the hollow column, whilst the admirable adaptation of the limpet-shell to its exposed situation on the sea-shore, had led to the successful application of a similar principle to the sheathing of ships with metal. The power of resistance in the egg-shell, which, although so fragile in one direction, sustained the vibration of transit with so little liability to damage, was another striking illustration of natural science. Eggs were brought from Scotland in boxes containing 1,400 each, and no greater allowance than thirty or forty per case was made for breakage; and the egg-shell presented the architect with a type of the dome and the vault. Beauty of form especially abounded in the works of nature, and to the fortunate recognition of a mere natural principle (though it might be dignified with the name of a discovery) the architect might be indebted for the acquisition of fame and affluence. Nature, indeed, should be studied above all other masters; but, next to Nature, the great authors whose works had received the sanction and approval of bygone ages, were to be carefully



SOUTHERNDOWN HOTEL, GLAMORGANSHIRE.—Mr. J. P. Sldden, Architect.

studied; for in the practice of this art invention should be restrained to the new and logical combination of old and long recognised elements.

With these introductory remarks, Professor Cockerell proceeded to point out especially the merits of Vitruvius, describing his position, the history of his work and its various commentators, and the contents of the different chapters of the work, upon the extreme value of which he particularly enlarged. The great work of Alberti was described by the lecturer in a similar manner, and a notice of other authors was deferred till the next lecture.

HOTEL AT SOUTHERNDOWN, GLAMORGANSHIRE.

Annexed is the view of a hotel which is now in course of erection and nearly completed at Southerndown, near Bridgend, in Glamorganshire, from the designs and under the superintendence of Mr. John P. Seddon, architect, of London. It is intended to supply the want of proper accommodation which has long been felt by the visitors who during the summer months have been in the habit of frequenting this watering-place of South Wales. Southerndown occupies a commanding position on the coast, about halfway between Cardiff and Swansea, and near to the mouth of the river Ogmore. The elevation of the land is considerable, and the cliffs, of limestone formation, rise abruptly to a great height; but at this point they decline on either side towards a pleasantly wooded ravine leading to a capacious bay, which, at the tide-ebb, affords a fine extent of sands. On the one side of this is the park in which stands Dunraven Castle, the residence of the Dowager Countess of Dunraven; and on the opposite height is the village of Southerndown; the site of the hotel being nearly at the summit.

The materials with which it is erected are the limestone quarried on the spot, and the lime burnt from the same; but as this stone is of so hard a nature as to render it exceedingly difficult to be worked, for such freestone as is positively required the Bath stone from Coombe Down has been used. All the weathered sills, blockings, quoins, and arches, however, are executed in the local stone hammer-dressed, the arrises only being worked sharp and true with the chisel: the remainder of the face is of random work. The depth of the reveal to the windows is 14 inches externally, 7½ inches being given to either of the arched recesses seen in the drawing. The projecting wall at the farther end of the raised terrace is for the purpose of protecting the front somewhat from the wind, which is violent at some seasons. The whole structure is a quadrangle on plan, of which the side not seen in the drawing is two stories in height, and the hotel is arranged so that the portion to be let privately is perfectly independent and separate from that wherein its ordinary business is carried on. The builder is Mr. J. Brown, of Stoke's Croft, Bristol, whose original tender was 1,298*l.* and for the addition of the verandah, and an extra story to the back buildings, 124*l.*

The Ordnance Survey of the West of Scotland.—At a recent meeting of the Glasgow town council, it was resolved to present a memorial to the Board of Ordnance, recommending the adoption of the six-inch scale in that district as elsewhere in Scotland, and throughout Ireland. The Philosophical Society of Glasgow have memorialised the Treasury to the same effect in reference to the counties of Lanark, Renfrew, and Ayr.

VENTILATION-CEILINGS.

As this matter of harmful or harmless construction stands apart from all questions of taste, and affects infinitely more than the credit of this or that fashion, this or that period for historical-romance-building, or this or that man, allow me to add that I hold it a duty to answer all objections that may fall in my way, whether they seem to me worth answering or not.

"J. E. D.'s" complaints, then, seem to be two,—1st, That my readers are left liable to the impression that I regard ventilation as "humbug." In answer, I can only refer to the third paragraph of my last letter (p. 755, vol. x.), to the last but one of my previous letter ("Sanitary Architecture"), suggested by his first remarks, and to the whole tone of what you first did me the honour to use, which originated this discussion.

2ndly. He seems afraid that by telling people the true proportion of carbonic acid in their breath, I shall lead them to think its "quantity utterly insignificant,"—in short, to find out *how little* it is that poisons and might kill them. To which I reply, that this is precisely what I *intended* them to see. Does he prefer that they should think it takes twice as much to hurt them as it really does? Or that by overrating its quantity, and so *falsely* rating the specific gravity of breath, they should make false and *ineffectual* provisions to let it out, instead of *effectual* ones? If chemists could measure us the true per-centages of those other poisons, infinitely worse than the carbonic acid, which give us *all* our phthisis, scrofula, consumption, and tubercular disease (for "*unless foul air be respired*," says Dr. McCormac, "*there can be no consumption, no scrofula*."—I quote the exact words of his paper, published by the British Association), "J. E. D." would

be still more scandalised at their "utterly insignificant quantity."

Next, I thoroughly agree in the opening sentiment of "J. E. D.'s" last letter, that it is one of the hardest puzzles in our common strategy, and one calling for most attentive study, to know when a fool should be answered according to his folly, and when not. "Vice Cotis" has been answered sufficiently, but, as I think, at too much pains. He must not go away with the notion that it took us a column to deal with him. My answer would have been, "Just go and read your Regnault *from the beginning* to the place quoted, before you again address an editor, to say that you take him and two of his accepted correspondents for three fools."

Now, with regard to "B. W." whose object, it seems, is to "enable the fancy of architects to luxuriate" more freely than I would, I must first tell him, as he quotes these *ironical* words of mine in such sober earnest, and as you *may* have readers equally matter-of-fact, that when I there wrote "fancy," I meant "sloth and want of fancy," and when I wrote "luxuriate *ad libitum*," I meant "stagnate as at present." It would take me far to enter into the *rationale* of this, but whichever or whatever be the end served by level ceiling-masks (for it matters not to our present argument), this end *cannot*, as he implies, be attained with harmless construction. For proof, see first and second columns of the article that originated this discussion.

2nd. "Paxton-gutters," I suppose, are something to drain off water, by its gravity, *i.e.* its gravity in air. We want to drain off light air by its *levity* in common air. If the gutters be of any use to us, then, they can only be so *inverted*. But I have proved in the place above referred to, that drains for this purpose must have forty-eight times the slope necessary for water-drains; *i.e.* if gutters must fall an inch in a yard base, these must rise 4 feet on a yard base; and also, that they and the openings must occupy the *whole* ceiling. What resemblance, therefore, they can bear to gutters, more than my arrangements do, it is for "B. W." to show.*

3rd. Fresh-air inlets. Why we do not need special provision for them in domestic buildings, and why "air-fountains" will not do, he will find in the article above referred to, but more explicitly in my first letter ("Sanitary Architecture"), and still more so in the appendix to the work referred to therein.

4th. The absence of ventilative provisions does not arise *at all* from the cause "B. W." supposes. He thinks that Englishmen of the nineteenth century have such a care for beauty, such a keen sense of anything "unsightly," that they let this stand in the way even of health. Very well: then of course we let it weigh against things much *less* than health. Let us see. Does any one put it against gentility? Does any one appear without a beaver hat because it is ugly? Does any one forego, for its ugliness, anything in building or furniture (however inconvenient to boot) that counterfeits the appearance of something that has been a *wealth-mark?* Does that young lady in *Punch* see any ugliness in those "lovely Cochin China fowls" that "cost—oh!—ever so much?" Did any one complain of ugliness in the Hyde-park "palace," or the National Gallery when it was built, or anything else that addressed itself to its own day's public "want" for sham lordliness? Do we ever discern "ugliness" in any feature of our house (convenient or inconvenient) that may remind a stranger, for half the first glance, of my lord's mansion? No; but our children do. : s soon as it has ceased to remind of it.

* The hoop-ties for the "sanitary and fire-proof floor-ceiling" I proposed, would be better and more cheaply made, without welding, and in a wholesale way, by punching them out of sheet-iron, in *nests* of several sizes, and the attachment, both to each other and to the walls, may be effected with either smith's work or the [illegible] screw bolts, by the following means. The [illegible] passed [illegible] is to have its arms turned up and half [illegible] at once, between a hammer [illegible] and the notches on the out[illegible] may be made after the first punching out, in the flat. This coupling-piece being passed up through the adjacent corners of the three triangles, a ring is to be dropped on it, pressing the three arms together till they spread again by admitting it into these notches; and a cylinder of wood driven in from above will keep them pressed out against the ring. [illegible] foot of the ceiling tiles. The attachment to the [illegible] by straps doubled in the middle, nearer the wall, and [illegible], a metal band applied on its exterior (decoratively cut or [illegible]), and then secured outside [illegible] to strain the net to any required tightness. Several [illegible] would of course be more elegant and compact.

Take another case. Do we ever talk of "ugliness" in anything that saves or wins us three farthings per cent.? Does any one think of "unsightliness" (for truly there is enough of it) in the bridge that carries to-day's Holyhead train five minutes sooner, at the cost of the lives of *some other* Holyhead train? For beauty, I certainly, were I painting Mahomet's bridge below, should take it for model. Could it have answered its end with *more* beauty? That, decidedly, it could,—and with more utility too. It could have spanned without the middle pier; spanned at *once* what it now spans at *twice;* have been built without *once* stopping navigation through *either* half; have stood just *as strong to-day as yesterday*, and *as strong to-morrow as to-day;* and with all this, with a little less iron (but a little more thought), it would have needed no beautifying, no lions, no mouldings, and no after-cobbling. Nature would have owned it—as she does all honest things,—lent it—as she does all honest things—the assistance of her own beauty,—assimilated and made it a part of her own self; and men that remembered not its building might have called it beautiful even beside her mountains,—more beautiful because beside them. What! you say: could you,—"E. L. G."—have shown us *how?* To be sure I could, and so could any real engineer:—so will I whenever I think it worth while. Now observe,—"B. W."—"ugliness" did not interfere here to prevent something bigger than a ventilator and less useful. Ugliness might have been dispensed with (and something more besides),—but this would have cost,—not health, no,—nor yet iron (it would even have saved iron),—but cost a little more thought,—a little more engineer's work; and that happened to be dearer than the iron. So, if there be ugliness in this, it was no more seen than a lodging-house keeper sees ugliness in his St. Giles's rotten boards. No, my friend; find an instance, if you can, where we think one moment of "unsightliness" in anything that enables us to make a farthing out of (I am sorry to use unsightly words—out of) another Englishman's blood.

E. L. G.

INTERIOR OF ST. GEORGE'S HALL, LIVERPOOL.

THE interior of St. George's Hall is at present crowded with a forest of scaffolding. It is intended to line the side walls as high as the galleries, including the balustrades, with a polished rose granite dado (which is now fixed), and above with polished marbles in colours. The balustrades will probably be of black marble. The six pairs of doors opening into the hall have just been ordered. They will be in bronze, the panels open work with plate-glass introduced between the inner and outer tracery (if one may so call it). These doors will cost about 300*l.* a pair, or 1,800*l.* in all. They are being manufactured by Potter, of London, from Mr. Cockerell's designs. The ceiling of the hall has been entirely remodelled in the ornamental part since the Queen's visit. The large panels are being filled with the armorial bearings of the kingdom, the county palatine, and the principal towns—emblazoned in colours. The pendentives of the vaulting are to be enriched with large allegorical groups in low relief in plaster.

The floor is being executed in encaustic tiles by Minton, from a design by Gruner, and promises to be an elaborate affair. The centre of the hall will be sunk three steps below the gangway, which extends around.

Mr. Willis has sent down a considerable portion of the frame-work of the organ, with the bellows, wind-chests, and a portion of the pipes. The committee are about contracting for the case and platform, which will cost together about 3,000*l.* The bellows will be worked by a steam-engine, having two 8-inch oscillating cylinders turning a crank, but without a fly-wheel, that the power may be more under rapid control. This is probably the first application of steam power to the production of music on record, except the frightful railway whistle, suggestive of a train of thought of a very different nature.

The organ will be the largest in the world—some think too large.

DETERMINATION OF RAFTERS FOR IRREGULAR ROOFS OF BUILDINGS.

AMONGST the numerous buildings that have lately been erected, and those in the course of erection, in and around London, there must necessarily occur roofs of every form, determined either by the circumstances of construction, or the nature of the situations where the buildings are placed; and in many instances, if the carpenter is not versed in mathematical investigations, much labour may be wasted before he attains his end, as this can only be effected by repeated trials, when unassisted by mathematical knowledge.

A short time ago a carpenter applied to the writer of this paper, soliciting his assistance in determining the length of the longer rafter for a building, the conditions of which may be stated as follows:—

QUESTION.—What must be the length of the longer rafter for a building 24 feet 8½ inches wide, the back wall being raised 8 feet above the level of the front wall, and the length of the shorter rafter 14 feet?

It will here be evident, that the condition required to be satisfied in this question is, that the thrust of the roof on both walls shall be the same, which amounts to this, that a plummet suspended from the ridge-tree shall bisect the angle between the rafters. This is the condition that leads to the solution of the question, and it is rather singular, that a proposition apparently so simple, should require the reduction of an algebraic equation of the fourth order, involving all its terms.

SOLUTION.—Suppose it done, and let AB, fig. 1, denote the width of the building, BF the



FIG. 1.

elevation or rise of the back wall above the level of the front one; FC the shorter rafter, and AC the longer one required to be determined. Then, by adopting a proper notation, the length of the required rafter will be represented by an algebraic equation of the fourth order, in terms of half the angle contained between the rafters; and consequently, by reducing that equation we shall obtain the value of half the angle itself, and from it the length of the rafter sought.

Put AB = 24·71 feet = w, the width of the building; BF = 8 feet = h, the extra height of the back wall; FC = 14 feet = l, the length of the shorter rafter given, and the angle FCG = ϕ required to be found, so that the angle ACF may be bisected by the perpendicular CD; or in other words, that the thrust may be the same on both walls.

Extend the shorter rafter CF to meet the width of the building produced in the point E, and draw FG parallel to AB; then are the triangles CGF, and FBE similar to each other; therefore, by plane trigonometry, we have the following analogies.

Sin. ang. CGF : FC :: sin. ang. GCF : GF; that is,

$$\text{rad.} : l :: \sin.\ \phi : \frac{l \sin.\ \phi}{\text{rad.}}.$$

Sin. ang. BEF : BF :: sin. ang. BFE : BE; that is,

$$\cos.\ \phi : h :: \sin.\ \phi : \frac{h \sin.\ \phi}{\cos.\ \phi}.$$

Then, by assuming the radius equal to unity, and adding these two quantities together, we get DE = GF + BE; or, in terms of the notation, it is $DE = l \sin.\ \phi + \frac{h \sin.\ \phi}{\cos.\ \phi}$; therefore, multiplying this by 2 and subtracting $\frac{h \sin.\ \phi}{\cos.\ \phi}$ from the product, we obtain an equivalent for the width of the building: hence it is

$$= w = 2\,l \sin.\ \phi + \frac{h \sin.\ \phi}{\cos.\ \phi}$$

In this equation, however, there are two unknown quantities,—namely, sin. ϕ and cos. ϕ; it therefore becomes necessary to eliminate one of them in terms of the other, and this can easily be effected by means of the well-known principles of angular arithmetic; for cos. $\phi = \sqrt{1 - \sin.^2 \phi}$, which being substituted in the preceding value of w, the width of the building, we obtain

$$w = 2\,l \sin.\,\phi + \frac{h \sin.\,\phi}{\sqrt{1 - \sin.^2 \phi}}.$$

And by restoring the numerical values of the three given quantities, h, l, and w, the equation becomes

$$24{\cdot}71 = 28 \sin.\,\phi + \frac{8 \sin.\,\phi}{\sqrt{1 - \sin.^2 \phi}}.$$

Now, this is an equation of the fourth degree, which being reduced by the rules of algebra, gives nat. sin. $\phi = 0{\cdot}64279$, which being found in the table of natural sines, gives $\phi = 40°$ precisely, and this being doubled, gives 80° for the angle at the ridge between the rafters; the roof being just 10° below the true pitch: therefore, to find the length of the longer rafter, we have the following process:—

Angle BEF = 50°	log. cosec.	10·115746
Height BF = 8 feet	log.	0·903090
Length EF = 10·442 feet	log.	1·018836

To which add 14 feet, the length of the given rafter, and we get 10·442 + 14 = 24·442 feet, the length of the longer rafter, which was required to be found.

The foregoing question admits of another case, which, although not hinted at by the proposer, seems to be of greater utility in the practice of *roofing* than that which we have just resolved; and for this reason we think proper to consider it also, in order to render the solution of the question more complete and general than it would be by limiting it to the case already resolved. This case may be proposed in general terms, as follows:—

Given the width of a building, the length of the longer rafter, and the elevation of the wall on one side above that on the other side; to find the length of the shorter rafter, so that the thrust on both walls may be the same, or that a plummet suspended from the ridge-tree may bisect the angle between the rafters

EXAMPLE.—Let the width of the building, and the excess of elevation of one wall above the other, be the same as in the previous question, and let the length of the longer rafter be 24·442 feet as formerly determined; what must be the length of the shorter rafter to satisfy the conditions of the question?

This case of the question admits of a very elegant geometrical construction; and for the purpose of rendering the several parts of the diagram perfectly legible, we shall enlarge it to double the former size, as by so doing the principles of solution will be more distinctly perceived, and more easily comprehended:—

Let AB fig. 2, be the width of the building, 24 feet 8½ in.; AF, the height of the back wall above the level of the front one, 8 feet, and

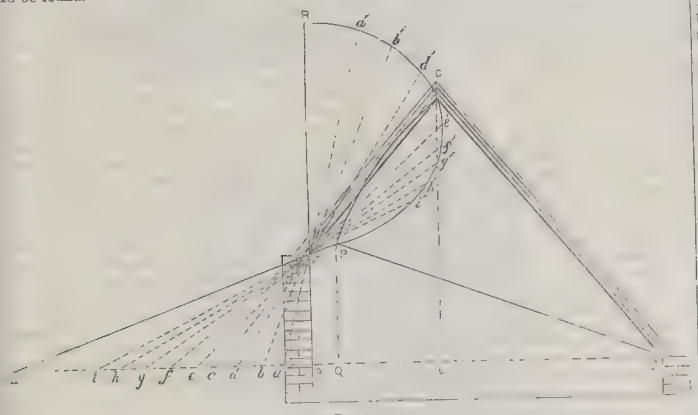


FIG. 2.

BP or BC, the length of the longer rafter, 24·442 feet; then, produce BA, the width of the building to E, or as far as necessary, and extend AF to R, so that AR may be equal to BP or BC, the longer rafter.

In the extension of BA, the width of the building, take any number of points, a, b, d, c, &c. and draw the dotted lines aa', bb', dd', cC, &c. making each of them equal to AR, the given rafter; then, through the several points R, a', b', d', C, &c. draw the curve line RCPF, and it will be a curve line of the fourth order.

Upon the point B as a centre, with the longer given rafter as a radius, describe the circular arc CP, intersecting the former curve in C and P; draw the straight lines BC, BP, FC, and FP; then will BC and BP represent the positions of the longer rafter, and FC, FP the positions and lengths of the shorter one. From the points at C and P, let fall the perpendiculars CD and PQ, and they will respectively bisect the angles BCF and BPF, which is the condition required to be fulfilled by the question.

Adopting the notation of the preceding case, (only here l denotes the longer rafter,) we have the following process for the equation by which the question is resolved:—

Sin. ang. EQP : EP :: sin. ang. EPQ : EQ; that is,

$$\text{rad.} : l :: \sin.\,\phi : \frac{l \sin.\,\phi}{\text{rad.}}.$$

Sin. ang. AEF : AF :: sin. ang. AFE : AE; that is,

$$\cos.\,\phi : h :: \sin.\,\phi : \frac{h \sin.\,\phi}{\cos.\,\phi}.$$

Then, twice EQ = EB, from which subtract AE, and there remains AB, the width of the building; hence we have—

$$2\,l \sin.\,\phi - \frac{h \sin.\,\phi}{\cos.\,\phi} = w.$$

This equation determines the value of the angle BPQ or EPQ, and it will also determine the angle at the point C; therefore, by reducing the equation according to the rules of algebra, we get the natural sine of the angle BPQ, or nat. sin. $\phi = 0{\cdot}93637$, which being found in the table of natural sines, gives $\phi = 69°\ 6'$; and another root of the equation will give sin. $\phi = 0{\cdot}64279$, or $\phi = 40°$, half the angle at the point C, where the shorter rafter is 14 feet, as given in the first case.

To find the length of FP, the shortest value of the rafter, the operation is as follows:—

EQ : EA :: EP : EF; that is,

$$l \sin.\,\phi : \frac{h \sin.\,\phi}{\cos.\,\phi} :: l : h \text{ sec. } \phi.$$

Therefore, by subtraction, it is FP = EP—EF; that is, FP = $l - h$ sec. ϕ, from which we get as follows:—

Value of $\phi = 69°\ 6'$	log. sec.	10·447651
Value of h = 8 feet	log.	0·903090
EF = 22·43 feet,	log.	1·350741
Whole length of the given rafter EP =		24·442
Length of FP as required		2·017 ft.

T.

THE PAINTED WINDOW OF THE SUB DEANERY CHURCH, CHICHESTER.

YOUR journal, at p. 7, contains, in my opinion, some most erroneous comments upon this work, which emanate from a gentleman styling himself "An Antiquated Member of the University of Oxford." His main objection is, it appears, to the arrangement in common of subjects from both Testaments. Has this gentleman ever visited York Minster, or Fairford Church,—the Cathedral and Churches of St. Ouen, Maclou, Godard, Venient, Patnie, &c. at Rouen,—of Gouda, in Holland,—St. Jacques, Liege,—the Cathedrals of Bourges, Tours, &c.? If not, he ought to do so; for there may be found numerous instances, not only of subjects from various parts of Scripture capriciously mingled together, but frequently interspersed with legends of saints, and sometimes similar subjects. I remember, in the church of St. Godard, at Rouen, *King Dagobert granting the charter*, shown below the transom, and a *sacerdotal composition* above it. Everybody knows, who has glanced at the subject, that saints and prophets, accompanied with depictions of some great act or miracle of their lives, are commonly classed together, without reference to their corresponding in the age of their existence. Most of the churches I have named will show this, and the church of St. Saviour, at Bruges, includes both the ecclesiastical and lay peers of France. Bourges, Tours, &c. furnish innumerable instances of the irregular classification of Scripture subjects: in the latter, for example, is, in one window—the Building of Babel—the Martyrdom of St. Sebastian, and the Nativity of our Lord. Did space permit, instances might be multiplied.

This gentleman also objects to the Sons of the Prophets being smaller figures; but they do not appear the less to denote *sons*: being so, they certainly give a dignity to the figure of Elisha. This, in fact, is like all the subjects in the window—a *symbolic* configuration.

Has this gentleman, who says he has seen "the glass of this country and the European continent," to learn that all mediæval art, and glass especially, was *symbolical* of sacred facts, and not *representative* of them? Is he aware that no finite means can truly represent divine acts and revelations? That frequent as have been the attempts to accomplish this, it has as often failed? That even Raphael could only give a comparative development of *his imagination?* Has he to be taught that the *law of art in windows* during the middle ages, down to the sixteenth century, was to treat the several compartments which they contained as separate and complete in themselves, the *tout ensemble* being left to the colouring and detail? Is he aware that on *the very things he complains of in this window its chief merit rests*, because it is carried out upon these principles? I much doubt it; but if not, when he has given a well-directed study to this subject, it cannot fail to be evident to him.

Why has this gentleman omitted all mention of the Scripture texts, which, he *must have known*, would have fully explained the purpose of each subject? It could not be from any oversight of them, because he says he has "viewed the window at his leisure." *Clamant omnes indignissim' factum.*

Whilst examining the window I was fortunate enough to have its objects described to me, which assisted me much in its perusal. The Crucifixion, and the accompanying figures, occupy the three centre compartments: they are intended to bear reference to the Christian faith of the departed lady: the text beneath them is, "Behold thy Son: behold thy Mother." Above them (which this gentleman has thought convenient to say nothing about) is the figure of our Lord in Ascension, bearing the cross triumphant, denoting a hope of her attainment. Beneath the subject of "Elisha and the three Sons of the Prophet," the text is, "Knowest thou that the Lord will take away thy master from thy head to day?" which is meant to typify the maternal desolation which ensued. Under the subject of "Joseph closing the Eyes of Jacob," runs the following,—"Joseph shall put his hand upon thine eyes," which is in allusion to the fact of her son having performed this filial and melancholy act towards his mother.

Such is the window, which abounds in other beautiful detail.

Your correspondent says, "Dying scenes are surely more in keeping with deep and sombre colouring." Does he class painted glass with the paraphernalia of the undertaker,—and associate such memorials with our mourning habiliments, to be laid aside in a year? Surely it is desirable, in showing our respect and affection for the departed, to present cheerful works of art, calculated to induce reverence, and cultivate taste in those that follow.

His remarks upon the works in the cathedral are too indefinite to need any reply; but as he styles himself "An Amateur," and judging him by the standard of his theory, I tremble at his premature infliction upon the public of the window he says he is "*thinking about*," and would suggest to him to previously well study and attain the qualification to his own advice and motto,—"We shall presently learn that a poetical mind improved by a liberal education is essential to a good painter on glass."

I hope I have answered this gentleman's question as to whether "the *quidlibet audendi potestas*" (in this art) reaches to such combinations as he decries. "Poetry and painting," he truly says, "are twin sisters:" may he live to combine them with charity. APPREHENDO.

PROVINCIAL NEWS.

Chelmsford.—An ancient Roman foundation, composed principally of red brick tesselated pavement, has been discovered in Lord's Land nursery-ground, in this borough. Unfortunately some of the pavement was destroyed, but about 30 feet was preserved and carefully removed, and is intended to be presented to the Museum. Near the pavement several small Roman earthen vessels, and numerous fragments of larger ones, with amphoræ, were discovered.

Lincoln.—A commencement has been made here in clearing the ground for the erection of a new masonic hall in Grantham-street. It is said the high price asked for ground at the back of the building will lead to the bringing of this new structure forward close to the footpavement.

Oxford.—At the county sessions lately, it was stated that a plan had been submitted by Mr. Buckler for a new room for a committee-room, in extension of the south-western end of the hall, embracing at same time additional cells for prisoners awaiting trial, and increased accommodation in the basement for the public attending the assizes. The plan would involve an outlay of 1,000*l.*

Howden.—On Monday week a meeting of parishioners was convened in the vestry to consider estimates sent by Messrs. Weightman and Hadfield, architects, Sheffield, for the erection of a new roof over the nave of the parish church; and it was unanimously agreed that a new open roof should be erected according to the suggestion of the architects.

Baslow.—The church of Baslow was reopened on December 30th, having been restored in the Early English style of architecture from designs by Sir Joseph Paxton, the contractors being Mr. Watts, of Ashover; Mr. Savage, of Chesterfield; and Mr. Green, of Baslow. The principal alterations and additions are these:—A new chancel has been added, the unsightly plaster and inconvenient gallery have been removed, and the roof newly stained. The organ, improved by Mr. Foster, of Hull, has been transferred to the north-west aisle; and a stained-glass window has been put up in the chancel end. The church has been repewed throughout in the Gothic style, all the sittings being free, and a great number of additional ones put up. The chancel floor is paved by encaustic tiles, presented by Messrs. Minton and Co. A new vestry has been formed at the west end, and the bells improved. An entrance has been made into the belfry from the exterior of the tower. A warm-water apparatus has been erected; and pipes, obtained from Renishaw works, are laid throughout the church.

Macclesfield.—In excavating for an artificial lake at pleasure-grounds on the margin of Dane's Moss, the proprietor has discovered an ancient stone pavement, 5 feet from the surface, under peat or moss, upon a little gravel or fine sea sand. This pavement appears to be in good preservation, and evenly laid. The stones vary in size, and are similar in form to those common in our streets, but are of a white hard nature, and when broken are something like the spar stone of Derbyshire, but they are apparently of a different kind from any stone in the neighbourhood of Macclesfield. An extent of 50 feet is now uncovered, but the entire length and breadth are not at present known. A very large tree root has been found, with a small embankment around it, on which the pavement was laid. It is supposed that the pavement is of Roman origin.

Wolverhampton.—There is still, according to the local *Chronicle*, a considerable deficiency in the funds required for the erection of the proposed building for the school of practical art; but a fresh effort is shortly to be made by the committee. The design for the proposed building is now exhibited in the market-place. The style is Grecian and the order Corinthian. The principal façade is towards Darlington-street, and consists of a central recessed part with advanced wings. The entrance front is towards a new street leading from Darlington-street into Salop-street. The site which has been purchased for the purpose of this institution is on the south side of Darlington-street. The arrangements of the school will consist, on the ground floor of a committee-room and master's room on each side of the entrance; an elementary room, 43 feet by 26 feet; a modelling-room, 40 feet by 18 feet; and several closets. On the upper or one-pair floor a library and a painting-room over the committee-room and head master's room respectively, and a large room over the elementary room and modelling room for drawing from the antique, in which will be deposited the principal casts with which the school will be supplied. The room will be lighted entirely by skylights. All the other rooms used for art purposes will be lighted by plate-glass windows fixed and rendered air-tight, to prevent as much as possible the ingress of dust. For the same reason these rooms will have no fire-places. A provision, however, is made for warming and ventilating them by an apparatus. In the basement at the entrance end there is a house for a person to take charge of the building.

Colesborne.—The parish church at Colesborne, in Gloucestershire, was reopened for Divine service on Sunday, the 2nd inst. It consists of a nave, transepts, chancel, and a tower at the west end. The architecture of the greater portion of the church is of the Decorated period, but a later roof had been added, which has been replaced by a new open roof. The pew seats are of oak, with carved ends. The floor within the chancel is laid with Minton's encaustic tiles; and two stained-glass windows have been painted, one by Wailes and one by Willement: there is also a third window filled with the fragments of stained glass found in the old windows. Accommodation is provided for 200 persons, of which number nearly the whole are free. The restoration has been effected at the sole cost of Mr. J. H. Elwes, from designs by Mr. D. Brandon.

Liverpool.—The new Free Public Library is thronged daily by hundreds of well-conducted persons. In consequence of the number of magazines and other periodicals placed on the tables, of whose readers no account is taken, a small apparent decrease of the number from the first two or three weeks, which was 621 per day, has taken place, according to the local *Chronicle;* but the statistics up to Wednesday week (the 62nd day since opening) give a truly gratifying result, 32,995 books having been issued and returned in that period, which gives an average of 532 volumes per day, exclusive of the readers of the different periodicals.——St. Thomas's Schools are so filled, that a subscription has been opened for the erection of farther accommodation, at a cost of 1,500*l.*

Manchester.—The corporation have effected a loan of 350,000*l.* from the Bank of England, wherewith to pay the shareholders of the company from whom they bought the old waterworks. The corporation were paying at the rate of 5 per cent. for the money, but they effect a saving to the extent of 1 per cent. upon 200,000*l.* of the money borrowed, and 1½ per cent. upon the remaining 150,000*l.* The old waterworks' company had a meeting on Tuesday week, to consider what steps should be taken, the money having become due from the corporation, and that body having given notice that they were in a position to pay it on 1st instant. After some discussion, the corporation having absolute power to pay them off the money, the proceedings resulted in a series of resolutions to regulate the payment of the money, and to place the shareholders in a position to give the corporation a legal discharge upon its receipt. It was determined that the company should be formally dissolved on the 2nd May next.

Preston.—The baths and washhouses committee have issued a statement of accounts and report from the opening in May 1851, to 31st August last. The committee are "glad to find that the balance owing on revenue account (335*l.* 2s. 6d.) is not near so large as they had anticipated, a rate of about one halfpenny in the pound being all that will be required to clear off this debt." The statistics of the bathing department show that the operative classes, as originally intended, have been the chief recipients of the benefits of the establishment. After recommending several alterations, and throwing out some suggestions for more economical management, the committee conclude by expressing their belief that "the establishment will require little or no further assistance from the rates, but will prove as satisfactory in its financial results as it has hitherto been beneficial in its influence upon the health, habits, domestic comforts, and sanitary welfare of the population."

Haslingden.—On Wednesday in last week, the corner-stone of a new school, connected with the parish church at Haslingden, was laid by Mrs. Clegg, the wife of a gentleman who has given 800*l.* towards the erection of the building. The site borders on the churchyard. The design was entrusted to Mr. Holmes, of Bury. It is in the Early Decorated style, and comprises a boys' school, 56 feet long by 22 wide; a girls' school of the same dimensions; two lavatories, 12 feet by 9 each; with the usual conveniences. The walls are built of thin parpoints, and the dressings are boasted. The cost of the building, without boundary-walls, will be about 1,050*l.* Mr. Thomas Rothwell, of Haslingden, is the contractor for the excavation and masonry; Messrs. Fletcher, of Haslingden, for the wood-work, &c.; Mr. Richard Hargreaves, of Haslingden, for the plumbing and painting; Mr. Thomas Maxwell, of same place, clerk of the works.

Bilston.—The seventh annual general meeting of the shareholders of the local gas company was held on 3rd inst. when a profit of 1,345*l.* 7s. 9d. for the year was shown. The report recommended a dividend to be made of 6s. 6d. per share (being rather more than seven per cent. on the paid up capital), which dividends would amount to 1,300*l.* and leave a surplus of 45*l.* 7s. 9d. to be added to the reserve fund, making the amount of that fund 181*l.* 5s.

Elgin.—The erection of the south free church has been contracted for at an expense of about 1,600*l.* The contracting tradesmen were Messrs. John Lamb for the mason, John Mackenzie for the carpenter, Joseph Stewart for the plasterer, and John Gordon for the plumber works. The building, designed by Messrs. A. and W. Reid, architects, is of the Gothic order. It is to front Guildry-street, at the south end, and will have a spire 120 feet high. The church is to be seated for 800.

Inverness.—The contracts for the completion of the bridge works have now been transferred for resumption from Messrs. Hutchins and Co. to another English firm, who have recently been engaged in large transactions connected with the Portland docks in Dorsetshire. Some Inverness tradesmen are, it is said, to be employed under them in several of the departments. It is now four years since the former bridge was swept away by a flood in the river.

BUILDINGS ACT AND SEWERS The vestries of St. Marylebone and St. James's Westminster have arranged to send deputations in concert to the Chief Commissioner of Works and Buildings with reference to the Metropolitan Buildings Act, and to the Home Secretary with reference to the Commission of Sewers.

THE CRYSTAL PALACE AT SYDENHAM.—SKETCHES AFTER THE STORM.*





[* See page 33, in present number.

ARCHITECTURE AND THE PUBLIC.

Although not particularly complimentary to the profession, the article entitled "Architects and Architecture," in the December number of *Fraser's Magazine*, deserves their serious consideration. At least they ought to make a point of knowing what opinions, affecting both themselves and their art, are now put forth from time to time, in literary and general periodicals, and which, therefore, though ignored by themselves, are likely to make some impression on the public. Times are now greatly altered: formerly, that is, no longer back than twenty-five or thirty years ago, architecture was scarcely ever touched upon in any way, whereas now it is handled very familiarly even by penny-a-liners. It surely, then, behoves the profession to open their eyes to this fact; to observe watchfully what sort of doctrine and criticism is promulgated among the public; and either to expose it if it be unsound, or else comply with its demands, and so profit by it. At the present day, opinions which find their way among the many are not to be put down by merely *pooh-poohing* them. Be the taste of the public, too, ever so perverse or corrupt, architects must perforce comply with it, or else lose their practice; for, as is observed by the writer in *Fraser*, the public are their employers and paymasters; consequently will be either their capricious tyrants or their intelligent patrons, accordingly as they are ignorant of and indifferent to, or acquainted with, and capable of taking a rational interest in, architecture as one of the so-called fine arts. Nevertheless, and notwithstanding that it would be greatly to the advantage of both sides, also to that of the art itself, that there should be a kindly and generous feeling between the profession and the public, great pains appear to be taken to keep up just the reverse. While the public—at least those who may be supposed to represent it and express its sentiments—are continually sneering at architects and taunting them with incapacity, the latter are no less prodigal of taunts and censures upon the others; for, not a little strange to say, some of them have very invidiously, if not jealously also endeavoured to throw ridicule and odium upon the very few who, although not belonging to the profession, do study architecture with something of *con amore* feeling for it; and who

may therefore be considered tolerably competent judges of architecture as art. One professional writer, who sets up as an authority and influential teacher, has done so very pointedly,—yet whether with much ultimate advantage to himself may be questioned.

Now, how greatly better would it be for all parties, architecture itself included, if, instead of railing and talking *at* amateurs, critics and professional men were to talk and compare notes with each other, calmly, intelligently, and with sincere earnestness in the cause of what ought to be their common interest,—the advancement of the art on the broad basis of sound æsthetic principles.

Architects have erred no less unaccountably than egregiously in endeavouring as far as lay in their power to confine the study of their art to their own class, as if it would be either to their own disadvantage or that of their art were the public,—that is, those classes on whom the fine arts necessarily depend for employment and encouragement,—to acquire such insight into the *rationale* and principles of architecture as would render them competent judges of its productions. This error of theirs is so monstrous, so contrary to the common-sense and instructive policy which, in their worldly concerns, usually guide those who are otherwise more or less obtuse, that one would imagine it could have sprung up only in Laputa. The error, however, is not that of the present generation of architects, but a hereditary one transmitted to them by a long line of predecessors. Some of them, in fact, have become fully sensible of the hitherto prevailing mistake, and very willing to have it corrected.

That architecture is, as a fine art, at present the reverse of popular is undeniable. Even the *alma mater* of the arts of design, the Royal Academy, looks upon it only as an encumbrance, which, if it could do so, either legally or decently, it would gladly get rid of. The experiment of a separate annual exhibition of architectural designs and drawings, bears further testimony to the unpopularity of such productions of art. Trifling as the charge for admission was, the solitude in the rooms was generally such that it might be envied by the hermit beadle of Exeter 'Change. Nor was such desertion so much to be wondered at, perhaps, as to be regretted; for how can people be expected to relish what they do not even comprehend? Without the pale of professional students, very few persons even so much as understand, simple and easy to be understood as they are, the technical modes of architectural representation by means of plans, elevations, and sections.

In fact, the "intelligent public," as it is styled—sometimes, we might fancy, quite sneeringly and ironically—is little better than an ignoramus one in all that concerns architecture; and even as far as it affects to acknowledge its importance and its claims on patronage, it does so rather out of ostentation and for its own credit's sake, than out of genuine relish for, and judicious appreciation of the art. Of course, this opinion is only that of an individual. In giving utterance to it, I may lay myself open to contradiction—even flat contradiction: no matter:—let who like hurl at me the *flat*, I will—at any rate, I can—hurl at them the *sharp* in return.

Fraser, to which, if possible, I would gladly give the lie, reproaches the profession with having little or no feeling for their art; which disagreeable, if not also disgraceful fact, has been admitted by architectural writers themselves; certainly by all those who have contributed to the highly popular—certainly most extensively circulated series, known by the name of "Weale's Treatises." Whether the opinions conveyed through them proceed from Leeds, Talbot Bury, or Garbett, differ as they may in other respects, they are tolerably at one upon that point. Architects certainly do show themselves to be a very slow set: they neither do nor strive to keep pace with the advance that is being made in all branches of industrial and ornamental art. Those among them whose status in the profession, and whose experience, if not uniformly ability also, point them as the most proper persons to come forward and take the lead in any movement in behalf of architecture and its interests, are apt to hold back and keep aloof, with what looks very much like sulky and selfish indifference. They appear to scorn any manifestation of sympathy as derogatory from their own dignity. On the other hand, there is a great deal of activity, but it is such as to be of very questionable utility, since it seems to arise chiefly from the desire of display. Our attention is claimed for newly-hatched, unfledged theories, for dreamy, fantastical speculations, for crude and crotchetty notions, and for such arrant *nugæ difficiles* as the invisible curves of the Parthenon. The speakers or writers who favour us with that kind of instruction generally show themselves to be far more solicitous about words than meanings, so that brilliant as their language may be, their thoughts are, if not positively muddy, sometimes very muddily expressed. The ostentatious dallying with words, into which certain architectural writers have fallen of late, is no great proof either of earnestness on their part, or of any great capacity for instructing others. On the contrary, it looks very much like mystification and charlatanry. Z.

READING CORN EXCHANGE AND MARKETS COMPETITION.

THE town council held a special meeting on the 30th December last, to receive a report from a committee of the whole council upon the subject of the proposed corn-exchange, &c.; from which it appears that the committee, having determined that the plans for the proposed erections should be open to competition to the Profession resident in Reading only, caused advertisements to be inserted in the local newspapers offering a premium of 25*l.* for the best design, and for the second best, 10*l.*

Eleven designs were in consequence sent in; and the committee, anxious to avoid the suspicion of partiality, and desirous at the same time of being guided in their judgment by the skill and experience of some practical man on whom they could rely, called in the aid of an architect, the selection of whom was made by ballot, to give a decision upon them. This gentleman (Mr. John Wallen, of London), after a minute examination of the designs, which were sent to him in London unopened, attended the committee, and delivered his decision in writing. "He considered the best design to be decidedly the one bearing the motto 'Dum spiro spero,'" which, upon opening the sealed envelope containing the competitor's name, was found to have been sent in by Mr. Francis Hawkes, jun. architect, the borough surveyor; "and that he considered the second best to be one marked with a 'Staff and flag,'" which was found to have been sent in by Mr. J. B. Clacy, architect, the surveyor to the Local Board of Health. The committee accordingly awarded the premium of 25*l.* to the first, and 10*l.* to the second, and resolved to adopt Mr. Hawkes's design.

STREET PITFALLS AND STUMBLING-BLOCKS.

To increase the confusion resulting from the perpetual breaking up of our streets, the Electric Telegraph Companies are laying their wires under the pavements and over the vaults, so that we may expect an oft-recurring disturbance of the stones, on every occasion of disarrangement in the telegraphic system: the sewers, the water, and the gas mains have now superadded, to the corporeal disorders of London, a nervous system that bids fair to keep up a chronic fever.

Our cousins in New York simplify these matters by carrying their lines over the tops of houses: lifted on posts they extend through long street ranges and traverse the causeways without incommoding the traffic: raised high on posts, there is no interference with domesticism beyond the first elevation from chimney-stack to stack; this is *going a-head*. The thing seems to work well, and is set up at less than half cost, since there is no excavation nor displacement of flag-stones, neither is the expensive process of double and treble coating at all requisite.

Surely our Boards might try this select trick of saving both money to their shareholders, and reiterated trouble to the public.

The wires, as exposed along the lines of railway in England, sometimes exhibit a week's washing flickering in the breeze, and even printed bills suspended (in the station offices); but a municipal Act might make it penal for laundresses to hang out clothes on the lines above their domiciles: this would be as easily accomplished as the restraints on bill-stickers in favour of doors and fences: the laundresses might go to Wormwood Scrubs, and the bill-posters to the Pict's-wall, or façade of the National Gallery, in case that the hoarding at Westminster Palace should be removed before 1862.

JOB CONNECTICUT.

HOW TO IMPROVE MODERN CARVERS.

UNTIL architects and others can feel a preference for small quantities of carved decoration, treated with the talent and feeling for art which alone can make figure or foliage worthy of its name, to having their walls bespattered with the trashy stuff we are accustomed to see, in which the large quantity, and the insult offered to the perhaps sacred character of the building, are the only things likely to arrest attention, the Cannon-street collection of examples can serve but little purpose, save that of showing men of an emulative turn and artistic temperament the wide gulf between fine lecturing and hard practice.

Those very few members of the carving profession—perhaps I had better say *trade*—who can appreciate, and who could profit by a study of, the deep feeling for nature and art evinced in these casts, are rather badly placed when they are directed to them as examples of devotional art, and in the same breath are asked, "How cheap?" While the present system exists there is but little use in referring to the works which were produced under such widely different circumstances. As a means of cure, let architects order no more ornamental detail than the means at their disposal will *amply* pay for; and then, instead of the sculptor's chisel being handled as it now is, by men whom nature intended for clever masons and miners, we should soon have no cause to blush, as we now must, at a comparison of centuries, which is, in this respect, so fatal to our own. J. R. C.

PRESERVATION OF TIMBER.

INSTITUTION OF CIVIL ENGINEERS.

ON the 11th instant, Mr. Rendel, president, in the chair, the paper read was "On the Nature and Properties of Timber, with Notices of several Methods, now in use, for its Preservation from Decay," by Mr. Henry Potter Burt.

The author first examined the different species of home and foreign grown timber, their various properties, uses, tendencies to decay under certain circumstances, the most apparent causes of dry rot, the formation of fungi, and the action of wet and of heat; noticing the extraordinary duration of specimens of timber found in Egypt, in the ruins of Nineveh, and in the more recent monastic and castellated edifices of this country.

The chemical constitution of wood was examined, in order to trace the origin of decay, and to lead to the consideration of the most efficient means of arresting it. The necessity of some efficacious and yet moderately cheap system of preserving timber was insisted on, from the great demand for railway and other engineering works, not only in Europe, but even in the East Indies; where it was remarkable, that the wood which would resist the climate and the ravages of the white ant, was only to be found at such distances inland, that the expense of carriage, in a country devoid of good means of communication, rendered it more economical to buy fir timber in the north of Europe, convert it to the required dimensions, saturate it with creosote in England, and convey it by sea to India, for the use of the railway now in course of construction in that country.

The earliest record of preserving animal and vegetable substances were traced back to the Egyptians, whose mummies were embalmed by being boiled in pitch, found floating in the lakes: the linen and the timber so preserved

gave the first idea for adapting the process to the wants of the present period. Several of the patents granted were enumerated and commented on; the greatest space being devoted to those of

Kyan, for chloride of mercury;
Burnett, for chloride of zinc;
Margary, for acetate, or sulphate of copper;
Payne, for the use of two solutions in succession, mutually decomposing each other, and forming an insoluble substance in the pores of the wood;
And Bethell, for creosote, or oil of coal tar;—

Which last had, it was stated, by its extensive employment in harbour, railway, and other engineering works, proved, that when properly executed, the preservation of the timber from decay, and from the ravages of insects, might be considered complete.

The discussion was commenced, but was adjourned until Tuesday evening, January 18th, when, if the time permitted, the following paper was announced to be read,—"On the Construction of Fire-proof Buildings," by Mr. James Barrett.

THE PERIL OF PORTSMOUTH.

A SYSTEM OF NATIONAL DEFENCES.

Mr. Fergusson, the author of a recent pamphlet on "Our National Defences," is better known to our readers by his works on "Beauty in Art" than for his knowledge of military engineering. Nevertheless, the latter subject is one which has engaged his attention for some years, and he has already written a general work on it, in which he developes the capabilities of a new system of fortification, which has since not only excited much interest and attention amongst military men, but has been lectured on and advocated by the Military Professor of Fortification at the Royal Military College of Sandhurst,—Lieut.-col. Adams; a report of whose lectures, pointing out the defects of the present systems and the advantages of Mr. Fergusson's was published in the *United Service Gazette*.

The pamphlet alluded to* is based, of course, on the author's system. Its chief object is to direct attention to the importance and the method of rendering our naval arsenals and dockyards impregnable. Looking, as we do, to our navy as the main defence of our sea-girt land, the author remarks, that to our navy impregnable dockyards and arsenals are absolutely essential. All of them, therefore, but above all Portsmouth, ought, immediately, to be rendered impregnable if not so already; and that they are not so, he proceeds to show, and especially as to Portsmouth, which he appears to be of opinion, four or five first-rate screw steam-ships could take in a few minutes by sea, while it was at same time being also easily entered by land.

The system of fortification which the author recommends is that of earthwork in place of masonry, both on account of its greater power to withstand cannonading or other modes of attack, and its less liability to do mischief to its own defenders when struck and injured. As to expense, there can be no question of the advantage of earthwork: Mr. Fergusson estimates it at only a fourth part of the cost of masonry. The great feature of this system of earthwork fortification consists in the digging of military canals of great width and depth, and the casting up of the excavated material into terraces and ramparts, tier above tier, so as to constitute massive mounds on which no opposing force of cannon or mortar could produce any essential impression.

While treating lately of the screw propellor, we remarked the circumstance that we are indebted to China for that great naval improvement, and that probably we should soon too be indebted to it for improvements in the sails of ships. It is a no less curious fact, that we are indebted to India for this *new* system of fortification recommended by Mr. Fergusson, of whose Indian experience our readers are well aware, and who, in this pamphlet, favourably contrasts "the rude but efficient mud forts of India," with "the scientific but inefficient works of the modern French and German engineers."

To the establishment of even the strongest of mere defences, as the author remarks, no nation can any more justly complain or take offence, than can the honest or the peaceable at the bolting and barring of our dwellings; so that this is the least obnoxious way of assuring our enemies of the hopelessness of invasion. And certainly we have to consider not only our own opinion of its practicability, but how best to convince our enemies, *à priori*, of its impracticability; for it is needless to continue perpetually on the *qui vive* against the hopes and efforts of enemies,—inviting by exposition of weakness,—if we can, by additional defences, induce them to give up all idea of doing us even temporary mischief. It is very doubtful whether invasion be practicable even temporarily, under present circumstances; but at all events common prudence justifies us in insisting that our defences shall be put upon the best possible footing, and prepared for every contingency.

The substance of Mr. Fergusson's pamphlet is contained in the following recapitulation of his propositions:—

"Taking these propositions in the ratio of their importance, the first, of course, is an efficient and efficiently-manned navy. The next is, placing its principal arsenal, Portsmouth, in a perfect state of defence; and after that comes the necessity of securing the Medway dockyards and Plymouth from attack, and subsidiary to these, throwing up batteries and mud forts in the bays and places most liable to attack; and lastly, after these are done or determined upon, comes the question of an inland fort [for the Crown, bank, and other valuables], which is certainly important, but not so pressing.

The nation generally is so fully alive to the importance of an efficient and well-manned navy, that there can be little doubt but that these objects will be attained as far as practicable; but not being so fully awake to the fact that, without secured arsenals and dockyards, the most efficient fleet is nearly useless, it may be pleaded that but little apology is necessary for publishing a pamphlet to direct attention to that branch of the subject, especially as it is accompanied by an exposition of a mode by which the desired object may be cheaply and certainly attained.

Were the recommendation contained in the preceding pages carried out, we need no longer sit cowering before our enemy, weighing his words of war or peace, to guess whether he intended to punish us for our former successes, or would graciously be pleased to forbear, but we might boldly look the world in the face, and, neither giving nor taking offence—as free men, pursue the path of peaceful industry, which seems our proper and allotted task in the comity of nations to which we belong."

PROPOSED IMPROVEMENTS AT ASHFORD, KENT.

At Ashford Junction, as many of our readers know, the South-Eastern Railway Company have their locomotive workshops and depôt, and here, as at other locomotive stations, the town will necessarily extend. There are already many evidences of movement: houses are in demand, and are being built in several directions. In connection with this movement we would direct attention to an advertisement in our present number relative to the Henwood estate, a compact tract of land about forty-six acres in extent, belonging to Sir E. Cholmondely Dering, Bart. one of the members for the county, which commands singularly fine prospects, and has been laid out for building by Mr. Godwin, architect.

The houses are all to be detached or semi-detached, with the exception of two blocks in the high road, with an opening between them leading to the church. Each house will have about a quarter of an acre of ground, and is so placed as to command a prospect; and there is provision made for a collegiate school, and for some smaller houses in a convenient position. The market at Ashford is the best in the county: capital brick-earth and a good stone for walls are to be found on the estate. It is proposed, in the first instance, to take very small ground-rents, and it seems to offer a singularly good opening for energy and enterprize.

Water Supply for Berlin.—An English company have contracted to supply Berlin with water, erect two fountains, and clean the streets. We wish some Prussian company would do the like kind offices for London.

CHURCHWARDEN BUILDERS.

A correspondent complains that at a parish church in the eastern part of London "some alterations are being made (not under the direction of the churchwarden, but) *by* the churchwarden himself," and he asks whether it is right for an officer to have anything more to do with the work of the church than looking over it. The practice is very common, but is none the less wrong, and has been the cause of much injury to our churches. We remember one parish church, out of a score, where the stone mullions of the windows being decayed, and the churchwarden being a carpenter, he *restored* them with wood. Two or three years afterwards, the churchwarden being a plasterer, he abused the taste of his predecessors, and covered the deal mullions with compo.

SCRAPERS FOR THE NATIONAL GALLERY.

I was surprised in going over the National Gallery a short time back, to see the quantity of dirt on the floor. In fact, it was nearly as dirty as the street carriage-way, and the room was quite in a mist from the dust rising. I would recommend, in the new picture gallery, or place for the reception of works of art open to the public, now proposed to be built at Kensington, to have the entrance-lobby and outer hall laid with a fine iron grating, formed of plate iron, framed together, half an inch apart and 1½ or 2 inches deep, according to the bearing, the top edge filed, to act as a scraper, to cover the greater part of the principal walking-way approaching the exhibition-room; beyond which might be a large mat let into the floor. The iron grating or scraper would take off the greater part of the dirt collected, in walking through the streets in dirty weather. They should be made in parts, to take up; or hinged, for the purpose of taking out the dirt collected in the receptacle under them. The mat being used after passing the grating, would keep the room comparatively clean, and not as at present, which must injure many things, as well as give a deal of extra trouble in cleaning. At the entrance next the street at the tavern in the Strand, opposite Exeter Hall, I laid one which I made, and the benefit was very obvious. There is no inconvenience in walking on it. A notice-board might be put up, requesting visitors to use the scraper and mat.

H. K.

THE LATE STORMS, AND THE BUILDINGS INJURED.

The *Gateshead Observer*, in noticing the fall of the steeples at Middlesborough, Stockton, and Eighton-Banks, remarks, that "it is worthy of architectural consideration whether it is expedient to have vanes or weathercocks, with long iron shafts, at the summits of spires. In various instances the weathercock flew away in the wind, tearing off the stone in which it was roosting or rooting."——The parish church of Eskdalemuir, about fourteen miles from Langholm, Dumfriesshire, was struck by lightning, and the fabric, with the spire, was entirely destroyed. This is doubtless another of the many instances in which spires, unprotected by lightning-conductors, not only are exposed to injury or destruction from accidental strokes of lightning, but by their prominence or elevation actually attract and concentrate the force which is to strike them in their helpless want of "a way for the lightning" so attracted by them.——During the hurricane, the high chimney on Messrs. W. and J. Noake's salt works, at Droitwich, was so much injured that half of the structure must be taken down. The violence of the tornado was so tremendous that the middle of the chimney was completely twisted. This chimney is 135 feet high, and 72,000 bricks were used in its erection.——The windows of a large mill in course of erection at Preston not being filled in with their frames, the wind entered and threw down or blew up the whole structure of five stories high and fourteen bays in length. The roof was on and the floors were laid. The loss is estimated at 5,000*l.* or 6,000*l.* The East Lancashire Company's platform at the Preston station was quite destroyed. The corrugated iron roof, about 70 yards in length, and

* "The Peril of Portsmouth: French Fleets and English Ports." By James Fergusson, Esq. With a Plan. Murray, Albemarle street. 1852

many tons in weight, was torn off and shattered into pieces of all shapes and sizes. A tall factory chimney was blown down, and many private houses were reduced to ruins.——Elsewhere in the north-west of England the wreck of broken sea-walls, embankments, and piers, injured railways, &c. was very great. The Maryport lighthouse was demolished along with its pier.—— On the 18th, or seven days before, there was an extraordinary storm of wind on Lake Ontario, in the north of America. Can this have been the same storm? At Liverpool, on the 25th, it was noticed that the horizontal motion of the atmosphere, as shown by the anemometer, was about seventy miles an hour. Do not the distance of Lake Ontario, and the time, accord with this rate of movement?

RAILWAY MATTERS.

THE aggregate length of new railways opened during 1852 was, in England and Wales, 342 miles; in Scotland, 17½ miles; and in Ireland, 103 miles: total, 462½ miles. The lines opened in England and Wales were:—the Bangor and Carnarvon, 7 miles: Great Northern "Towns' line," 59½; Birmingham and Oxford Junction, 55½; Birmingham, Wolverhampton and Stour Valley, 13; London and South-Western, Alton branch, 9; Leeds Northern extension to Stockton, 29; Newport and Pontypool, 20; North and South-Western, 3½; North Staffordshire, branch to Ashbourn, 10; Oxford, Worcester, and Wolverhampton, Evesham to Dudley, 41½: South-Eastern, Robertsbridge to Hastings, 12; South Wales, at Chepstow-bridge, and Swansea to Carmarthen, 32½; St. Helen's branch to Garston Docks, 2; Shrewsbury and Hereford, Shrewsbury to Ludlow, 28; West Cornwall, Hayle to Penzance, 7½, and Redruth to Truro, 9, together 16½; Whitehaven and Furness, 1, at Whitehaven, Vale of Neath, 2½: total, 342 miles. The Scotch lines were:—the Morayshire, from Lossiemouth to Elgin, 6 miles; St. Andrew's, 4½; Stirling and Dunfermline, Alloa to Stirling, 7: total, 17½ miles. The Irish were:—Dublin and Belfast Junction, Wellington Inn to Portadown, 22¾ miles; Londonderry and Enniskillen, Strabane to Omagh, 20; Londonderry and Coleraine, Londonderry to Newtownlimvady, 18¾; Waterford and Kilkenny, Jerpoint to Dunkitt, 16½; Waterford and Limerick, Tipperary to Clonmel, 25: total, 103 miles.

At a coroner's inquiry on the body of a man killed by a recent railway accident, Mr. Wakley said it was a remarkable fact, that, notwithstanding the millions of travellers who had passed over the North-Western and the Great Western lines in Middlesex, during the twelve years he had been coroner, he had never held an inquest on the body of a *first-class* passenger. The coroner expressed a wish that the company would introduce cushions inside the second and third class carriages, be they ever so rough, as it would furnish protection to passengers in case of collision. "First-class passengers," he remarked, "escaped in consequence of their heads coming in contact with soft cushions, but in a second or third class, unless a man had a skull of extraordinary thickness, it was not likely he could stand collision with oak." Now, why should not second and third class passengers be as *safely* conveyed as those of the first class? Cushions are not wanting in second and third class carriages from their mere unavoidable expense: very cheap and yet efficient cushions might easily be added: horse-hair and morocco leather, or silk damask, are by no means essential. What can the motive be, then, which induces railway directors to deprive second and third class carriages of cushions? Are we to understand that they positively imperil the lives of the main mass of the people merely for their own gain,—or to compel the public to pay more than they can afford, in order to avoid the positive risk of getting their skulls split? As well might second and third class carriages be made with rubbishy wheel-tires, or without springs, or be dragged along like hurdles without wheels at all, in order to jolt the contents into first-class carriages, as deprive the second and third class "traffic" of what is essential to safe conveyance. The people are assuredly much obliged to railway directors for the respect thus paid to their safety and their lives. The blood-money, however, had better be expended in providing those cushions which an experienced coroner has shown to be essential to the safe conveyance of the public in the public carriages. The recent wholesale smash affords a significant corollary on Mr. Wakley's experience in this respect as a coroner.

It is suggested, in the columns of a contemporary, that the dreadful results of collisions might be obviated by having fenders of wool packed in gutta percha in advance of the engine: springs, it, is added, might also be introduced behind the woolpacks.

A new method of manufacturing railway carriages has been patented by Mr. C. Arnoux, of Paris. He proposes to mount the bodies on frames constructed similarly to those of carriages for common roads; the axles being capable of shifting with respect to each other, instead of being fixed in parallel positions. He claims—1. The mode of constructing railway vehicles, by which they can be directed on the rails without coercion or undue resistance, whatever may be the train. 2. The setting railway vehicles on two axletrees, and the turning the axletrees at discretion in chairs, to facilitate the traction and avoid the axletrees clutching. 3. The jointing the fore and hind axletrees of vehicles on railways. 4. The grinding the axletrees of vehicles on railways.

Mr. Peto's railway plan for North and South Jutland, says a Copenhagen letter, has now been officially communicated on his behalf by Justice Councillor C. M. Poulsen. This gentleman addressed the Jutland members of the Lower House on the subject in a private meeting. He has since presented Mr. Peto's formal petition for the concession to his Danish Majesty, and the Government will doubtless bring the necessary Bill before the Parliament. The line will go from Flensborg to Frederickshavn, crossing the Limfjord, by a bridge about 1,700 feet long. The total expense of the whole line is calculated at 3,000,000*l.* sterling. No guarantee will be asked for the general line; but for that part running from Viborg to Frederickshavn, inclusive of the costly bridge, the amount for which portion is calculated at about 800,000*l.* a state guarantee of 4 per cent. for a certain time—about twenty-two to twenty-five years—will be looked for. The Swedish papers lay great stress on this undertaking, and point out its immense importance for communication and traffic to Sweden, Norway, Finland, and Russia. When this railway is finished, and that between Stockholm and Gottemburg is completed, which must be the case in a few years, a traveller from Stockholm may reach Hamburg in twenty-four hours.

The average cost of railways in the United States has been found to be about 25,000 dollars per mile.

ELECTRO-TELEGRAPHIC PROGRESS.

THE extent of telegraphic communication, completed and in operation throughout the world, at the beginning of the present year, has been estimated at nearly 40,000 miles. Of this amount there were nearly 4,000 miles in Great Britain, of which 100 miles only were under ground, with about 400 or 500 in course of construction in England, Scotland, and Ireland, and as many more projected. In America there were 20,000 miles completed and in operation, with 10,000 more in process of construction. Russia has just commenced her system of telegraphs between St. Petersburgh, Moscow, and Cracow, and the ports of the Baltic and Black Seas. About 4,000 miles are about to be constructed in India. The only unsupplied portions that will soon present themselves on a telegraphic map of the world will be Australia, Africa, and China.——Contractors have commenced operations for laying down an underground telegraph from Cornhill to Liverpool, Manchester, and Birmingham, along the old coach road; and the line, when completed, will place these towns in immediate communication with the continent, besides furnishing a duplicate line of telegraphic communication with the metropolis.——The Danish submarine cable, 13 miles long, that was to be sunk across the Great Belt to Nyburg, has, it is said, failed in its manufacture.——The negotiations between Austria and Russia relative to the junction of their telegraphic lines are nearly terminated. The Russian line is to be taken from St. Petersburgh. The junction is to be effected on the frontiers of Gallicia by a special line, which is not to be connected with the German telegraphs.—— One of the projects for a telegraph between the continents of America and Europe seems to have been further elaborated. It is proposed to commence at the most northwardly point of Scotland, run thence to the Orkney Islands, and thence by short water lines to the Shetland and Faroe; thence, by a water line of 200 to 300 miles, to Iceland; from the western coast of Iceland to Kioge Bay, on the eastern coast of Greenland; crossing Greenland to Juliana's Hope, in 60° 42′, and thence by a water line of about 500 miles across Davis' Straits to Byron's Bay, on the coast of Labrador. From this point the line to be extended to Quebec. The entire length is estimated at 2,500 miles, the submarine portions at from 1,400 to 1,600 miles. From the Shetland Islands it is proposed to carry a branch to Bergen, in Norway, connecting it there with a line to Christiana, Stockholm, Gottenburg, and Copenhagen; from Stockholm a line to cross the Gulf of Bothnia to St. Petersburg. The whole expense of this great international work is estimated considerably below 500,000*l.* One rather grave objection to the practicability of this project we have already stated, namely, that it *crosses* more than one route traversed by icebergs, which often rake the ground even at great depths, and would inevitably destroy the wires, once at least, if not oftener, during almost every summer.—— The laying down of the first sub-marine cable in America, and which is ultimately intended to connect it with Europe, has just been successfully completed. The cable which forms the first section of the Newfoundland Electric Telegraph Works has been sunk between Cape Tormentine, in the province of New Brunswick, and Carlton Head, on Prince Edward's Island.

PARKS FOR THE PEOPLE.

THAT portion of London comprised in a parallelogram, in width from Islington to Camberwell, and in length from Paddington to Limehouse, may be said to contain 50 square miles: about two-thirds of the population are lodged within these limits: beyond them the intervals between streets and rows of houses are wider, and the residents being nearer to the open fields have the advantage of better air, with greater scope for healthful recreation.

Within the urban precincts, one full third part is covered with houses, the remaining two-thirds being pretty equally divided between causeways and curtilages: as for gardens or grounds for exercise, not one dwelling in a hundred possesses them. This limitation is, however, greatly mitigated by the parks and the few open spaces reserved in bygone ages for the great commercial city.

With the spread of buildings further reserves of open space have become indispensable, and care has been taken to plan out parks for coming generations.

Long-promised parks are held out in prospect. Victoria-park on the eastern excrescence has been inclosed, and in a manner laid out: little, however, can be said in praise of its plantation or finish. Battersea, on the western limb, has been attained, but has lain for years in rude desolation: the latter, although also a low situation, has the advantage of easy access by river, besides that the vicinal heights, together with the water scenery, adapt it more peculiarly for landscape gardening. It appears that 150,000*l.* were bestowed upon the purchase of ground, and yet no effort has been made to convert the acquisition for public uses. The orgies of debauch are carried on there with impunity, whilst being without a *garde champêtre*, or (stranger still for so large a tract) without a *salaried ranger*, the security of any wanderer over the profitless waste is endangered by pigeon-shooting, larking, or rifle practice.

To make amends for the inauspicious stagnation in these wide reserves, there is in a position more under public view, and probably more proximate to the convenience of some official parties, a singular evidence of activity observ-

able. At Kensington, the open green (or rather russet) space of 14 acres has been enclosed with iron railings, laid out, and planted, at a cost of 7,000*l*. Now, that sum of money expended in the planting and formation of the lately-acquired parks would have done wonders; moreover, several years' growth of trees and shrubs would have, by this time, improved the land in drainage, and matured the tribute of pleasure now to be derived from the countless flowering varieties that enrich our nurseries.

The crowds that frequent the only flower and shrub walk London can boast of (in Kensington-gardens) sufficiently attest the attractive influence of floriculture: in fact, it has become an infant school for the instruction of the rising generation, and its sedative effects on the man of business who deviates from his course to enjoy the scene is often acknowledged: the saunterer or valetudinarian, too, who has no private pleasure garden, has good reason to feel grateful to those whose benevolence and taste suggested this really odorous boon.

It might be vain *again* to point out the singular appropriateness of the inclosure within Hyde-park for a small outlay on shrubs and flowers, if that blot or cancer in its very heart were, as it ought to be, *dedicated to the public*: at present an old house (rarely occupied) perpetrates the fiction of a resident sub-ranger: another blank is the shapeless hovel barrack (for a light troop) which defiles the point of junction with the gardens at Kensington: the *stack-yard* and guardhouse need not be mentioned.

Some liberality, with a little good taste, would take little from the Woods and Forests' exchequer: some of the surplus income would bring back a large return in popularity.

St. James's-park should also be cited as an evidence of good taste, and as a concession of inestimable value to the public: its shrubs and flowers, with the general arrangement, do reflect credit on the authorities who had it laid out.

Regent's-park for some years has been extremely well kept and much improved under the superintendence of a practical and superior horticulturist: he has, however, been displaced before he had the power (often solicited, but never conceded to him) of planting Primrose-hill: neither could he obtain for the inhabitants of Portland-town an access over the canal bridge to the park, which is fenced off for half a mile (along the canal), and leased to a favourite. The disgraceful condition of Hyde-park, devoid of ornament, may be more congenial to salaried sinecurists, as somnolence in office may be a better security for biding tenure. QUONDAM.

Notices of Books.

ILLUSTRATED EDITION.

Childe Harold's Pilgrimage. By Lord BYRON. London: Murray, 1853.

Messrs. Creswick, Cockerell, Warren, Howse, Aylmer, and Sir Charles Fellowes have contributed thirty-two drawings, some of them very charming, to illustrate the wonderful "Romaunt" of the wandering, wayward Childe, a poem which will last as long as the English language is spoken, and much longer than some of the countries which it so vividly paints. Though the scenes of earthly grandeur and earthly decay, therein touched with light, should disappear,—

> "Though all were o'er,
> For us re-peopled were the solitary shore."

Amongst the best of the views in the book are Delphi, Mafra, Cadiz, Ehrenbreitstein, Venice, Lake Albano, and the Drachenfels. What a bright day there does the last recall to our memory. It is a brilliant morning in early summer, and we gaze from the "castled craig" over miles and miles of country, through which runs the sinuous Rhine, transformed by the sun into a glittering stream of silver. You may hear the tinkling bell of the church in Königswinter at the foot of the mountain, the air is so still. Before us, cradled in the "exulting and abounding river," lies Nonnenwerth (the Nun's Island), and on the opposite side rises Rolandseck,—with its ruined arch and its romantic story,—while, farther behind, are Bonn and Godesberg. It is indeed,—

> "A blending of all beauties; streams and dells,
> Fruit, foliage, craig, wood, cornfield, mountain, vine,
> And chiefless castles breathing stern farewells
> From grey but leafy walls, where ruin greenly dwells."

How pure is the air, how free are the spirits, and how buoyant the feeling! Thanks, pleasant book, for a summery recollection in spite of the rain outside.

Natural Principles of Beauty. By D. R. HAY, F.R.S.E. Edinburgh and London: Blackwood, 1852.

THE treatise just now published by Mr. Hay, is put forth as complementary to his previous works, setting forth his theory of the Beautiful in Form. The author considers that a certain and definite law of proportion, common to architecture as well as to sculpture, may be found fully developed in the human figure. He maintains that certain "harmonious angles" give the key so long fruitlessly sought for, of the correct proportions of the human frame, both male and female, and he inserts measurements of ordinary nature, to show how closely the proportions agree with those of his theoretical figure. He maintains, with truth, that the investigations he details assist in proving "that harmony and simplicity constitute the beauty of creation, and not only show that the noblest work of creation responds perfectly to this test of its proportions, but prove that He who moulded external nature placed in the mind of man the power to judge of His work, and discriminate amongst the various degrees of beauty it developes."

The Modern Housewife, or Ménagère. By ALEXIS SOYER. New edition. London: Simpkin and Marshall, 1853.

SOYER's efforts to improve the living of the poor (how much this is needed it needs no great exploration to discover) have given him a claim on us that we have before now acknowledged, and which leads us to mention the new edition of his "Modern Housewife," just now published, wherein he has ungallantly, but not without a purpose, reduced his heroine, Hortense, to a cottage and straitened circumstances. The object is evident, and the author makes the most of it. "Homes" are our province, and we do believe that a little attention to cookery on the part of those whose province it is to adorn and sanctify a home, may be usefully advocated. Those whose proper sphere is the drawing-room should not *always* be above the kitchen, but should dive into its recesses, and master its mysteries. Some of our lady readers will be indignant with us, perhaps, for the remark, and fancy that they have found in us the author of a recent poetical encomium on woman, which runs thus:—

> "A cure for every mortal bane,
> The polish'd link in beauty's chain;
> A paragon that hath a charm
> Man's fiercest passions to disarm;
> Her voice to him is like the dove,
> For him she weaves the web of love,
> For him her prayer to Heaven ascends;
> His manners and his shirts she mends."

We will put up with the reproach if they will adopt the hint. As a companion in their basemental expeditions they will find Hortense a valuable guide. She is a little affected and nonsensical at times, which of us is not? but is nevertheless well-informed, intelligent, and kind-hearted. She will prove a powerful ally in our war against "muddle."

FIRES IN LONDON.—A report shows that from 1st January, 1852, upwards of 1,000 fires have occurred in and near the metropolis. The loss of property is roughly estimated at about 2,000,000*l*.

LEEDS TOWN-HALL COMPETITION.—Sixteen sets of drawings were sent in. The successful competitors are,—first prize, of 200*l*. to the design of Mr. Broderich, of Hull; second prize, of 100*l*. to Lockwood and Mason, of Bradford; third prize, of 50*l*. to Messrs. Lovett and Co. of Wolverhampton. The committee were guided in awarding the premiums by Sir Charles Barry; and no one seems to doubt that the *best* design has been selected for the first prize; but very great doubt, indeed, has been manifested by professional, as well as non-professional, men, and by builders of eminence also, whether the building can be erected and completed for the sum of 35,000*l*. the amount stipulated by the town-council to be expended.

Miscellanea.

LITERARY AND ARTISTIC BANQUET AT BIRMINGHAM.—On Thursday in last week, a banquet in connection with the Literary and Artistic Institutions of Birmingham, took place in the assembly-rooms of Dee's Hotel there. The banquet originated in a combined movement on the part of the Society of Artists, the Fine Arts Prize Fund Association, and the Society of Arts and School of Design, together with those generally interested in literary and artistic matters in the town. Previous, and as a preliminary to the banquet, a meeting was held in the rooms of the Society of Artists for the purpose of presenting Mr. C. Dickens with a diamond ring and salver. At Dee's Hotel 200 gentlemen sat down to dinner, and afterwards a numerous party of ladies were admitted to the orchestra. The chair was occupied by Mr. H. Hawkes, the mayor of Birmingham; vice-president, Mr. P. Hollins. Among the company present were Lord Lyttelton, Sir C. L. Eastlake, P.R.A. and various Royal Academicians, Mr. C. Dickens, Archdeacon Sandford, several members of Parliament, clergymen, and others. Sir C. L. Eastlake, in course of his speech, said, that among other recommendations, one certain, and by no means unimportant, consequence of familiarity with good works of art, was to induce a reference to their sources, to awaken a more intelligent attention to nature, and stimulate a desire for its imitation. In this view works of art might be regarded as an introduction both to nature and to books. The exhibition of master works of sculpture must, he conceived, be in that town especially desirable. Besides contributing to the results to which he had alluded, such works reminded them that no beauty in the mere material could exempt the artist from aiming at the higher beauty of form and arrangement. The skill of a certain class of artists might hereafter be called into requisition in a greater degree than now, from the increased use, for decorative purposes, of the most precious of metals in consequence of its actual and promised abundance. He trusted that in that case the beauty and splendour of the material which it was the duty of the artist to display would not supersede the exercise of taste in its elaboration.

FRENCH SCREW LINE-OF-BATTLE SHIPS.—That the amalgamated engineers who emigrated to France have *patriotically* lent a lift to French steam-engine manufacture appears to be pretty plain. The following from the *Phare de la Loire* will recommend itself to the attention of the new Board of Admiralty:—"For some time past the establishment of Indret has been manufacturing steam-engines for vessels in different ports. One has been sent to Lorient for the *Jean Bart*, and one to Cherbourg for the *Marceau*. At this moment, also, experiments are making on the *Montebello*, at Toulon, with an engine of 160-horse power from Indret, intended as an auxiliary for first-class sailing-ships, to leave port without the necessity of being towed. An engine of 450-horse power is about to leave Indret for the *Austerlitz*, at Cherbourg. In construction there is one of 400-horse power for the *Assas*, which is building at Rochfort; one of 650-horse power for the *Ulm*, which is building at the same port, and one of 400-horse power for the *Phlégéton*, which is building at Cherbourg. To these we must add a machine of 1,200-horse power which the Minister of Marine has just ordered for the *Bretagne*, which is to be built at Brest."

NEW PATENT LAW.—The attention of the Commissioners of Patents has been called to the anomalous operation of the old and new patent laws. According to existing arrangements, some 500 patents, applied for in October, will in many cases take precedence in point of patent-right over a number of patents applied for in September, because those under the new law date from the granting of the provisional protection, while those under the old only date from the passing of the great seal, and in cases of similarity of invention the inconvenience is obvious. The commissioners have intimated that they cannot interfere.

LIVERPOOL POLYTECHNIC SOCIETY.—FLEXIBLE BREAKWATERS.—The annual meeting of this society was held on Monday week, at the Royal Institution. Mr. W. H. Smith read a paper on his new system of recoil harbours of shelter and defence. We have already given some account of this new kind of breakwater. A small harbour on the improved principle, said the reader, would be formed of a series of independent open frames or gratings of wood or iron, and be of sufficient depth and capacity to shelter a dozen large ships, at a cost of 8,000*l*. the same as would in stone involve an outlay of about 200,000*l*. The principle of the invention was that of nature, where yielding is the universal law, the only mode by which the weaker body can be made to withstand the stronger.

ABERYSTWITH HARBOUR.—The pier and its parapet wall have been considerably damaged, the pier breached almost through in two places, by the lash of the waves during the late hurricane, and the whole now presents a very dilapidated appearance.

RAT-CATCHING EXTRAORDINARY.—Two men were lately brought before Sir C. Marshall, at the Guildhall, London, on the charge of being found unlawfully in the city sewers. The police-constable who took them into custody said he found on them eighteen live rats and a key with which they opened the gratings. Sir C. Marshall inquired how the prisoners got their living, when Gardiner said that he was a master-rat-catcher, and that Jack was his assistant. Sir C. Marshall.—But what business had you underground, damaging the sewers? Gardiner.—We catches no end of rats there, sir, and when once we gets into the sewers we keeps on running and catches the rats as we goes, and we sometimes gets fifty in an hour, as they run up the arches overhead, and sells 'em for 2s. a dozen. We got in at the Custom House, and worked our way all round Whitechapel and from there to Cornhill. I can find my way all over London through the sewers. I've been at it for years, but my assistant, Jack, has only been nine months in the line. Sir C. Marshall.—What are the rats required for? Gardiner—Why, your honour, them sporting gents at the west end pays 6d. a piece for live rats, and that's why we goes into the sewers and catches them. We often meet the men belonging to the commissioners in the sewers, but they never interferes with us as long as we don't do no injury to the walls. Sir C. Marshall said, as the commissioners of sewers or their men did not complain of, or interfere with, the prisoners in their extraordinary occupation, he should not do so, and therefore discharged them. "Them sporting gents" are of some use after all: in their association with the "master rat-catcher" and his assistants they rid the community of noxious and troublesome vermin.

MR. WOODIN'S CARPET-BAG AND SKETCH-BOOK.—Without any *prestige*, Mr. Woodin came before the public with an entertainment under this title, at the Marionette Theatre, in Adelaide-street, Strand, and by the force of his ability alone has made a success. The theatre is full every night, and will, we have no doubt, continue to be so for some time to come. His personations are admirable, whether of women or men, English or Scotch, and the whole is, moreover, put forth in a modest and unpretending manner, that would insure consideration for a much less clever and amusing entertainment.

DRAINAGE OF GREAT YARMOUTH.—In a pamphlet, titled "Suggestions for an Economical Drainage of the District of the Great Yarmouth Local Board of Health," Mr. Cory, clerk to the board, suggests that the cost of drainage might be defrayed by leasing the drainage-works to a company, granting that company, at same time and on a similar lease, the cultivable part of the North Commons for experimental irrigation. The outlay, Mr. Cory points out, might thus be defrayed in forty years, without any burden on the ratepayers. Such a company as that alluded to, he says, could be easily formed.

METROPOLITAN COMMISSION OF SEWERS.—At a general court held on 4th inst. after some attention given to the want of drainage and the prevalence of fever in Bethnal-green, from which it appears that nothing can be done till the plan for the main drainage of the metropolis be undertaken, Major Dawson brought under notice the financial statement of the commission, for which he had moved some months since. The commissioners desire to have this statement as fully published as possible. The following is the substance of the document, being an estimate of the amount of available balance for extraordinary works in the several districts for the ensuing year, after providing for the current ordinary expenditure of the commission:—Present state of the funds for the whole districts: credit, 3,351*l.* 19s. 4d.; debt, 58,991*l.* 16s. 8d.; leaving a debt of 55,639*l.* 17s. 4d. Amount derivable from uncollected rates, 19,540*l.* Available balance, after taking credit for amount to be derived from out-standing rates now in collection:—Credit, 13,871*l.* 19s. 4d.; debt, 49,971*l.* 16s. 8d.; leaving a debt of 36,099*l.* 17s. 4d. Amount to be raised by new rates, 181,230*l.* Available balance, after making new rates:—Credit, 146,543*l.* 9s. 6d.; debt, 1,413*l.* 6s. 10d.; leaving a credit of 145,130*l.* 2s. 8d. Amount of ordinary expenditure per annum, 48,466*l.* 6s. 5d. Available balance for extraordinary works:—Credit, 101,242*l.* 19s. 9d.; debt, 4,579*l.* 3s. 6d.; leaving a balance for extraordinary works of 96,663*l.* 13s. 3d. The above statement does not embrace the following liabilities: Permanent loans, 80,423*l.*; claim for ordnance survey, 24,212*l.* 17s. 5d.; making a total liability of 104,635*l.* 17s. 5d.

THE CEMENT OF THE PYRAMIDS.—Notwithstanding the numerous patents for cements, and other contrivances for excluding moisture from dwelling-houses, we daily hear complaints of damp walls. The exterior of the great Pyramids, near Cairo, are coated with a varnished cement, which has lasted for thousands of years, and is as perfect and glossy as the day it was placed there: if a small portion were examined by competent persons, its composition might be ascertained, and be useful in our humid climate.—W.

ELEMENTARY DRAWING A BRANCH OF NATIONAL EDUCATION.—A circular has recently been issued from the Committee of Council on Education to the authorities of the several training-schools under inspection, calling their attention to the steps which have been taken towards organising local means of instruction in drawing, as part of elementary education. The committee remark, that the training-schools for masters and mistresses are the points at which the most effectual impetus can be given to the promotion of the object in view; and no intention is announced of causing an inspection to take place into the system of drawing pursued in these training-schools. One of the results contemplated is, that evidence of a certain proficiency in drawing should be afforded by each student on account of whose examination the training-school receives a grant; and, sooner or later, it might be regarded as improper to sanction the apprenticeship of pupil teachers to masters or mistresses who had neglected to profit by the means now to be made available for acquiring a practical knowledge of elementary drawing. The committee emphatically record it as their opinion that the power of accurately delineating the forms of objects ought no longer to be regarded as an accomplishment only, or the result of some rare natural aptitude, but as an essential part of education. This circular was issued before the late change of ministry, but there is said to be no doubt that the intention will be fully carried out under the present Government.

PATENTS COMPLETED UNDER THE NEW LAW.—J. Macdonnell, Temple-mead, Bristol—Construction of railways; W. Crosskill, Beverly—Machines for cutting or reaping growing corn, clover, and grass; W. A. Gilbee, South-street, Finsbury—Disinfecting putrified and fecal matters, and converting fecal matters into manure, also applicable to disinfection of cesspools, drains, &c.; W. Chisholm, Holloway—Purification of gas, and the obtention of certain products during purification; A. Slate, Dudley—Manufacture and construction of cores and core-bars, used in production of hollow castings in iron and other metals; W. Clarke, Manchester—Joints for connecting metals; R. Mallet, Dublin—Fire-proof and other buildings and structures; W. T. Healey, St. John-street-road—Electric telegraphs; R. W. Parker, Roxbury—Giving rotatory motion to a shaft of a circular saw or other mechanical contrivance; A. Kent, Chichester—Glazing; J. Hopkinson, Huddersfield—Steam-boilers; W. B. Johnson, Manchester—Stationary steam-engines; J. Sinclair, Stirling—Engines to be worked by steam, air, or water, the said improvements being also applicable to pumps; F. Fife, Newcastle-upon-Tyne—Steam and water ganges.

WAGES IN AUSTRALIA.—The profits at the diggings regulate the rate of wages elsewhere in the colony, and that rate is high at Sydney—twice as high at Melbourne. The *Sydney Shipping Gazette* states that the rates of wages per week are—For carpenters, 50s. and 60s.; ship carpenters, 72s.; masons, 50s. to 55s.; wheelwrights and dray builders, 120s. to 200s. That is on piece-work; for the following are the wages paid per day:—Stonemasons, 8s. to 8s. 6d.; carpenters and joiners, 7s. to 9s.; bricklayers, 8s. to 8s. 6d.; masons' and bricklayers' labourers, 7s.; common spadesmen, and other inferior building labourers, 5s. to 6s.; plasterers, 8s. to 9s.; painters and glaziers, 8s. 6d. to 9s.; foremen and overseers of buildings, 10s. 6d. to 15s.; sawyers—12s per 100 feet, superficial, soft wood; carters and draymen, per day, 15s. to 20s.; brassfounders, 9s. to 12s.; engineers and millwrights, 10s. to 15s.; ironfounders, 9s. 6d. to 10s.; shipwrights, 12s. 6d. to 15s.; blacksmiths, 9s. to 10s.; wheelwrights, 10s. 6d. to 12s.; coopers, piece-work, averaging 10s. 6d.; cabinet-makers, 10s. 6d. to 12s.; upholsterers, 8s. 6d. to 10s.

THE PENNY HOTELS OF CARLISLE.—In a recent number of *Lloyd's Weekly Newspaper*, now edited by Mr. Douglas Jerrold, is a paper signed "Hard-fist," written, the *Carlisle Journal* believes, by his son, Mr. W. B. Jerrold, in which a few scenes in the low lodging-houses at Carlisle are pathetically, as well as humorously, sketched. There are no less than thirty of these "twopenny hotels," as "Hard-fist" calls them, in this small cathedral town. They can accommodate altogether between 400 and 500 travellers. The present police superintendent who had gained previous experience in the metropolitan force, is said to have got all these houses fairly under control. They are well ventilated, clean, and not over-crowded. "The police," says the writer, "visit them at all times of the night; and, by kindly treatment, the superintendent has so won over the landlords, that they are always on his side when he is in search of an offender. 'Within the last thirteen weeks,' said the superintendent, 'no less than 11,000 vagrants have passed through this little town.' Hapless lot—the good and the bad—the unfortunate and the wilfully sinful—all jostled together, and breeding moral pestilence for one another. How may this be mended?"

SURVEY OF MARCH.—LOCAL BOARD OF HEALTH.—The survey and plans of this town have been completed and sanctioned by the General and Local Boards of Health. They contain all levels and other data required for carrying out the application of the Public Health Act, the provisions of which are much needed there. The plans consist of two finished maps, one drawn on twenty-four sheets of double elephant, to a scale of ten feet to one inch, and the other exhibiting on one sheet the whole area surveyed to a scale of two feet to a mile, thus serving as an index to the separate sheets. Mr. Austin, engineer in chief of the General Board, in his report recommending the use of these plans in carrying out the works under the Public Health Act, says:—"This survey has been executed by Messrs. Marshall and Tuthill, of Westminster. The plans have been drawn on both the prescribed scales, and are in accordance with the specimen plans of the General Board. They have been executed with great care and neatness, and are in this respect very creditable to the surveyors."

RATING THE GREAT WESTERN RAILWAY.—The award of the arbitrator as to the rateable value of this company's line, so long the subject of contest, has just been made. The assessment by the parishes was at an assumed rateable value of 600*l.* for each mile of railway. The arbitrator, we are told, has now declared that the rateable value in the parishes of Contes, Bisley, and Sapperton, ought to have been at 25*l.* per mile only; in Minchinhampton, at 55*l.* per mile; in Rodborough and Stroud, at 135*l.* per mile; and in Painswick and Stonehouse, at 175*l.* instead of 600*l.* per mile.

THE PROPOSED NEW LITERARY AND SCIENTIFIC SOCIETY AT BIRMINGHAM.—This new educational institution, according to the local *Journal*, will form a sort of college for the working classes, be in some respects free to all, and be in no respect exclusive or sectional in its character. It is intended that the society shall organise measures for securing the erection, by subscription, of a spacious building. In this it is proposed to provide a lecture theatre, with seats only on the floor in the first instance, but capable of admitting of the construction of a gallery, should such an addition, at any subsequent period, be found necessary or desirable. The plan will likewise embrace three museums, the first of which will be devoted to the raw materials of the industry of this district, geological and mineralogical specimens, &c.; the second to articles illustrative of manufacturing processes, as well as to finished specimens of different dates and countries; and the third to machinery and models. The other features of the scheme comprise a chemical laboratory for lectures and classes; class-rooms: a reading-room, with a scientific and general library of reference: and as an entrance to all the departments, a large hall adapted for the reception of sculpture or other works of art. Another department will be devoted to mining records.

TO CORRESPONDENTS.

"An Old Subscriber," the unsuccessful competitors under such circumstances, and looking to the "printed instructions," would not be able to enforce payment). "Constant Reader." "H. P." "J. L." "G. G." shall be returned). "A. W. F." shall be read to-day. "P. R." "J. R. C." "J. F." "T. R." "G. T." "W. C." "Clogs." "Mr. P." "F. H." "W. H. J." "W. ." "W. W." "M. and D." "H. D. C." "A. F. M." (shall have further information). "J. J." (shall appear). "C. and Son." "P. S." "T. G. W." "A. Z." we are unable to advise. With such acquirements as "A. Z." mentions, he ought not to have any occasion to leave this country). "Foreman of Engineers" (apply at Marlborough House for information). "Subscriber." Buck 'ook is any "Tutor's Assistant"). "R. W. A." (under the circumstances, the perspectives may be justly reclaimed by the architect). "W. P." used in present number). "H. W."

ADVERTISEMENTS.

REMOVAL of OFFICES.—A Card.—Mr. RAWLINS, N. Architect and Engineer, Bromley House, Market-place, Nottingham.

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COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and Author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Back grounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

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AN Architect and Surveyor's Firm of town and country practice, have a VACANCY in their Office for a YOUTH as Out-door Pupil, with a taste for the profession. He will have every advantage of acquiring the art theoretically and practically. A moderate premium only required.—Address, A. B. 4, Winchester-buildings, Winchester-street, City.

TO ARCHITECTS AND LAND SURVEYORS.

THE Office of Surveyor to the London, Suburban, and Home Counties Permanent Freehold Land and Building Society having become vacant, the Board of Directors will meet on the 26th instant to Elect two Gentlemen to supply the vacancy.—Applications in writing (with testimonials, if any) to be forwarded, sealed up, to the Secretary, 3, Cauldman-street, Doctors' commons.
W. L. HARVEY, Secretary.
January 13, 1853.

MANAGER WANTED, capable of undertaking the entire management of a large Saw-mill and Timber Business. None need apply who are not perfectly competent. Satisfactory references will be required. Salary £60. per annum.—Address, by letter only, with full name, inclosing references, to X. Y. Z. 49, Anyleisquare, New-road.

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WANTED immediately, on a Gentleman's estate in the country, an intelligent man as prin ipal CARPENTER and JOINER. No person need apply whose character in all respects will not bear the strictest investigation, and it is desired to make a permanent engagement. A conscientious member of the Church of England would be preferred, but any person of consistent Christian character would be valued. Wages, 18 per week.—Address, post-paid, to C. B. at Post Office, 40, Great Russell-street, Bloomsbury, London.

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WANTS a SITUATION, a young Man who writes a good and expeditious hand, is a good accountant, has had great experience in cuting and supering all sorts of building materials, deals, mouldings, &c. and can take out details. Good references given. No objection to town or country. Address A. B. care of Mr. Reader, 6, Cobourg-street, Clerkenwell.

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WANTED, by a steady Man, who perfectly understands Brickmaking, with good reference, a SITUATION to dig, make, and burn bricks, or as FOREMAN. Direct to E. B. Montague Arms, Queen's Road, Peckham, Surrey.

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TO the PROFESSION.—A Drainage and Agricultural Engineer, who is a Member of the Royal Agricultural Society of England, and the Author of one of its Prize Essays on the Farming of Counties, as well as of other Papers in the Journal of the Society, which have been referred to with commendation by the highest authorities of the day, and who is also an Assistant Drainage Commissioner, is open to an ENGAGEMENT, as PARTNER or otherwise, in an ESTATE and LAND-AGENCY OFFICE in LONDON, where his practical knowledge and repute might be available for enlarging the sphere of operations in the several departments of the profession. Unexceptionable references given, and principals only treated with.—Address, M. R. A. S. Wakefield, Yorkshire.

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A YOUNG MAN, aged 23, is desirous of an ENGAGEMENT He is a good draughtsman, capable of making out detail or finished drawings, of taking out quantities, or keeping Builders' books. Small salary only required. Good references. Address A. B. Mr. Taylor's, 4, Prospect-place, De Beauvoir Town.

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ONE who has served five years, has since had additional office and practical experience, and other superior opportunities, will ENGAGE for moderate salary in a respectable office in town or country, either temporarily or otherwise, and make himself useful in any department. Age 26. Will satisfy as to character and qualifications. Apply, by letter, to PARAPET, at Deacon's Coffee House, Walbrook, London

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THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages obtained by FISH-JOINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 28th August. This invention not only saves a large current expense in keeping up the permanent way, but by its easing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar, and which fish jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish jointed rails that were under water, and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

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East Indian,
Edinburgh and Glasgow,
Egyptian
London, Brighton, and South Coast,
London and North-Western,
Midland,
Moravshire,
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York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 28th August.

"The system of fish-jointing has hitherto fully borne out Mr Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Mid and Great Western (Ireland),
Northern Railway of France,
Newport and Abergavenny,
South Wales,
St. Germains and Versailles,
West Cornwall.

The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E.; G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

Londonderry and Coleraine,
East Indian,
Midland,
East Lancashire.
Londonderry and Enniskillen,

and several other lines.

Extract from the Directors' report to the last half-yearly meeting of the Londonderry and Enniskillen Railway.

"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

"It has fully answered the expectations formed of it, and there can now be no doubt that its adoption, coupled with the lessened wear and tear from the use of light engines, will effect a material saving in the maintenance of permanent way."

The Permanent Way Company confines itself entirely to the granting licenses to use their various patents, which is done upon very moderate terms.

These several systems have been adopted hitherto to an extent of upwards of 600 miles on the above-mentioned railways

Every information may be obtained by applying to Mr. CHARLES MAY, E. 3, Great George-street, Westminster; or to WILLIAM ROWDEN, Secretary, 26, Great George-street.

CALEDONIAN INSURANCE COMPANY.

Established 1805.

London Office, 27, Moorgate-street.

DIRECTORS.—John Ramsay, esq. Chairman.
John Charles Conyteare, esq. Joseph Dowson, esq.
John Farley Cork, esq. George Scamell, esq.

The number of Policies issued annually has been nearly trebled during the last six years.

Five sixths of the profits are divided amongst the assured. At the last Septennial Division a Bonus, amounting in many cases to half the premiums paid, was declared.

Policies may be made indisputable after five years.

Prospectuses, &c. forwarded, on application to

EDWARD F. SEALY, Manager.

SPECIAL NOTICE

To secure the advantage of this year's entry, proposals must be lodged at the head office, or at any of the society's agencies, on or before 1st March.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.

Incorporated by Special Act of Parliament, 10 Vict. c. 35.

EDINBURGH ..... 38, St. Andrew-square.
LONDON ..... 126, Bishopsgate-street.

The Sums Assured exceed	£3,780,000
The Annual Revenue exceeds	140,000
And the Accumulated Fund	690,000

Large Additions have been made to Policies. For example, a policy for 1,000, dated 1st March, 1838, becoming a claim after payment of the premium in the present year, would receive 1,514; and policies of later date in proportion

POLICIES RENDERED INDISPUTABLE. The Directors have arranged that Policies may, under certain conditions, be declared indisputable on any ground whatever, after being of five years' endurance, and the Assured be entitled to travel or reside beyond the limits of Europe, without payment of extra premium for such travelling or residence.

The next Triennial Allocation takes place on 1st March, 1853, when an additional Bonus will be declared.

ROBERT CHRISTIE, Manager.

*** Medical Referees paid by the Society.

Forms of Proposal, and all other information, may be had (free) on application at the Society's Office, 126, Bishopsgate-street, (corner of Cornhill), London. WILLIAM COOK, Agent.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

ADVANTAGES OFFERED.

EXTENSION OF LIMITS OF RESIDENCE. The assured may reside in most parts of the world, without extra charge, and in all parts by payment of a small extra premium.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of Profit divisible in future among the Shareholders being now provided for, without intrenching on the amount made by the regular business, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with at the same time complete freedom from liability, secured by means of an ample Proprietary Capital, thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of Life, one half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES.—Five Bonuses have been declared; at the last in January 1852, the sum of 131,125l. was added to the Policies, producing a Bonus varying with the different ages from 24 to 55 per cent. on the Premiums paid during the five years.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next, will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON PARTICIPATING.—Assurances may be effected for a Fixed Sum, at considerably reduced rates, and the Premiums for Term Policies are lower than at most other Offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid *thirty* days after proof of death, and all Policies are *Indisputable* except in cases of fraud.

INVALID LIVES may be assured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life, from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within *fourteen* months.

The Accounts and Balance Sheets are at all times open to the inspection of the Assured, or of *persons desirous to assure.*

A copy of the last Report, with a Prospectus and Forms of Proposal, can be obtained of any of the Society's Agents, or will be forwarded free by addressing a line to

GEORGE BUCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

NATIONAL ASSURANCE and INVESTMENT ASSOCIATION.

7, ST. MARTIN'S-PLACE, TRAFALGAR-SQUARE, LONDON.

Established May, 1844.

INVESTMENT OF CAPITAL AND SAVINGS.

The object of the Investment Department of this Institution, is to open equally secure and profitable channels of investment for the surplus capital of the affluent, and the provident savings of the industrial classes of the community. To persons desirous of placing their money out at interest, but unused to seeking securities, and inexperienced in estimating their value, this Institution offers immediate facilities, and an opportunity of realizing the highest rate of interest yielded by first-class securities, in which alone the money deposited with the Association is employed.

Interest payable in January and July.

CAPITAL STOCK, £100,000.

The Capital Stock is altogether distinct and separate from the Depositors' Stock in the Investment Department of this Institution. It constitutes, with the Premium Funds, a guarantee for the engagements of the Association, and has been provided in order to render the security of the Assured complete.

FOR SECURING LOANS OR DEBTS.

Amongst the varied and extensive Tables of this Institution will be found one peculiarly advantageous where Policies are required for securing loans or debts. The rate of Premium by this Table will protect the Interest of the Policy-holder from all contingencies, and allow the Life assured to proceed to, and reside in, any part of the world.

MUTUAL ASSURANCE.

Assurances may be effected from 50l. to 10,000l. on a Single Life. Entire profits belong to the Assured, and divided annually.
Credit for half the amount of the first five annual Premiums.
Medical men remunerated for their Reports.
Liberty to Travel, and Foreign residence greatly extended.

COLLEGE EDUCATION.

A New-1 Table has been constructed expressly for the use of this Institution, whereby a Parent, by the payment of a very small annual premium, may, in the event of death, secure to a Child, either an Annuity, payable from the age of 17 to 23, or an equivalent sum in money.

Other new and important Tables for Educational purposes, and Endowments for Children, are in course of construction, and will shortly be published.

The Tables for Reversionary and Deferred Annuities, are particularly deserving of attention, whether regarded as a means of providing for a particular Individual, or as a resource against the casualties of age, involving, as it does, the uncertainties of health and fortune.

Full information and prospectuses may be obtained, on application at the Head Offices of the Association, or to the respective Agents, throughout the United Kingdom.

PETER MORRIS, N. Managing Director.

Applications for Agencies may be made to the Managing Director.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NONTRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO., Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

TO BUILDERS, PLUMBERS, &c. &c.

THE SUNDERLAND CROWN GLASS COMPANY, Peerless-place, City-road (a few doors from the turnpike).

Crown Glass in crates and squar. s, Foreign Sheet Glass, Polished and Patent Plate, Ornamental and Stained Glass, Water-closets, Sheet Lead, and Patent Pipe, Plumbers' Brass Work, and every article in the trade. N.B. Depôt for Hartley's Patent Rough Plate Glass.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 215, OXFORD-STREET.

TO BUILDERS, PLUMBERS, &c.

JAMES MILES'S cheap ENGLISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, Churchstreet, Shoreditch, near the Eastern Counties Railway Terminus. Cases of foreign sheet, various sizes, 41s. 200 feet; crates of sheet, 14 to 16 oz. 8½d. per foot; good crown C C C, 18, 22s. 6d. and also C C, 18, 20s. per crate; patent plate; Hartley's ROUGH PLATE; stained, ground, and ornamental glass; crown squares of every size in stock; sheet lead; pipe; patent gas-pipe; solder and plumbers' brass work of all kinds; white lead, oils, and colours, at low prices; LARGE STOCK of PAPERHANGINGS; old lead bought in any quantity, or taken in exchange. Sashes glazed and primed in oil at very low prices, in any quantity.

PLATE GLASS.—ALFRED GOSLETT respectfully begs to inform the trade that the Plate Glass Tariff has recently undergone a complete revision, that Plate Glass generally, but more particularly LARGE-SIZED GLASS, has been considerably reduced in price, and that he is prepared to forward tenders for the supply of any quantity upon application.—Soho Crown, Sheet, Patent, Plate, Plate Glass, and Wholesale Looking-glass Manufactory, 26, Soho-square.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

Mediæval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIS, LARDERS, &c. &c.

Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S-PARK-BASIN.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulins let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville; and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

THE PIMLICO SLATE-WORKS. Patronised by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others, that he continues to supply the Box-hill Ground Stone, Corshamdown, Coombedown, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

(DEPOTS.)

Great Western Railway Station....	PADDINGTON.
Great Western Railway Station....	BRISTOL.
Hope-street, Mount-pleasant	LIVERPOOL.
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

PAVING.—CHEAP TOOLED PAVING. NO ADVANCE in PRICES by E. and W. STURGE.—Builders and others are particularly invited to inspect.—Sinks reduced to 1s. 8d. per foot; Coping Sills, Steps, &c.; Selfaced Paving and Slab. Country builders supplied with a priced list, free, on application. The quality and prices must ensure general approval. N.B.—Cash prices on the wharf.—E. and W. STURGE, Bridge-wharf, City-road. Established 1831.

PORTLAND CEMENT.—JAMES WESTON having commenced manufacturing the above Cement, begs to inform the trade in general that he can supply them with any quantity they may require, either at his Works, Mill-wall, Poplar; St. Andrew's Wharf, Earl-street, Blackfriars; or Middle Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, French and English Plaster, &c.

PORTLAND CEMENT.—THOMAS FREEN and CO. having completed their works at WOULDHAM-ON-THE-MEDWAY for the manufacture of PORTLAND CEMENT, beg to inform their friends and the public that they are now ready to supply them with cement of superior quality on reasonable terms.—Roman Cement and Plaster of Paris Works, Tuscany Wharf, Canal-road, Kingsland-road.

PORTLAND CEMENT.—CHARLES RICHARDSON, 6, South Wharf, Paddington, has the greatest confidence in introducing to the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1852, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland yard, Whitehall

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, also at his Wharfs in London, 6, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and shingle. The work extends 200 feet into the sea, and is exposed to the most violent gales of the Channel, a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.

Agent for Southampton, R. L. FLUDER, American Wharf.

ROMAN and OTHER CEMENTS. Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who, in 1796, first introduced PARKER'S ROMAN CEMENT; also Tarras and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots, Trasses, &c.

Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin.

NOTICE.—To MANUFACTURERS of CEMENT, and especially those calling themselves makers of "PORTLAND."—ASPDIN, ORD, and Co. beg to inform the Trade, that on the 10th of FEBRUARY, 1853, they intend to EXHIBIT at their PREMISES, New-wharf, Abingdon-street, Westminster, a SERIES of EXPERIMENTS, showing the extraordinary powers of their CEMENT, and its great superiority over all others manufactured. ENGINEERS, ARCHITECTS, CONTRACTORS, and BUILDERS, are respectfully invited to attend the same. Manufacturers desirous of testing any kind of Cement with "Aspdin's Patent Portland," are requested to make the same known to ASPDIN, ORD, and Co. who will afford them every information and assistance relative to the proposed experiments.—New-wharf, Abingdon-street, 15th December, 1852.

WILLIAM ASPDIN'S PATENT PORTLAND CEMENT.—Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable Cement that as their works are now in operation they are prepared to execute any orders they may be favoured with.

New Wharf, Abingdon-street, Westminster, Sept. 23, 1852.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS' STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf, Paddington.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS, AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having purchased some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other.—DOES NOT WASH OFF.—is perfectly dry in twenty-four hours, and being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and is SUPERCORDED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has plastic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 223, Sloane-street, Upper Thames-street. A liberal allowance to wholesale dealers.

TO ARCHITECTS, BUILDERS, &c.

ALL descriptions of TERRA COTTA, CEMENT, and PLASTER CASTINGS, executed in a first-rate manner, on reasonable terms, by R. HERBERT and SON, Modellers, &c. 42, Parker-street, Drury-lane. A splendid assortment of Corinthian, Ionic, and other Capitals; Centre Flowers, Balusters, Trusses, &c.; Elizabethan and other Chimney Shafts.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Firebricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Patents, Stucco, &c. Marble Merchants and Importers of Pozzolano.

PURE PATENT WHITE ZINC PAINT, of the VIEILLE MONTAGNE ZINC MINING COMPANY of BELGIUM.—This Paint is superior in every respect to White Lead, which it surpasses in whiteness and brilliancy; it grows very hard after it is applied, and is therefore susceptible of a very high polish. It is unaffected by sea-water, sulphuretted hydrogen, or any other gases.

WHITE ZINC PAINT having none of the poisonous qualities of White Lead, avoids the dangerous sickness to which workmen, as well as persons inhabiting newly-painted houses, are subject.

The VIEILLE MONTAGNE COMPANY import the Oxide in casks bearing their mark, VM, without which none are genuine, and is to be obtained dry or ground at the Company's Agents at the following places, viz.:—London, Liverpool, Birmingham, Hull, Newcastle, Leith, Glasgow, Bristol, Plymouth, Norwich, Ipswich, Dublin, Cork, Belfast, Jersey, Portsmouth, Poole, and the Isle of Wight; and from Messrs. Blundell, Spence, and Co. Hull. It may also be obtained from the Grinding Agents, Messrs. C. DEVAUX and Co. 62, King William-street, City. Wholesale Agents, Mr. CHARLES JACK, 9, Tottenham-court, New-road, and 80, Upper Thames-street, who sells it in kegs of 14 lbs. at 9d. 28 lbs. and upwards, at low rates; and Messrs. R. ANDERSON and CO. Timber-bush, Leith, wholesale and retail.

The Company also employ a painter, who will undertake any description of painting in Zinc by contract.

Since its introduction into the United Kingdom, the Admiralty and the most eminent professional men have given it their preference. The public is cautioned, that if White Zinc Paint is adulterated, it becomes a very inferior paint, and peels and washes off.

For further particulars apply to Mr. H. T. SCHMOLL, General Agent for the United Kingdom, at the Company's Offices, 19, Manchester-buildings, Westminster.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

The Builder.

SATURDAY, JANUARY 22, 1853.



ST. PANCRAS' BURIAL GROUND.

WE are forced to return to the condemnation of an abuse which might have been thought doomed, —forced as well by its pressing importance as by the letters which appeared in our last number from the Rev. W. P. Babington, of St. Martin's Chapel, Camden-town, and from one of the churchwardens of the parish of St. Martin's-in-the-Fields, in connection with our recent remarks on the graveyards of St. Pancras and St. Giles's-in-the-Fields.

We had hoped that long before this the question of intramural interments had been carefully considered and their abominations and unwholesomeness made evident to all. It would still seem, however, that the magnitude of the evil is not appreciated by parties whose position argues a certain amount of intelligence. How else can we account for gentlemen speaking a word in favour of a London graveyard, situated and occupied as that of St. Martin's parish is.

It was one of the chief objects of the papers on "Old London" in the last of which the remarks appeared, to dive into the former history of this great metropolis, and to find matter which, aided by the experience of the past, we might usefully apply to our present condition. It was, as we have already stated, with the deepest pain we noted the slow and difficult progress of sanitary and other useful and necessary reforms.

The London streets were in former days thronged with thieves, scores of peaceable London citizens were robbed, often beaten, and sometimes murdered, and this practice might have continued if the thieves had not made an unsuccessful attempt to rob the Queen, and completely succeeded in robbing a London alderman. Then regular patrols were put on the streets, lights were hung out, and numbers of the robbers hanged.

In other instances we find a handful of interested individuals, having influence, continuing certain evil practices, until pestilence or some other interference of Providence alarms them personally, or they are forced into compliance by the strong voice of public opinion.

The "grave-yard" question was a few years since ably and resolutely agitated by Mr. Walker, assisted by nearly all the ability of the London and provincial press; circumstances of the most revolting nature were placed before the public; and although seemingly beyond belief, yet have never been contradicted. Soon after these matters were made known the cholera paid us a visit, alarming the minds of men by the fierceness of its visitation; many reforms were determined upon, amongst others, the immediate discontinuance of intramural interments: this desirable boon then seemed a certainty which every one might congratulate himself upon. Notwithstanding this hopeful appearance, the grave-yard question seems as far from settlement now as it was six or seven years ago. The cholera is gone, and Parliament have passed a measure on this subject, which, however it may suit those who have a pocket-interest in continuing the practice of burying in our large towns, is totally inadequate to be of benefit to the suffering public. The churchwarden of St. Martin's states, that "the cemetery is not at the present time more than one-third occupied," and, "that a large sum has been spent in planting it with trees and shrubs, which render it an *agreeable ground* as a place of sepulture." It happens that it was in this "*agreeable* ground," in Pratt-street, that we first saw, some years since, open graves gradually filled with bodies of the poor, and left without covering of earth, until the coffins were near the top and it suited the arrangements to have duty done over these companions in wretchedness there assembled in their last bed. It has too often since been our lot to witness similar scenes in various parts of London. Admitting the testimony of Mr. Countze, that the St. Martin's ground is only one-third full, and *made* "*agreeable* as a place of sepulture," we much doubt its beneficial effects on the surrounding living population. One-third of the ground is said to be occupied, and knowing how these decaying masses of humanity are "worked" into the soil,—decking it is but a painting of the sepulchre, — poison from a golden chalice is as deadly as when taken from a cup of clay. We must do more, however, than speak thus negatively. We assert unhesitatingly that this burial-ground is wholly unsuited for its purpose, and that those who permit it to be further used in the face of the body of evidence now before the world, will entail a heavy amount of responsibility. Look at the aspect the ground already presents even on the surface—a muddy, sloppy place, as we viewed it yesterday. What is called the "third ground" (such was the grave-digger's designation of it), is filled to overflowing. The "tombstones," dwarfed to the size of school slates to economise room, are set thickly as teeth. The spot is literally sown with corruption. We give the rev. chaplain and churchwarden credit for desiring that "all burials should be conducted in an orderly and becoming manner," but we will not give them credit for common sense, — we will not give them credit for common honesty, if they say it is right that this monstrous heap of decaying mortality should be placed amongst the living, and opened week by week, perhaps day by day, to receive additions to the mass, and to emit in more concentrated form its destructive gases. Whether the remains be those of rich or poor, all must decompose to the elements that form the human body, which are indestructible, and must be dispersed throughout the neighbourhood.

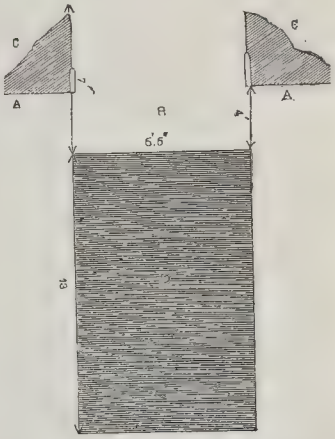
But why should we argue a matter which has again and again been determined? No one will be bold enough to say that the practice is wholesome, christianlike, or proper, and all must earnestly desire its abandonment if not personally interested in its maintenance. Our large cities are rapidly doubling their population. We live in the times of railways, the steam printing-press, and the electric telegraph; old-fashioned and half measures will only end in disappointment, and eventually in greater sacrifices. The whole system of intramural interments should be at once changed. Let us have no more cemeteries in our streets, even if only one-third filled and "agreeable places;" let us add no more to the stacks of coffins which fill the vaults of chapels and churches; but provide proper places at a distance from towns. Not long since the burial-grounds of St. James's in the Hampstead-road, St. Pancras, St. Giles's, and St. Martin's, were in pleasant fields. Look at them now!—plague-spots in the midst of thousands of people.

The appearance presented by the ground of Old St. Pancras's parish is very extraordinary. Unaided imagination would scarcely reach to it, and we have therefore pencilled down its general aspect. An account of the number of bodies here deposited would startle the most apathetic. We should be glad to learn how many have been placed here, and in the yards of St. Giles's and St. Martin's, even within the last six months; and we publicly invite the authorities to give us the information. Should they refuse, probably the House of Commons may be led to ask it for us.

St. Pancras' ground is truly an extraordinary sight. The stones — a forest of reproachful spirits—are falling all ways; the outbuildings put up on its confines are rent, and the paved pathways are everywhere disrupted, such is the loose and quaking state of the whole mass.

The practice of pit-burial is still contined in this ground. When we were there yesterday, we found a hole with six coffins in it, waiting its complement of about double that number!

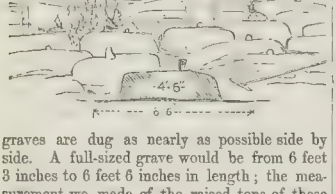
St. Giles's ground, the soil of which is a stiff clay, was in a disgusting state,—a mere mud-pond in that portion which is appropriated to the burial of the poor. The accompanying sketch



will give a notion of one of the impositions practised here. A shallow grave is dug, and some of the clay removed is banked round it (C C), so as to give the appearance of greater depth. In the instance sketched, the grave itself was

only *three feet ten inches deep*, and in this the coffin was to be placed. A, shews the level of the ground. The mourners, taking a last view of their friend, would imagine, on looking into the grave, that it was at least 6 feet deep, being made up square to the top of the bank, and kept firm by planks. We will not believe that the reverend chaplain of the parish is aware of the lie thus acted. At D, are probably layers of coffins.

Parts of the London burial-grounds which have been properly "worked," as they call it, are filled from a depth of about 13 feet up to 3 or 4 feet from the surface; our readers may see by a reference to the following engraving of the surface of St. Giles's-in-the-Fields that the



graves are dug as nearly as possible side by side. A full-sized grave would be from 6 feet 3 inches to 6 feet 6 inches in length; the measurement we made of the raised tops of these graves shewed them not more than 4 feet 6 inches in length. A square portion of the graveyard is appropriated for present use; the 4 feet 6-inch graves soon become less, and speedily are not to be recognised by the friends of the deceased. A flat space is soon made for fresh graves, which are dug, of course, not so deep, and thus the ground is "managed" until no more coffins can find room. We need not ask if 3 or 4 feet of loose earth, and slight wooden coffins, will contain the fluids and gases of which these bodies are composed. These, quickly liberated, pass into the air and do their evil work.

The retention of burial-places in the midst of the living is a costly wickedness and a national disgrace.

We append a communication received from Mr. Walker, to which that gentleman has been spurred by our allusion to him last week.

Although the great question of extramural interment appears to be forgotten by the authorities, lay and clerical, I shall be much surprised if those most interested in its final settlement—the People—are not, ere long, up and doing. You, sir, who have had considerable practical experience in sanitary works generally, are well aware that the particular subject under discussion has received more injury at the hands of its pretended friends than from any other source. When the time arrives I shall be ready to demonstrate the truth of this assertion. For the present I may remark that, although I do not feel myself called upon to re-establish, in detail, circumstances that would seem to be either unknown to, or unappreciated by, those in authority, nevertheless, your remarks in the *Builder* of the 15th inst. have determined me to offer another mite to the public Treasury on this all-important question—a question, I repeat, that has been so fully discussed that any further proofs seem to me unnecessary, and almost an offence offered to your readers.

As it is now pretty generally admitted that, apart from moral, there are weighty sanitary, considerations involved in the close approximation of the dead to the living, the present juncture seems favourable to the renewal of a protest against a practice whose manifold abominations have been so urgently and so repeatedly exposed and denounced.

Incredible as it may seem—in spite of repeated remonstrances and warnings, continued during many years—the iniquitous and destructive practice of in-town burial goes on as briskly, as offensively, and, I will add, as insultingly, as ever,—though, thanks to the press, the abomination is now tottering to its very foundations.

Although it would be an easy task to adduce evidence of the shocking condition of hundreds of intramural receptacles for the dead in London and elsewhere, yet, for reasons, I confine myself to one, though not by any means the most striking example.

As I walked past the churchyard of *St. Clement Danes*, in the Strand, on Sunday last, I saw several holes ready for the reception of new tenants; and feeling myself challenged, as it were, by your leader, I determined to send you, in the following facts and figures, a brief history of that mass of corruption.

From 1822 to 1847—twenty-five years—2,759 bodies have been deposited in St. Clement's churchyard, which contains 12,779 feet. This space would give decent sanitary burial to forty *adult* bodies yearly, or in ten years to 400! But, as a large portion has, during many years, been pre-occupied by vaults and purchased graves, certainly not more than one-half the above surface should have been appropriated for the purpose of burial, and on this calculation 200 adult bodies *would have filled the graveyard*. During the twenty-five years above mentioned, 110 bodies have been disposed of *yearly*, instead of thirty-four: and if, as is the case, more than one-half the ground ought long since to have been considered, and treated as though occupied—the burial surface, consisting of one-half of 12,779 feet, could give interment to only 200 adult bodies, or at the rate of twenty per annum! Yet, in this ground, situated in the centre of the greatest thoroughfare in London, there have been deposited from 1822 to 1847, seventy-eight adult bodies yearly, instead of twenty. And further, this calculation does not include 807 bodies under fifteen years of age, which have been deposited during the above-named period, making an additional number of thirty-two bodies per annum, or a total of 110 bodies *yearly*, in a space capable of giving *sanitary* inhumation to only twenty bodies per annum.

Vestry-room œconomics and churchwarden's ethics, often go hand in hand, as was observed the other day by a friend of mine, who kindly furnished me with the original of the following, representing the condition of the "Great Vault" eighty-six years ago:—

"St. Clement Danes, Jan. 25, 1767.

"Notice is hereby given, that a vestry will be held on Tuesday next, at six o'clock in the evening, in the vestry-room of this parish, to take into consideration the cleansing of the great vault under the church, the same still being in a very bad condition, and the smell of it so offensive that divers of the parishioners are prevented from attending divine service.

(Signed) HENRY WALLIS, WM. MASSEY, } Churchwardens."

I should add, for the further enlightenment of the uninitiated in these matters, although the "oldest inhabitant" has no personal knowledge of the fact, that a highly respectable living authority has informed me that "when he was a boy, he had heard, about the period above referred to, that the 'great vault,' somehow or other, took fire; that the stench was tremendous; and that the coffins and their contents were burning during many days."

GEO. ALFRED WALKER.

THE METROPOLIS NEW WATER ACT.—A portion of the new Act (15 & 16 Vict. c. 84), will shortly take effect. By 19th section all water companies, on or before 31st January in each year, are required to send an accountin abstract of their yearly receipts and expenditure, duly signed, to the town clerk of the City and the vestry clerk of each other parish supplied, under a penalty of 20*l.* for each default, the account to be open at all reasonable hours on payment of 1s. for inspection. The first account must be lodged by end of present month. Another part of the Act will come into force in a few months. Within a year of its passing (the 1st July), a map of underground works of the companies is to be made and kept at the principal offices of each company, and open to inspection to all interested within a particular district, who may take copies or extracts. Other portions of the Act will not come into force till 1855.

THE QUESTION OF "SHAMS."

As the paper you gave us, p. 27, "On Imitation in Decoration" was read to an assembly of architects, I presume its author is called an architect. If not, the following question will still apply to some one, and I am sure he will excuse my natural mistake.

To the many accomplishments necessary to his work, then,—quite enough to expect of any one man,—I assume that he does not add the unnecessary one of *graining*. If he does, I have no more to say but to express my profound respect for such a rare combination of talents. Two acquirements, both honourable, must in their union be still more so; and I certainly honour grainers, not indeed for doing what I cannot (for then I must honour skilful pickpockets, too), but for doing what, to the best of their knowledge, is their duty, to which they think it has pleased God to call them, and doing as much of it as they are paid for.

But assuming, what is much more likely, that the "rare talent and skill displayed" in graining and marbling (which I should be the last to dispute), and that which is necessary and supposed (whether *displayed* or not) in the direction of a costly building, are not *both* professed by Mr. Purdie,—that he does not grain his own buildings; I would submit this question:—In receiving your five per cent. commission on the *whole* cost of a building, does this include the graining? If so, what are you paid for? Is the "rare talent and skill" thereof, or any percentage on the cost of it, *your* talent and skill, Mr. Purdie? When you take your per-centage on the cost of material and labour in this arch or that door-post, it is for *your* work in them,—not other people's, but your skill and knowledge and thought, spent in economising that material, directing that labour, and infusing that spirit, that stamp of mind and of mental refinement, that makes the result a work not only of art, but of *your* art, as well as the workmen's. Now how does this apply to the graining? Are you to be understood as receiving pay for your own work, or for other people's? Is your commission for using your own skill or for wasting theirs?

Do you say this is a coarse and personal way of looking at the question? Pray remember this is not the first time you have seen it discussed, either by me or better men. If people cannot see or do not take delicate hints, what can they expect but broader ones? and if those fail, less gentle suggestions still, and perhaps from less friendly quarters.

Depend on it, the public will one day have this little point of architectural remuneration settled,—and not this one only.

Talking of such hints, what a searching one was that of the great Turner, when, on entering a gallery where he was meant to see only his own works, he was first struck, it is said, with a bit of grained papering, and said, "*The fellow that did that knew how to paint.*" As much as to say, "You complain of having no painters, Mr. Bull. Why, how on earth can *you* tell what sort of painters you have? For, look here, *this is what you give them to do.*" Truly a Turneresque dash that, and plain enough from the right point of view. Whom do you think it was meant for, or at? Grainers? Oh, no! At nobody so respectable. Not at grainers, my dear sir, but at *grainer-makers*.

Now, as for the "æsthetical" question that has been turned about in so many lights, I neither know nor care whether grained boards deceive any one or not. But this I know, that the grainer-maker who, professing to serve his generation, as the Wrens and Wykehams, and Derhams and Williamses of Sens, great and little, did theirs, obtains money for getting his dreary vulgarities tricked out thus, need not search far for the "deception." He will find, not far off, a hollower "sham" than any painted board or veneered wall, and more costly and injurious too.

But Mr. Purdie has mixed up remarks so sensible and so far from the point, with those specious ones really relating to it, that distinct answers *seriatim* seem necessary.

First, then, the principles of ethics are *not* applied to æsthetics, but kept strictly to their own province. Is it a question of "æsthetics"

whether architects are to do what they are paid for, or take pay for wasting others' work? Is it a matter of "æsthetics," whether the world would be better or worse with you away?—whether you help to increase its wealth or destroy it?—destroy 100 pounds' worth of men's labour to pocket five? What have any of my remarks above to do with æsthetics? The whole question is purely one of ethics.

Secondly. In æsthetics, Mr. Purdie knows of no "higher authority" than the Greeks. They are not *my* court of last appeal; but no matter, he has admitted them as *his*. Now, the Greeks *never used* these imitations, as far as we know, and yet they could execute them, and had thought of them. This we know, from the joke of Parrhasius (probably a man of superior taste, who took this waggish mode of showing his countrymen that deception was no great excellence in painting, since a sign-painter might beat Xeuxis on this ground). At any rate, I am much obliged to Mr. Purdie for this timely aid to our argument. If the story shows us anything striking, it is that Xeuxis *had never seen* a curtain made the subject of a picture, or represented in the Dutch manner before; and we do not hear that Greece ever saw one again. Now if a nation, peculiarly fond of ornament, and perfectly able to have this class of ornaments, had them not, will Mr. Purdie tell us how his Court of Chancery could have pronounced more plainly against them? If a Greek had ever done so in words, it would show they were worth writing against, and therefore worth *doing* in the eyes of some of the judges of this rather numerous court. And were there no Parrhasius story, we should not be sure that the matter had ever been brought into court. It *has*, however, and so unless the grainer-makers can produce its award in their favour, Mr. Purdie has brought them into this unlucky alternative,—that they must produce a bit of Grecian graining, or stand condemned in his chosen court.

Thirdly. If Ruskin and all the other writers on the subject admit of veneering, both in wood and marble, will Mr. Purdie tell us where they admit of "making a wall look like solid marble by veneering it" either "with paint" or with "thin slices of the marble itself?" The Italian veneering with marble no more does this than a suit of armour makes a man look solid iron. It is either an *armature* like that on the Venetian brick buildings, applied mainly for protection or durability, but beautified by the refined treatment of its *structure* (of the very features that prevent its passing for anything else than it is), or else a decoration by *panels*, which pretend to be nothing more than thin slices, and, in fact, are simply using a part of Nature herself instead of an imitation of her, just as it would be to train creepers over, or cultivate flowers in our balconies. But if you say we imitate these by carving (and why not imitate the marble or wood by painting?) the cases are totally different. In carving the leaf, you are imitating a beauty that nature exposes,—sets forth for imitation. In graining, you are imitating what she hides. You are going behind her scenes and pretending to imitate the beauty of her *processes* instead of her *results*,—her *work* instead of its *design*. But you cannot imitate her *work*; you can never imitate her beauties of *workmanship*,—only those of *design*. All her works have inimitable beauties, but not all, only those completed and exposed to view, have *imitable* ones; and you are leaving the imitable to pretend to imitate the inimitable. Exactly contrary to the old architectural ornamentists, who (as Ruskin has so well shown) *abstracted* the imitable beauties of a thing and imitated them only, you choose what has *no* imitable beauties, but whose beauty depends wholly (as he says of mountains) on what you cannot imitate, viz. partly on scale and partly on accident,—partly on the minute elaboration of workmanship, and partly on that indescribable charm of *naturalness*, the result of endless combinations of conflicting forces, which art can no more imitate than it can make a world; which, if imitated at all, must be so by processes that leave nature to work alone, and are no more art than is a daguerreotype, a specimen of crystallization, or the beautiful marks made by some acid on leather book-covers. For beauty springs not from mere irregularity, but its union with some kind of uniformity,—the interest of seeing one design or law pervade these endless combinations,—unity in infinite variety,—one character running through the infinite fractures of a cliff, the infinite gullies of a mountain-chain, the infinite-seeming ramifications of a great tree (as the vast minute-leaved tamarind), or the infinitely combined veining of a plank of the same, or a slab of jasper. We cannot imitate but only ape these beauties; and by pretending to imitate *them*, instead of what we *can* imitate, we betray that beauty is not what we value or use the things themselves for. Thus, if the British Museum stairs had only *used* polished granite (no matter in how small or how large quantity), and not imitated it besides, we might have supposed it used either for durability, cleanliness, or beauty. But it cannot be *imitated* for any of these. Whence, it is clear, that neither the reality nor the imitation is for these purposes, but for some other. Both are for what Mr. Purdie says all rare stones are used for. But there he is mistaken. If he will refer to a monography that he probably has of a very famous building (2 Chronicles, iii. 6), he will find what they are used for in true decoration. Mr. Ruskin says truly enough that the worth of a diamond is *now* simply the understanding of the time it must take to find one as large; but what were the *first* diamonds found and cut for? The present is neither their original nor ultimate destination. They will presently be the eye-lenses of national telescopes and microscopes.

Fourthly. The comparisons with novel-writing, acting, and high painting, seem to me too irrelevant to be answered; though I believe the last to be wofully impaired by the touch of this blight even in its merest externals of colour or brushmanship. It is as if Shakspere had been obliged by a tyrannous fashion to express all his thoughts in Brady-and-Tate metre. His greatness could not have been hidden, but the work would have been all the less noble. So it is, doubtless, in such cases as the Sistine Chapel.

Fifthly. Ruskin's defence of gilding undoubtedly fails. What was once wrong can never become right by frequent use. But there is another reason why this need not, and never did deceive in true decoration. The reason is that, except on metals (where it is confined to parts of the surface, and therefore evidently superficial) it is used to cover substances that show, by the forms we give them, that they are not metallic. Malleable metals, brittle or granular stone, or brick or plaster, and fibrous wood, lead to three distinct characters of form, which can never be mistaken for each other: so that we may coat those of one class with coatings of another, wood or stone with gold, and metal or wood with stone-colour paint, with no deception or unfitness; unless, indeed, the perverse craft of some Anglo-Saxon has employed itself in making wood mimic marble forms, or metal mimic wood or stone forms, as in the five-order-men's, cabinet-maker's, and engineer's chaos. We get a rule then exactly reversing that of the present decorators. Theirs (that a coating be not employed where its material would be out of place in construction) would *banish gilding* from everything but metal work; while ours admits it illimitably on everything but metal, and on that too in patterns or devices.

Sixthly. Mr. Purdie rightly enumerates the three motives of all coatings or facings (1, Beauty; 2, Durability; and 3, Expression of Cost), but by no means in the order of their importance, either actual or practical, *i. e.* in reality or in modern English estimation. If he meant to give their proper order, he is the first architect who has had the boldness to contradict every authority on his art, from Vitrivius down to you, Mr. *Builder*, by putting durability after beauty, and that theoretically (for it is common enough in practice). It seems, then, that modern practice is right after all, and mediæval quite wrong! Instead of "making useful things in beautiful forms," we are still to take beautiful things ready made, and get what use we can out of them! All the works that will bear to be looked in the face,—all that we find worth counterfeiting, are on a wrong principle, for it is plain that though their authors omitted plenty of imaginable beauties because they were *not durable*, they never rejected any useful and durable thing because it was *not beautiful*, for there seems to have been somebody (not a grainer nor any of the workmen, but somebody) able *to make it so*.

But this innovation is a trifle to what follows. Where, in the name of Vitruvius himself,—in what authority, from that worthy's own Six Principles down to our worthy Newleafe's "Seven Other Lamps," did Mr. Purdie find that "the suggesting ideas of cost" was one of the aims or uses of art? It must be a fifteenth "Lamp;" and verily, though reckoned in no theory, a mighty lamp it is, in all our modern practice, or rather it is the sun that has utterly eclipsed all the glimmering of those poor mediæval rushlights, and laughs at all efforts to trim them into visibility. This expression of cost, which Mr. Purdie puts third in theory, he must put first, and second, and third, too, in practice, if he means to build for Britons of this nineteenth century. Does he suppose these "imitations," or *any* architectural imitations of ours, Greek or Gothic, Elizabethan or Egyptian, have any reference whatever to beauty or durability, or any other end than this of showing how much more money than wit the owners can spend? Let us see.

Artistic imitations of wood and marble are to be used, we are told, for their durability compared with other painting. Now, if Mr. Purdie will propose to grain the girders of the next railway-bridge, or the crane on the next warehouse he erects, he will learn the value generally set on this admirable contrivance for durability. Again, if it be beautiful, there is nothing in which beauty is more sought than in personal ornament and clothing. Surely here is room for a great hit: cannot the manufacturers bring out the rosewood ribbon, bird's-eye maple muslin, granite-pattern shawls, and Sienna waistcoats? It ought to be registered.

But if any qualities of colour or manipulation peculiar to such paint-work do conduce to durability, is it common sense to call in *an artist* to produce them? Cannot the architect find out what they are, whether variegation, or roughness, or stripedness, or crossedness, this or that colour or mechanical property; and then *design* how to give it those useful properties beautifully; and so use his *own* artistic skill, that which he is paid to use, instead of the "rare talent and skill" that is not his to waste? Eh?

Let us apply similar reasoning to the thing Mr. Purdie has chosen for a comparison, veneering or facing with costly materials. We shall find the end always perfectly plain from the means. For instance, in the Venetian marble crust or armour on brick, the ends are *durability*, perhaps *cleanliness* and *beauty*; the latter not so much a primary object for which the work itself was undertaken, as a grace springing out of it; not an end thought sufficient to motive the whole addition, material and labour too, but only a portion of the labour, the moulding and dentelling of edges, curving of joints that might have been straight, &c.; and a far less proportion altogether of the stone-cutter's labour than of the architect's. Again, in facing with blocks that form part of the wall itself, and are of more resistent material than its interior, as in the Eddystone, the end, *durability*, is equally intelligible, and is better secured than by these armatures, though at greater expense of material (*i. e.* of mere machine-work), and less of skilled work, especially of the designer's own,—all which is characteristic of a different state of society and ethics. So, again, I can understand the granite lining Mr. Huggins says St. Paul's should have had, to be for *beauty*, though not, like the above, for any other end besides, and certainly a sacrifice to this end so unprecedented (at least, as a merely material sacrifice), even in what he calls the "epic" works (as Solomon's, which was only "garnished," not partly *built* with stones sought out "for beauty"), that I would no more undertake to say what he does of it, in his generally excellent paper, than to pronounce of a newly devised metre untried in a single verse, that it is fit for epic poems, and that Milton ought to have used it.

But let us turn from these to the actual English mode of stone coating or facing; and, take our former example, because if there be any kind of building to which *durability* seems proper, it

is to a depository of rare and unique works of thought and art, a library or gallery; and if to any one library or gallery more than another, to the British Museum, which is both; and if any building has cost enough to make it presumable that something was paid for *beauty*, too, this has. Now, the chief front is coated with stone. Is this for durability? Not only is the material less durable in London than good London brick, probably than the very bricks it covers, but it is so attached to the wall (of which it forms no part) as to help pull it down, instead of helping keep it up! Do you say, "So does the Venetian crust work?" That protects, though it does not help support; but this does neither. Is it, then, for beauty? Not beauty of *form*, for the stone is not cut into any form that might not have been produced more easily in brick. Not beauty of *colour*—for its colour is unvaried, and identical with that of some of the best bricks in the valley, and the colour of bricks might have been varied in an illimitable choice of beautiful or even grand devices. But all beauty (in the sense we use the word) is either of form or colour, *i. e.* dependent on one of them. Neither durability nor beauty, then, could have anything to do with this facing. But now, if we inquire as to the third object, expression of cost, we find some work, some ingenuity (indeed, *all* the ingenuity) spent on concealing the modes of attachment, and making the veneers pass for blocks of the wall—and with such success, too, that probably not one visitor in a thousand, perhaps no one who did not see it in progress, ever doubts that the nation has a stone-walled, or, at least, a stone-front-walled museum. Here we have, then, the first, second, third, and sole assignable object of all this quarrying,—to make believe the English were rich and foolish enough to bring their material 100 miles, when they really had the wit to use better, made within a mile or two.

And it is asked, "where is the deception?"

Now, cannot Mr. Purdie see that this estimate of things by "the dignity they confer as objects of cost," is the one grand innovation that leads to all these shams, ethical and æsthetic, and necessitates them? There can, he justly says, be no such thing as sham beauty, the appearance and the reality of beauty (*i. e.* artistic beauty) being but one thing. But there can be sham cost, and sham durability, and sham strength, and sham size,—and have been, ever since the *expression* of such qualities became objects of art; and there can be nothing else where such expressions, or any of them, become its sole objects.

For instance, among us, at present, the architect (so called) is simply a *modiste* in building, not an artist. It is not his business, any more than the tailor's, to produce *beauty* (originally and properly so called), but *mode* (often now called beauty too, in colloquial language, as well as *respectability*, *ton*, *character*, *style*, *taste*, and other names that the same thing has taken from time to time, and is varying in turn, like any person or thing that fears to get too well known). *Modistes* are demanded and supported by the public for every matter that their neighbours see, and we are the *modistes* of building. It is our business, then (as they in other branches of work, so we in building), to study and produce *mode; i.e.* to bring together whatever, for the time being, happens to have acquired in our countrymen's eyes associations with a beautiful length of purse in the owner (or, in the case of churches, a beautiful length of lineage in the thing itself); and further, if working for first-rate people, to introduce cautiously, without sudden deviation from the *mode*, such new features as may conduce to the same impression by their singularity or extravagance, instead of their associations, and thus distinguish these works until the vulgar have time to counterfeit their peculiarities, by which time we have to introduce new ones. These are the objects of *mode* (or whatever else the thing is called to-day). To counterfeit the guise of those above us as fast as they can change it, to change our own faster than those below can mimic it, to show how much more money than wit a great man can afford,—how much more curiosity than usefulness a church can afford,—these are the elements of *mode*,—of *beauty*, in the sense that all grown-up English people most frequently use the word. Children, indeed, are born with a wholly different sense of beauty, and with the same now as a thousand years ago; but we take care to laugh it out of them, and instil this in its place as soon as possible.

But then the misfortune is, that this beauty is always changing its standard, and we cannot change public buildings, like private ones and dresses, to keep pace with it. The National Gallery, the first "Modern Gothic" church, the Admiralty, were all as beautiful *when built*, as the coats or bonnets of the intelligent public that looked on. Now we care not how the coats or bonnets looked, or fitted, for they remain only in pictures; but the buildings are obliged to remain in tangible reality, and be ridiculous, inconvenient, or hurtful to several generations, for the sake of being beautiful to one only.

Now it was one of the few mistakes of the author of the "Newleafe Discourses," but a great one, to say that "fashion there had always been," but not "copyism." The fact is, that copyism there had always been, but not fashion. Copyism there *must* be, wherever men have the sense to make use of their predecessors' labours, *i.e.* wherever they are better than bees. The mediæval artist copied as much as the Anglo-Greek or modern Goth, but he copied with different intent. He copied things because he saw reason for them, not because he would shirk the use of his reason. In short, he copied other men, as a man and not as an ape. But though there had always been copyism (and that both wise and foolish), and generally also *custom*, *habit*, and *style*, there was no *fashion*, properly so called, either in the old world before the Cæsarean age, or in Christendom before the "Renaissance" abroad, or the "Perpendicular" epoch in England. All copyism and all changes before these, were either for utility, durability, or beauty (beauty in the sense children understand it). There was no fashion, for this implies something done or spent for none of those ends, but for what grown-up moderns generally call beauty. It means most commonly, *cost incurred for the purpose of expressing cost*. There was *no such thing* in times and places of true or progressive art, such art as we mimic and make fashions out of.

Is is astonishing how much difficulty even the first writers on the subject seem to find in realizing this difference, and its mighty all-pervading influence through every ramification of human work. It surprises me to see how often, for instance, Ruskin (with his peculiar power of going back into and realising past times, and viewing their works, as it were, in their own atmosphere, instead of from afar, out of our London fog), yet misses this difference, and confounds the modern idea of "respectability" with nobleness, and the modern idea of "vulgarity" with vulgarity proper. I think he somewhere hints that banded shafts *were* beautiful, till gaspipes were invented! He would save Greek architecture from vulgarisation (in the gin-shops, I suppose. I only wish a few were mine, the church-builders should soon find something to do,—you should soon see a new church style, and a new gin-shop style, too, and so on, till they found out what real architecture costs). Meanwhile, had not Mr. Ruskin better try and save the violet from low company? Then he deplores our taking really good forms, and so wedding them to something vile, as to infect the beautiful form with the vulgarity of the thing to which we have joined it, so that it will never be of much use to us (*modistes*) again. Of course not, where our business is to produce *mode;* but it would be of as much use as ever if our work were *an art;* or if its objects were what we pretend,—use, durability, and beauty. Cannot he see that, in the middle ages, a form that was beautiful and fit in a cathedral window or a king's crown, was never held to be "vulgarised," or anywise unfitted, by any amount of use in cottage doors or rough-cast plastering? Cannot he see that just in proportion as you admit these *association* beauties and uglinesses to have weight, these things that are his badge to-day and to-morrow the rabble's, just in that proportion must real beauty and real art be abandoned? *Art*, such as he wants to see revived in building, and *fashion*, such as infects these few sayings of his, and has governed all our building (architecture or not) since the Renaissance, cannot exist together. They are two fixed stars in opposition. When and where one rises, the other sets, and ever must. Their rays divide the globe, and no place sees both at once. I admire the boldness of his attempt, as that of any one attempting to alter the obliquity of the ecliptic; and of course I wish it could succeed, because then I should not have acquired an art in vain.

It is then, I submit, one and the same cause that necessitates sham oak, sham building styles, and sham architects. Those who abuse *them* for it might as well abuse their own cat, for cruelty, or the carrion birds for bad taste. They are the creatures necessary to the work. If you do not want them, make no work for them. The public who make the work, make also the supply of fit agents, and must pay for any little loss or inconvenience attending their fitness,—any unfitness for unique or exceptional work that it may involve. Thus recurring to our former example (for we cannot have a completer one, of the ultimate results of the system), whoever built the British Museum was paid to contrive as good a museum as British means and nineteenth-century knowledge could furnish. Now, for 2,000 years at least, no one building at public expense, even for the poorest communities,—small towns,—missionary convents,—has been obliged to build like Sardanapalus and the British Museum builders, at the mercy of plumbers and rotting sticks. Means of building with nothing perishable and nothing combustible have been perfectly known, practicable, and practised among men twenty centuries ago, among Englishmen seven, and familiar to Turks, Syrians, Hindoos, &c. to this day. Leaving ingenuity out of the question, then, or supposing *no* architect in the sense of *contriver*,—only a copyist, and only Turkish science,—a nineteenth-century museum has no more business with either repairing-funds or fire-engines, than Cleopatra's Needle has. But the "architect" paid to build England one, builds a place in which you must not make fires or lights, and adorns it with rows of water-buckets with "British Museum" on them! His joiners and plasterers deviate in no single detail of work or work-masking, from what they give us where they have no architect,—*i. e.* from the most circuitous mimicry and finessed modistry that ten generations of them have contrived to accumulate in the most vulgar shams their most vulgar employers have paid for. Then, having got whatever work there may be of his own, hidden by theirs or disguised by decorators', but still deeming a mask necessary over the whole fore-front (as over that of the Learned or Five-legged Pig's reception-room), he finds in Stuart and Revett's gin-palace-maker's pattern-book, an Athenian temple side, of which the denuded framework (in stone veneer, on a scale magnified enough to remove it from gin-palace associations) can be executed for only the inconvenience of a few windows less, and the cost of a museum or two more (in money, and still less in thought), and sticking this before his work, he has furnished Mr. Bull with a "piece of architecture."

And it is asked "where is the deception?"

And to such work, men of common intelligence and honour are expected to stoop,—with such expected to "compete!"

Now, Mr. Bull, however he may comfort himself and keep it out of mind, when the thing is done, knows perfectly well that in such cases he is "*sold*,"—sold as he deserves to be. How can he grumble? True, he did not *here* want a sham, ethical or æsthetic, human or mineral. True, he bargained for a real museum, and paid for a real museum, and did not get it; but he got what he deserved,—what he commonly wants,—what he has a demand for, and creates a supply of. Would you beat your cat for killing a pet mouse? What do you keep her for, but to kill mice? And what do you keep architects for, but to build shams?

E. L. G.

ROYAL INSTITUTE OF ARCHITECTS.—On Monday, the 10th inst. Mr. Mocatta in the chair, Mr. A. S. Goodridge, of Bath, was elected an associate. A paper was read "On a certain class of Gallo-Byzantine Churches in and near Perigueux in France," by Professor Donaldson, to which we shall recur.

STEAM NOT SUPERSEDED.

"Once nothing's nothing; twice nothing's one."—*Little Boy entering upon a Course of Multiplication.*

How frequently do the papers, up to the present day, contain the startling announcement, "Steam superseded," "Patent galvanic engine," "Patent caloric engine," "Patent compressed air engine," &c. &c. Long paragraphs appear, even in the *Builder* and in the *Times*, detailing the wonders of some new motive power, or some cunningly-devised machinery, capable of making "nothing" become "one," and, consequently, destined to drive all the lumbering steam-engines in existence into chaos, never more to be seen. The public read, wonder, wait, and then forget the statement, to be restartled by some freshborn phenomenon, doomed to run the same course as those which have preceded it. But steam-engines surely may be superseded? asks Inquirer. Why not? See what has been done in the way of improvement during the last fifty years! This is generally considered a settler for the man who will not swallow the new machine, at one bolt, which is to supersede steam. It is no use to explain that there is a limit to improvement; that power cannot be created; that to gain power Nature must be subverted, and demands an equivalent; that all power, by machinery, must be minus friction; that speed is antagonistic to power, and numerous other *et ceteras*. The believer in *continual* progress will have none of these conditions to cramp his hopes. "Steam has superseded horses—*summut* will supersede steam." Why not? With respect to Electricity *v.* Steam, as a motive power, the case may be put as under. In the most perfect engines yet made, the results have been:—

Pounds weight raised one foot high by the consumption of one grain of

Zinc in a battery.	Coal in the furnace of a Cornish steam-engine.
80 lbs. Cost of zinc per cwt. 216 pence.	143 lbs. Cost of coal per cwt. 9 pence.

Or, power by coal in a steam-engine is forty-three times cheaper than power by electricity.

There is a wide margin here to be worked down before electricity can "supersede steam."

One great error committed by inventors consists in their thinking that complexity of arrangement leads to augmentation of power: they strive, as it were, to puzzle Dame Nature, and then think to trick her out of power. Gravity, however, though the prime cause of heaviness in all bodies, never slumbers: the trick of catching a weasel asleep is easy as compared with that of catching gravity asleep,—and until this is accomplished twice nothing cannot be set down as one.

Oh! the heartache endured by hunters after perpetual motion: the old alchymist over his crucible, the inventor over his wheels, balances, and slides, may both go into one picture, they have both had the same object in view, namely, to cheat nature.

The perfectibility of human nature, I would advise we should leave the German school of transcendentalists to settle. The perfectibility of human art we may gravely set about ourselves. The thing has been (nearly) done in some instances,—Egyptian architecture for endurance,—Grecian architecture and sculpture in beauty,—and many modern machines in power. There may be a margin as betwixt 99 per cent. and 100, and therefore there may be *some* improvement, but as man never can create, so man never will obtain, even the whole 100. As a general rule, simplicity and power are synonimous, because there is least friction: lever, wedge, screw, wheel, the scale is an ascending one: power is diminished by increase of friction. The same law holds good through every combination, however cunningly devised.

To gain power from the elements, the elements must be used, and their natural affinities must be overcome: water must be converted into steam: galvanism or electricity must be evolved, at the sacrifice of some metal or other material: air must be heated, &c. &c. &c. That power which is easily gained, or is readily induced, is as readily and as easily lost. Nature will not submit to any tricks. The Cornish pumping-engine extracts one-horse power out of two pounds weight of coal consumed: by means of large boilers, long cylinders, and clothed machinery: common steam-engines require from seven to ten pounds of coal for horse power. There must, however, be loss of heat even in a Cornish steam-engine boiler, because there must be a draught. Patent "condensers" and "regenerators," however simple and ingenious, or complex and profound, have never yet *cheated Nature*. Like a veritable Shylock, she demands her equivalent, and will continue so to demand it to the end of time. Improvement there may be; but the means will be honest, simple, and clear. The same power will not do double work, without there is double pay. The steam from a high-pressure engine may be made to work a condensing engine, but it is cheaper to have single engines. Tubular boilers economise space, but they are more costly, and more difficult to maintain and repair. The same law prevails throughout.

R. R.

THE DECORATION OF ST. PAUL'S.*

A PANEL, as its name imports, is a proper place for a picture, but I would only place subjects where they could be seen and duly appreciated. Upper panels, that could not properly exhibit a picture, I would relieve by arabesque designs or decorative painting, such as would best harmonise with the architecture. Narrow panels, however, in the more lofty positions, might, for general effect, receive a single historical allegorical or emblematic figure in painting, as a niche does a single statue. The same may be said of the spandrils of the ceiling: single figures of the description just named might in such situations be effective.

The suggestion of subjects for these paintings is not altogether within the province of the architect, and all I would here insist upon is, the observance of unity in them. As in the fabric they adorn, one idea should reign through them. In the church of the Middle Ages, the picture of the Saviour, the Virgin, or other saint generally adorned the high altar. All other pictures were subordinate, and were to refer, to that, and to represent the actions or the symbols of the patron deity of the place. This unity is worthy of imitation: it is as important now and in St. Paul's as it was in the ancient shrine, though I do not consider the range of subjects need be confined to the life of St. Paul.

It must, moreover, be remembered that these paintings are for architectural decoration, for the general beauty of the building, not to be admired on their own account as are detached pictures, and are therefore to be differently treated. Such subjects must be chosen, or such conception or treatment of the subject as will as little as possible interfere with the flatness of the wall,—such arrangement of the composition that the background will recede from its plane in the least degree consistent with correctly conveying the idea. In other words, painting here must be subordinated to architecture, as is sculpture in relievos, and not suffered, by deep rich grounds, to disturb the breadth and repose of the design.

To come to the dome. Whatever the embellishment of that feature, care must be taken to preserve its mathematical and architectural character, and maintain its unity and grandeur of form. The form of the dome is a beauty, a decoration in itself, and all added decoration should deal most gently with that, and so far from eclipsing or obscuring it, should give it emphasis and more vivid expression.

On this subject we have, I think, unmistakable hints from nature. The deep blue starry sky is Nature's grand dome, and not only her sublimest feature, but it is the most beautifully decorated. Our decoration, however, for obvious reasons, must be otherwise disposed: the beautiful irregularity with which the stars are placed, though harmonizing so well in nature with the same quality in the earth, yet would not harmonize with the precision of architectural arrangements. But imagine the starry host grouped into regularly-distributed, equally-spaced constellations, and we have a fair type of what our dome should be.

I think it is clearly the dictate both of nature and reason that a dome should be divided neither by parallel circles nor by meridional arcs, and should be decorated only by some delicate detached ornament, that will neither interfere with its curvature nor disturb the breadth of its repose. But a series of pictures on a dome like those of St. Paul's at present, not only divide the dome, but by their backgrounds visually annihilate the surface they cover. The matter is made worse, however, when one picture covers the entire concave, as then the whole dome disappears at once; for wherever the eye turns it is carried out of it; visually it is a dome no longer. I would therefore humbly suggest the obliteration of the present paintings, and the relief of the vast expanse of the dome by two tiers of detached ornaments of simple and dignified character, analogous, in general shape and disposition, to wreaths or medallions, but resembling in effect rather the delicate studding of the firmament grouped into equal and regular constellations. They might be circular, polygonal, or stellar in shape, and harmoniously coloured, or there might be two forms and sizes alternating. They could be formed into hollow figures or rings, in which might be inserted sacred emblems, as those of the Christian virtues; symbolic animals, as the lion, eagle, dove; attributes of St. Paul, arms of the see of London, &c. The whole figure must be made the subject of careful design, and placed to correspond to the intercolumniations of the dome tower below, one over each.

All the minor cupolas of nave, choir, and aisles I would decorate in like manner, but of course on a smaller and simpler scale. In these, one tier of ornaments only, surrounding a centre one, would be sufficient. The spandrils formed by these cupolas and the panels of the pendentives of the dome tower, if not decorated with figures, might be similarly relieved. The panels of the spherical ceiling of the apsis above the clerestory windows. I would relieve by similar centre ornaments, which might be of the circular or star-shaped form just described, or of one corresponding better to the shape of the panels they decorate. The same general character of design, indeed, must pervade not only these ornaments of the ceiling and dome, but also those of the wall panels below. As to the material of these decorations, I would have all subjects and figures in frescoes, though an old vehicle, and one, perhaps, not fully mastered in this country, because it is the best fitted for association with architecture, and most adapted to the present advanced state of painting.

I am not insensible to the claims of pictorial and geometrical mosaic, which is a beautiful and durable architectural decoration; but besides being expensive, it seems to me to belong, as regards its process, to a more infantile condition of pictorial art. Fresco is, doubtless, the destined architectural decoration of the future, and I would suggest it for St. Paul's, confining it, however, to the historical and figure subjects. Arabesque and other decorations, both of walls and ceilings, I would execute simply in what painters call "dead colour;" *i. e.* painting grounded in oil and finished in turpentine, which would be a durable embellishment, and unite sufficiently with the frescoes.

Gold would be required round the frescoes in their frames or borders, which may be white or nearly so,—at least a shade or two lighter than the wall, as any dark colour in these border-mouldings would overpower the frescoes, upon the strength and tone of which the regulation of this matter must rest.

In reference to sculpture, as the interior of St. Paul's is otherwise deficient in provision for detached figures, I propose placing in each of the great niche-shaped window recesses a colossal statue of some apostle or evangelist, or an allegorical or emblematic group, though some, I fear, would object to this position for sculpture with respect to the light by which it is to be seen. Those who might so object, I would ask, How is it that painters sometimes light up their pictures by the sun *in* the picture, coming behind the figures, and produce thereby the most beautiful effect? How is it that this is done in works where it is of the utmost importance to see the figures which are the principal objects portrayed? The figures, I grant, would not be seen so well in front, but it should be remem-

See p. 18, *ante*.

bered that these figures are for the decoration of the architecture, to contribute to the general effect of the interior, not to challenge attention to themselves, as in a sculpture gallery. They are part of a great whole, to which I have not the least doubt of their successfully contributing. If you cannot distinctly see these figures in a front view, neither can you, in any view, statues on the top of a building where they are placed exclusively to complete the effect of the *façade* or *ensemble* of the building. But it would only be in front that the statue could not so well be lit, for every other view, whether profile, three-quarters, or the intermediates, would have light in abundance.

In each of the niches of the drum or dome tower—I mean those in the pilasterade—I would also place an appropriate statue.

As to the fittings,—pulpit, reading-desk, stalls, &c. I can say little about them as I have no knowledge of their present form and condition. Their position along with the general arrangement by which the service is held in the choir I think cannot be improved; and I should think it needed no defence but for remarks made in the recent discussion on the subject in the *Builder*. The opinion involved in these remarks is the same as put forth by Mr. Wightwick in his "Palace of Architecture," where he gives his own view of a Protestant cathedral, and which I have always looked upon as the least judicious of anything in his elegant work. He considers that a church should be built to contain a congregation and no more, just as a parish church is; "free space and as large a number of sitters as can be accommodated within the range of a preacher's voice being the chief desiderata." Now if a cathedral church is to have any superiority over other churches beyond its mere name (and without some superiority it is absurd to call it a cathedral), it must consist in some distinction in respect of form, size, design, or decoration; and though we can have the greatest richness and beauty exhibited on a scale within the limits prescribed by utility, yet no means of giving the needful supremacy, seems to me more legitimate than superiority of size. Besides, magnitude of scale is assisting to the embodiment of the grander qualities of art, and the marking of our yearnings after the infinite, our "relations to the mightiest works of the Creator" which architecture is capable of doing and has done in the great periods of art. Greatness of scale or magnitude is a legitimate means of giving grandeur and power: it is an element of sublime architecture; for though mean size, as Ruskin has well observed, will not ennoble a mere design, yet every increase of magnitude will bestow upon it a certain degree of nobleness. But beyond a certain very limited size a church needs not be extended for actual service. Wren says, and says truly, that a voice could not be heard much more than 60 feet in front, and gives 90 feet as the internal length which an oratory should not exceed. We are, therefore, in order to obtain distinction by size, led to the addition of features not essential to the services; and I can see no impropriety in having a chief or cathedral church, as St. Paul's, planned of such size and form that the service only requires, and must be confined to, one portion of it, as long as that portion is originally well adapted to it, which it always may be.* The rest is justifiable as a great hall or solemn approach, sacred to devout and preparatory reflection, and adding to the sanctity of the more essential part. It is a noble accessory to the temple *proper*, which it separates the more effectually from the external world; and is to be decorated with the symbols of lofty and sacred thought, furnished from the various resources of the fine arts. I see no force in the objections raised against this idea: the theory that would confine us to one chamber of the net size for use, in such a church, would, if carried out, limit us to but the one sitting-room in our dwellings,—would forbid ante-rooms to state apartments and audience-chambers,—and make little difference between a palace and a cottage,—in short, would obstruct all architectural enterprise. Besides, I think there is, notwithstanding all that has been said against it, no fitter place for monuments to departed greatness or worth, while they are conceived and disposed in harmony with that solemn spirit that should reign in and pervade the place. I do not like the semi-pagan idea of the Germans on this subject, and question if an English Walhalla would be much relished. I should prefer to see every great man commemorated in the great national sanctuary, as it would best recognise the union that exists between greatness and goodness. If he be also a good man, *i. e.* if his life was in keeping with his writings or his works, so much the better; but let us exclude from such honours no great mind that has conferred any real benefit on mankind, unless, which I think and trust is seldom the case, such mind was infamous for its vices. Indeed, I look to votive statues, and other memorials of eminent men, as the crowning embellishment,—the final means of awakening to full and beauteous life the vast aisles of St. Paul's Cathedral. Designed and executed under proper conditions, and not only of fitting character, but suited to the particular situation in the edifice they are intended to occupy,—the cathedral, by their increased display, might become a perfect glory to the nation.

The making a cathedral or great metropolitan temple so much larger than the exigencies of the church service dictate, appears to me a fitting and graceful offering to religion. It is, at least, a wiser and better issue of the spirit of sacrifice than, as a well-known writer recommends, offering precious things merely because they are costly; for besides furnishing increased scope for employing on the house of God our treasures of wisdom and art, it is not without its elevating and purifying effect on the minds of the worshippers, by whom the whole building might be filled on solemn and great occasions. I know that the Christian church is independent of all material and extraneous grandeur: the glory of the church must ever be that which Solomon considered the highest honour of his rich fame,—"That he whom the heavens cannot contain should put his name there;" but I think that all that greatness of character which art is capable of bestowing, is due to the shrine of religion, and is quite in harmony with its own pure influence.

I have but one remark more. Before commencing to repaint or paper our dwellings, we are anxious generally to remove any nuisance that might happen to exist at the time, such, for example, as arises from an obstructed sewer, offensive to the olfactory nerve; or perchance there is a smoky chimney; something, in short, which, if not removed, would go far to spoil our embellishments. An evil analogous to this exists at St. Paul's, an evil which, if permitted to remain, would render it a folly and a vanity to touch the cathedral at all. I say analogous, for there is no *physical* nuisance, at least that I am aware of: the nuisance I allude to is one that offends chiefly the moral or religious sense, though it is felt in more ways than one. Before proceeding to decorate St. Paul's Cathedral, I would turn out the takers of show-money, and the vendors of small guide-books, the sale of which latter should rest in future with some bookseller in the neighbourhood. I know but little of the customs of the East in reference to sacred edifices; but I should not hesitate to say that no moslem or Pagan shrine was ever so desecrated as this Cathedral of St. Paul. Much has lately been conjectured about Wren's anticipations relative to its future destination. Now, whatever these were, he certainly never dreamt of his great work becoming what it now chiefly is,—a sort of prospect tower,—a whispering-gallery,—a curiosity shop! Tell it not to the Mahommedan,—publish it not in India or China, that the greatest temple of the first nation in Christendom is degraded, for six days of the week, to the worship of Mammon in its pettiest and most vulgar of forms. Tell it not to the heathen, lest they should thank their tutelar deities that they *are* heathen.

SAMUEL HUGGINS.

* Not that I approve of the cruciform plan: the idea I am now defending could, I conceive, be better embodied in other forms.

LORDLY LECTURERS.—Viscount Goderich, M.P. for Hull, lately delivered a lecture on entomology before the Working Tailors' Association of London.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

PROFESSOR COCKERELL commenced his second lecture (January 13th) by urging the student to the pursuit of the natural inquiry into the source of that mental elevation and gratification arising from a sense of beauty in the finest productions of architecture. Such a study must necessarily lead to just conclusions on the theory, and to success in the practice of the art. In painting and sculpture, the theory of the beautiful might be directly traced to the face of nature, and to the moral affections of mankind; but in architecture, it was only by analogy that any model could be derived from nature; and even that analogy must be embodied in conventional forms, which the common consent of all nations recognised as representations of beauty and harmony. Architecture, therefore, was in a great measure dependent on human science, and on books and precedents. Socrates had dwelt on the importance of books to the architect,—referring probably to some of the forty-one writers on the art, whose works, though mentioned by Vitruvius, are altogether lost. This, amongst other facts, proved that the Greeks had more works than we have on the theory of architecture. The recommendation to possess and study the works of the old masters of the art could not be regarded as pedantic. The works of every modern traveller and annotator, down to that of Mr. Penrose, furnished fresh proofs of the accuracy of Vitruvius; and, as the professor could not recommend his own principles as authoritative, he could not do better than advise the careful study of works which, having survived so many critical inquiries, were worthy of the utmost regard and respect. Wherever, indeed, celebrity was generally accorded to any individual, the student might feel assured that in the works or practice of that person some principle of art might be discovered which it was his duty to appropriate to himself; and if the personal acquaintance of its author could be made, it would increase the facility and promote the benefit to be derived. Thus, in his own travels, he had always, without formal introduction, sought the society of eminent foreign architects, and with the best effect, his advances being invariably met with the utmost kindness.

In proceeding to consider the theories of Vitruvius in comparison with the existing remains of ancient architecture, Professor Cockerell offered some remarks upon the veneration for antiquity which must accompany the study and practice of all art, whether Grecian or Gothic. As Sir C. Wren observes, the study of architecture was in fact, in some shape or other, the study of antiquity. The Greek colonists in Africa, in Sicily, and in Italy, always displayed their regard for the most antique forms of the architecture which they took with them from the mother country; and in like manner the Gothic architecture of England, in its most ancient form, was esteemed and practiced in our own American colonies.

In classical architecture the most striking and characteristic feature was the post and beam system, or that of *trabeation*, as contrasted with the system founded upon the employment of the arch and the vault. The latter, although known and practised 1,700 years before Christ, were never used for sacred purposes, but merely for sewers, bridges, subterranean chambers, &c. Vitruvius spoke of the arch as a matter of course and as a subject of practical detail; but he never dignified it by the name of architecture. The whole system of the Pantheon, erected by Marcus Agrippa in the time of Augustus, was that of the arch and vault; but *trabeation* was employed externally, as essential to the ornament and beauty of the buildings. Perhaps the arch might have been rejected by the ancients for sacred purposes from its tendency to self-destruction in case its abutments should become impaired. He believed that the arch was familiar both to the Egyptians and the Greeks; and it was certainly employed on all occasions of use and necessity (in theatres, basilicas, &c.) both by the Romans and the Etruscans. One reason for the use of the trabeated system might be found in the religious necessity for the tangible presence of the Deity in the classic temple. The figures of the gods thus placed were originally

small, and a simple square cella or tabernacle was sufficient to contain them; but when these models were enlarged by Phidias to the colossal scale of Egyptian works, the temples were progressively enlarged; thus leading from the cella to the temple in antis, the prostyle, dipteral, pseudo-dipteral, and other varieties of form,—in all of which, however, though increased in importance and magnitude, the original trabeated system was preserved. Another influence on the general system was to be found in the prevalent use of large stones, which was justly referred to by Vitruvius as of the utmost importance to the dignity of architecture. In the Book of Judges numerous instances were mentioned of large and costly stones being used in the construction of Solomon's Temple; and it was clear that Greek, Jew, and Pagan, all regarded the exercise of their skill and labour, in the application of large stones to the erection of sacred edifices, as a most dignified and acceptable act of propitiation and homage to the Omnipotent. The promotion of this custom was aided by the frequent erection of city walls of great extent and magnitude, which were necessarily often built of large and unhewn stones. The importance attached to the possession of great physical strength was sufficiently shown in the works of Homer and other ancient poets; and there could be no doubt that such works as those referred to would have a powerful effect on the imagination of the uninformed,—an effect, indeed, which the dilettante architect, engaged in the study of what he called proportion and ornamentation, was too apt to disregard. Thus, in laying the foundation of the National Monument at Edinburgh, he (the lecturer) had found that the effect of some large stones there employed (four of which weighed about three tons each) was much better appreciated by the intelligent tradesmen, artificers, and labourers present, than by more educated persons. In the castle at Chester, six monolithic columns weighing ten tons each were placed before the Court of Justice, and by an ingenious and skilful exertion on the part of Mr. Harrison, the architect, these were all placed upon their pedestals in one night. The effect upon the magistrates, on their arrival at the court the next morning, was so powerful that the architect was enabled to carry out, with admirable effect, some matters in which his taste and judgment might otherwise have been overruled. Amongst other instances of large stones in classical buildings, he referred to the propylæa at Athens, the temple of Egina, and the treasury of Atreus, as well as to the story which relates that the architect of the temple of Diana at Ephesus was informed by the goddess herself, in a dream, of the means by which he could raise the large stones which he was desirous to use. This point should not be overlooked by modern architects, as the contrary practice had often an injurious effect. The apparent magnitude of classic temples was, indeed, very much due to the size of the stones employed; and it was difficult to persuade any person looking at such buildings as the Parthenon, drawn to the same scale as St. Paul's or St. Peter's, that the former were, in fact, so comparatively diminutive. The sublime, however, in architecture, as the latter buildings proved, might be successfully realised by the concrete or conglomerate system, in which small stones were united and lifted into the air in one mighty mass.

The late professor of the Royal Academy, Mr. Wilkins, had sought, though with no great success, to reconcile the theories of Vitruvius with the remains of the Greek temples; but the lapse of 500 years between these works, and the consequent fluctuations of taste, would sufficiently account for the variations. The labours of architects and antiquaries had, however, fully placed before the world the beauties of the Grecian column, in all its minute details; and such a model of perfect art could not be too carefully studied or too much admired. In the modern application of classical art, almost the only field for the exercise of taste was the entablature,—architrave, frieze, and cornice constituting the chief stock in trade of the architect; and in the application of these much benefit might be derived from a study of the remains of Herculaneum and Pompeii.

In respect to the *collocation* of columns, Professor Cockerell (still connecting his remarks with the rules laid down by Vitruvius) reprobated the custom formerly prevalent, of attaching columns to the walls of buildings without sufficient space for the insertion of adequate doors and windows. In such cases, he observed, larger intercolumniations should be used than those prescribed by Vitravius, whose rules applied only to isolated columns. In regard to the *pyramidation* of columns, he referred to the temple of Tivoli, in which that arrangement was to be observed; to the practice of the Egyptian and Gothic architects; and to modern French houses, the fronts of which always incline pyramidically. The necessity of this arrangement, he added, was strikingly shown by the peristyle around the spire of All Souls' Church, in Portland-place, the columns in which appear to incline outwardly. The *gradation* of different parts was exemplified by the use of a smaller order in subordination to a large one in Egyptian temples; by the different scales of the orders used on the Acropolis at Athens, and by the use of arches of different sizes in Gothic buildings. This rule of gradation was skillfully seized by Palladio, who made it a grand secret of the beauty of his compositions.

The lecture terminated with some notices of the attic order and the use of caryatides.

IRISH ARCHITECTURAL ANTIQUITIES.

IN your paper of the 1st instant, you notice the attempt that is being made to raise funds for the repair of the ancient stone-roofed chapel in this town (Killaloe); and you express a hope that nothing will be done without proper professional advice. May I be permitted to state that no *restoration* is contemplated, but literally a *reparation* of what has fallen to ruin, viz. the rebuilding of the north wall, the replacing the stones that have fallen from the roof, the eradication of the roots of trees, lichens, &c. which have reduced the roof to its present ruinous condition, and the excavation of the earth which has accumulated to the height of 3 feet around the building. Dr. Petrie, the eminent antiquary, has kindly promised his advice, and the committee of the St. Patrick's Ecclesiological Society are also interesting themselves in the undertaking. I trust this is a sufficient guarantee that it will be judiciously effected. Small, however, as is the sum required for the purpose, I grieve to say that, owing to the little interest felt in such matters here, I have not yet been able to procure it; nor shall I, unless those who, though unconnected with the locality, would desire to see so honourable a monument of antiquity preserved from decay, will kindly aid me. The greater part of what I have already gotten has been contributed in small sums of five or ten shillings, transmitted by postage-stamps.

About half a mile from the town, on an island in the Shannon, are the ruins of a similar building. It is smaller than S. Flannan's; and, curiously enough, its *chancel* is in perfect preservation, while *the nave* has fallen in,—the contrary being the case here. A comparison of the two gives us an accurate notion of what each was in its entirety.

If I am not trespassing at too great length upon your space, may I state that considerable alterations and repairs have just been effected in the chancel of our cathedral. An open roof, of very lofty pitch, has replaced the hideous covered ceiling which formerly disfigured the church; and thus the beautiful eastern window is exhibited in all its graceful proportions. The lower part of the window, the mouldings of which have been broken off and plastered over, has been removed, and the different coats of paint and whitewash with which it had been smeared have been carefully cleaned off. The same cleansing operation has been performed upon the corbels and string course, with the most gratifying results. In the course of the repairs, several interesting features were discoved, viz. the existence of a double aumbrey and piscina on the south side of the east window; of a doorway on the north of the chancel, which seems to have led into the sacristy; of another doorway, behind the stalls, which was an entrance to the church before the south transept was built, &c. &c. Marks were found in the walls which clearly indicated that the church had at one time a groined roof; and here and there in the walls were found beautifully carved stones, used as common building stones, evidently belonging to some former and more splendid cathedral built here. Every care has been taken to make the most of these discoveries.

Altogether, though there is much that might be better, yet, considering the very limited means at their command, the works reflect great credit upon the architects of the Ecclesiastical Commissioners who planned them, and upon the builders, Messrs. Duggan and Macleane, of Limerick, who executed them.

W. EDWARDS, Clerk,
Curate of the Cathedral of Killaloe.

THE ARCHITECTUAL MUSEUM.*

A CORRESPONDENT, with whose views I in the main agree, urges the more moderate use of carving in our churches as a means of improving its quality. I fully agree with him in thinking that a very small quantity, done with true artistic feeling, is infinitely to be preferred to a large amount indifferently done; and I quite think that it is absurd to use such decorations, or even stained-glass or painting, where poverty forbids even substantial and genuine construction. As, however, this age is not exactly an age of poverty, and as there are unquestionably many cases in which decorations even of the very highest class may be, and are consistently used, it is undoubtedly of great importance that our workmen should be tutored to execute them as they ought to be done; and the collection of casts and specimens which we are making of the best periods of art, particularly of *Christian* art, is, beyond all doubt, one of the most important aids towards such instruction. Without such a means of reference it is most difficult for an architect to instruct the artists he employs as to the style of art which he wishes to follow or the sentiment it is his object to express. If it is desirable for each architect to collect for his own use casts of those examples which he deems the best, much more is it so that such collection should, *if all good*, be united as a fund to which each may refer. It is the object of those engaged in forming the "Architectural Museum" to collect the very best and noblest specimens which their knowledge and the means at their command enable them to procure, such as it would be most difficult for us without such a collection to point out for the study of our workmen. It is not our object to render carving *abundant* or *cheap*, but simply to aid, so far as we can, those who wish to make it *good*.

GEO. GILBERT SCOTT.

SPRING-HILL COLLEGE COMPETITION.

SEEING in your paper the advertisement to architects, and attracted by the promise held out of "an architect of eminence" being called in to the adjudication, I applied for, and have received, the printed particulars of this competition "looming in the future," which I beg to send you as a pretty fair specimen of "Birmingham Assurance."

The terms of competition may be thus briefly stated. The competitors, on their part, are each to repair to Birmingham and take their own levels of site (none being given): they are to prepare and send in a complete set of drawings, even to plans of foundation, drainage, and roof, together with a specification; and they are to pay the cost of carriage thereof to and fro; warned, as they are by their very complimentary clients, of the probability there is that not one of the designs may prove worth carriage, porterage, powder, or shot. This sums up the part the competitors are to play. It is very clear and very *positive*.

Not so the committee's. On the part of these gentlemen everything is delightfully wide, vague, misty, *negative*.

"—— If they will, they *will*; we may depend on't;
And if they won't, *they won't*;—so there's an end on't."

* We are asked to mention that what Mr. Chantrell has offered to the Museum, is not a *runic cross*, as stated in our last notice, but the cast of an ancient stone pillar, relating to the sun and pole star, about 10 feet long.

They evidently consider themselves, and literally *are, under no obligation whatever*. Thus,

They propose to give two premiums; but they add (dismal proviso!) that perhaps, if they think fit, they *won't* give any premium whatever.

They "will obtain the assistance of an architect of eminence;" but then, if they see fit, they will reject his decision,—his "*eminence*," or, as the lawyers say, "anything else to the contrary hereof in anywise notwithstanding." This, by the bye, seems the unkindest cut of all.

They will take possession of both first and second design; but then again, they *won't* pay the first premium (100*l.*) save as "*a settler*" to all claims on their bounty; just as if 100*l.* were an honest remuneration for the best out of some score of designs for a 10,000*l.* building. As to the second design, I never had but one opportunity of knowing what a committee wanted with such a document, and that occurred on the occasion of my once gaining a second premium for a design, which it transpired the committee had determined to carry into execution; so I confess to an ugly prejudice against the retention of *second* designs.

Finally (to complete the *won'ts*, the *don'ts*, and the *shan'ts* of our droll committee), they *don't* bind themselves to employ the author of the chosen design.

Surely, Mr. Editor, this is a competition that will be scouted by every respectable architect. I make these comments on it before the drawings go in (*if any are to go*), and beg you to vindicate the profession, as of yore, by exposing this most brazen proposal of the Spring Hill College competition committee. GUILLAUME.

THE MATERIAL FOR THE NATIONAL GALLERY.

As the period draws near for deciding on some particulars touching the proposed new National Gallery, you and your readers will be distracted with suggestions of unavailing worth and impossible adoption. I should not, therefore, run with the scribblers in the plague of letter-writing on this subject, if I did not in the outset furnish you with name and antecedents deserving attention, thus assuring you that your space is not plundered nor your reader's patience defrauded.

I take for granted that after all said and done on this subject we are to have a grand, extensive, and complete building (or series of buildings), calculated, by its noble proportions and imposing elevation, to reflect dignity on the nation and honour on the period of its inauguration.

Keeping these objects in view, I conceive it possible and convenient to render other great public good subservient to attaining the one comprehensive end.

I propose that the building shall be absolutely and entirely of granite.

I would also suggest, but without making this a part of my main scheme, that we should have at least one building in this country rivalling all similar structures, antique and classical, of the Doric order, ponderous and magnificent in its simplicity, and calculated, as is this order of architecture, where there is no stint of space or material, to embody and symbolize the solidity and integrity of the native English character.

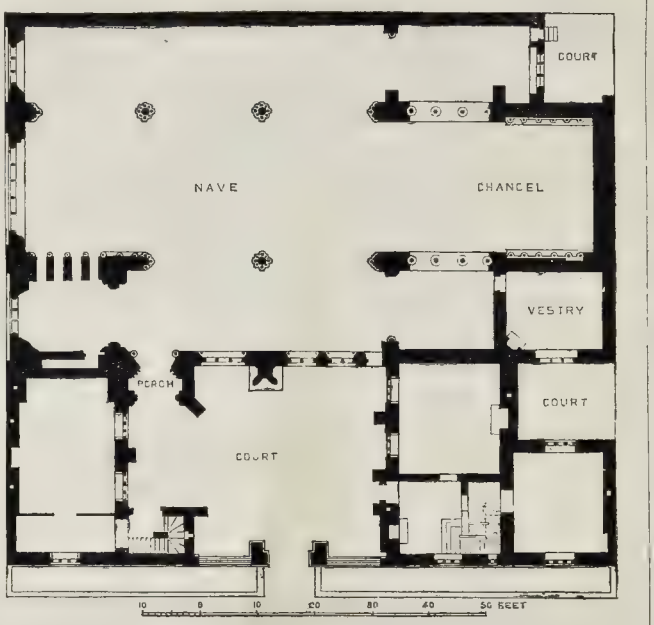
Reverting, then, to the building being of granite, I propose that the Millbank Penitentiary should be removed altogether from London, and that the felons should be employed in working granite on any convenient spot where it abounds.

The site of the penitentiary would fetch a very large sum, which would go far to effect the removal of an accumulated felonry from amidst a dense population, where they cannot be adequately employed, to a comparative wilderness where they can.

Rough hewing granite cannot be done by machinery, and is hard work for man. It consumes time and labour, both of which we have to spare, festering in our criminal prisons. Transportation, as a punishment, is becoming impossible, and ceases to terrify.

I ignore any idea of competing with the honest labourer: the work to be done is extra to all legitimate employment, and is the nation's due. It would give an increased occupation to the skilled artisan to finish the blocks, and to the builder and labourer in the enlarged breadth and elevation of the structure.

If it be objected that the expense of forming a new and gigantic felon-working establishment in a granite district will be out of all proportion to the results in obtaining material for a National Gallery, however extensive, it may be replied, first, that such an institution must be speedily founded, apart from any other consideration than providing the felon continuous labour; and, secondly, that with all our great national establishments granite, of all things, will be in unceasing demand. PŒSTUM.



PLAN OF ALL SAINTS' CHURCH.

ALL SAINTS' CHURCH, MARGARET-STREET, CAVENDISH-SQUARE.

ON the north side of Margaret-street, Cavendish-square, an important architectural work has quietly proceeded almost to completion, at least externally. We allude to the church dedicated to All Saints, built from the designs of Mr. Butterfield, and of which we now give a plan and view. It stands on a plot of land 108 feet wide and 98 feet deep, and includes, as shown in the plan, schools on the west side, with library and master's-room, and a clergy-house on the east side: the space between these forms a yard 46 feet wide and 35 feet deep, bounded northward by the side of the church, and next the street by a brick and iron inclosure, with large gateway. At the west-end is a tower with a lofty spire, reaching to the height of 222 feet from the ground to the top of the vane. The spire is of timber braced with iron internally, and covered with slates, with lead bands.

The buildings are faced with red bricks, having the arches, string-courses, &c. strongly marked by black bricks, which are also used to produce ornamental forms elsewhere. The chancel is more lofty than the nave, and both are terminated by an ornamental ridge. The church has a nave 63 feet long and 27 feet wide, with north aisle 13 feet 4 inches wide, and south aisle 16 feet 9 inches wide. The chancel is 37 feet long and 27 feet wide, with an aisle 23 feet by 13 feet.

The dressings of the church externally are of Yorkshire stone, from near Whitby. The centre buttress against the south side of church is elaborated, and is carried up a considerable height, terminating in a pinnacle and cross. On the face of the upper part of the buttress is a sculptured panel, typifying the "Annunciation."

Within, the nave is 75 feet high, and has an open timber roof. The principals are placed together in pairs, and filled in with perforated-work. The interior is as yet incomplete, but enough is done to lead us to believe that it will show a greater amount of magnificence than any other modern church in the metropolis. The chancel arch is of alabaster, so too are the foliaged capitals of the columns in the nave. The walls of the chancel are lined with the same material, and will display in panels, formed by carvings, paintings in fresco by Mr. Dyce. There is a groined ceiling here, formed of alabaster and chalk; and at the sides of the chancel are columns of serpentine, with marble capitals and alabaster tracery. Around the main arches of the nave, and elsewhere, coloured bricks are disposed, and there will be rich tile paving, a font under the tower-arch, and stained glass to complete the general effect. The piers are generally of Peterhead granite. The only stained glass at present in the church is in the nave clerestory windows, and is by the Messrs. O'Connor. It is of geometrical pattern, without subjects or figures. The west window, which is of large size, representing the genealogy of our Lord, is being executed by M. Alfred Gerente, in Paris. The carving, by Mr. Myers, is beautifully executed. Mr. Kelk is the general contractor; and we have the testimony of the architect that he has spared no pains to perform his contract in the best manner.

The church is being built by private subscription, and Mr. A. B. Hope is understood to be one of the principal contributors.

GUTTA PERCHA TUBING.—Mr. W. Burgess, of Newgate-street, has patented a method of manufacturing gutta percha tubes with corrugations or screw forms, to enable them to be bent into a variety of curves, and yet preserve the tubular aperture clear. For this purpose he uses a screw-threaded mandril.



ALL SAINTS' CHURCH, MARGARET-STREET, CAVENDISH-SQUARE.—Mr. Butterfield, Architect.

THE COLOSSUS OF PICCADILLY.

Is this misplaced and truly ridiculous statue to remain in *statu quo?* To artists, but particularly to all foreigners, it is a standing joke: seen from below it presents to view but girth and ventrals; from the distance, a caricature effigy, amongst cowls and chimney pots! Better make an evolution by military word of command,—"*as you were*," and resolve it again into artillery, than suffer it to occupy a false position (like too many other British monuments), exciting the derision of all beholders.

On a block of about 20 feet in height, planted in an open space, such as the new long walk in Kensington-gardens, it would occupy an appropriate site midway between the Coalbrookdale-gates* and the spire and the white house at the other extreme, or even in St. James's-park.

No living English subject would offer a slight to the transcendant merits of the great hero so lately withdrawn from finite honours to immortal fame; but in suggesting an appropriate site for a monument for which no temple could offer a niche, all veneration is intended.

Let the pedestal be a rock like that of Peter the Great at St. Petersburgh. Ireland's granite (at Kingstown, close to a noble harbour) would supply a mass of any required dimensions: it could not be ungrateful to the hero's countrymen that the colossal memorial should rest on an Irish *basis*.

EFFECT OF SMOKE IN THE DESTRUCTION OF ARCHITECTURE.

At a civil banquet recently given by the Lord Mayor of York, the Rev. Wm. Vernon Harcourt, in returning thanks for the Dean and Chapter, made some observations on the difficulty which the guardians of cathedrals find in overtaking or keeping pace with the progress of decay to which those noble fabrics are subject in our great cities, however energetically the work of restoration may be carried on.

He stated that within a recollection of some forty years he had seen parts of York Minster perfectly restored, which are now sensibly defaced. He said that where the air is impregnated with smoke, and with the other products of imperfect combustion, *no material* can resist its corrosive power, and instanced marble, glass, and even slate itself, of the rapid perishing of which there have been remarkable examples in London.

He compared the permanence of the fabrics of *foreign* cathedrals with the rapid deterioration of those built with equally durable materials in *England*, and showed that there was no reason for attributing the difference to a greater *humidity* of atmosphere, or to any other cause than the difference between the combustion of *wood* and *coal*.

He instanced the condition of the masonry and carving of his own parish church, at a distance of but seven miles from York, in an equally moist air and similar temperature, as an evidence of the cause of decay in our city churches completely in point. The parish church of Bolton Percy is of the *same date* and of the *same stone* as parts of York Minster which have perished, and been renewed, and in spots have perished again, whilst in the country church the arrises of the mullions, and the tracery and carvings, are as sharp and fresh as when it was built,—more than four hundred years ago.

From these facts Mr. Vernon Harcourt inferred that (without entering into the question whether human life is capable of entirely resisting agencies which destroy brass and marble, and cause masses of stone to crumble rapidly away), if any one is desirous of preserving the finest monuments of art, and of contributing in the most effectual and economical manner to the sustenance of our most admired architecture, he ought to exert himself in suppressing, as far as possible, those enormous torrents of smoke, with sulphurous vapours clinging to it, which destroy all that it settles upon, so unnecessarily vomited forth by the chimneys of furnaces that are daily more and more arising around us.

These remarks appeared to one who heard them deserving the attention both of the authorities to whom they were addressed and of others; for though we cannot at present hope to rid our cities entirely of smoke, the amount of the evil is certainly greatly aggravated by the introduction of a multitude of furnaces not consuming their own smoke, which it is well known they may with little trouble be made to do. For the *entire* banishment of smoke in open fire-places we must wait for new inventions; but the means of perfect combustion in close stoves and furnaces are at hand to every one.

* The iron gates do not satisfy us in their new position: they are wanting in the solidity and dignity which belong to the walking-place of a city. The labels to the plants here, for which we have to thank poor Loudon, make a walk through these gardens a means of knowledge. We all remember hearing of the old lady who took one of these for a head stone, and, after reading two long Latin words, said, "Oh, he was evidently a foreigner, but it's a shame they didn't give him Christian burial." As we walked through the other morning, and very pleasant the green turf looked when the sun was good enough to touch it, we heard a positive repetition of the error. A stolid-looking woman was studying one of them, and we heard her read, in a well-satisfied tone, rightly or wrongly we did not stop to see, "*Rosa Tormentosa?* Ah! that was a very naughty girl, you may depend on it."

ADMISSION TO THE LECTURES AT THE ROYAL ACADEMY.

I would take leave to ask, whether the lectures at the Royal Academy might not be rendered more practically useful than they are at present, by admitting the public, and those who now belong to the several Schools of Design, in a general way, or with less difficulty than at present.

At the present time the lectures and lecturers are but very indifferently attended. It would be more encouraging to the lecturer, and more beneficial to students generally, if a different course were pursued.

If the R.A.'s were to bestow a little expense on cleansing and better lighting the several rooms, it might not be amiss. At present it is very like entering the Inquisition—so gloomy, dark, and dirty are the several apartments. A better lecture-room is required.

A Subscriber.

THE LIVERPOOL ARCHITECTURAL SOCIETY.

At a meeting of this society, held on the 12th, Mr. H. P. Horner in the chair, the Secretary, Mr. Boult, said, with reference to a communication from the Literary and Philosophical Society, on the subject of commemorating the centenary of Roscoe's birth, which would be on the 8th of March next, that a deputation had been appointed to confer with the delegates of the other learned societies on the necessary arrangements to celebrate the event.

Mr. Newlands, the borough engineer, stated that he was absent from home at the latter end of December, and when he returned he got the *Builders* which had been left for him in his absence. In one of the *Builders* there was a foot-note to a review of Mr. Baly's statement of the proceedings of the committee appointed to promote the establishment of baths and washhouses in London, in which note he (Mr. Newlands) was spoken of in no very flattering terms. He immediately wrote for Mr. Baly's book, to see what that gentleman had said of him. Mr. Newlands then read from the book a foot-note, headed "Note by the Committee of Works," in which he was charged with being guilty of "unscrupulous plagiarism in his report on sanitary improvements to the health committee of the corporation of Liverpool, published in 1848." After saying that this was a very serious charge against a professional man, Mr. Newlands entered into details to show the groundlessness of the charge. The chairman felt that Mr. Newlands' disavowal and explanation were quite sufficient to satisfy them, and ought to satisfy the public; but if Mr. Newlands, as a professional man, wished further to establish his entire exculpation from this accusation, he thought there would be no objection to appoint a committee. After some conversation, it was resolved that the secretary should write to the committee from whom the charge emanated, stating that the society had had their attention directed to it by Mr. Newlands, who wished an inquiry to be made into it, and requested that the committee would give their authority for the statement.

Mr. Boult drew attention to the course of conduct adopted by the Dock Committee in reference to the contract for the new works at Wapping. The course that had been adopted by the Dock Committee was one that was not unfrequently pressed upon the attention of professional men in private practice, and he thought it only illustrated the great extent to which gentlemen, as members of committees, were willing to take every advantage which they possibly could, and advantages which, in their individual capacities, many of them would be perfectly ashamed to take. The chairman thought it did not come within the province of the society, as architects, to discuss a question of this kind, and the subject was allowed to drop.

Mr. T. D. Barry then read a paper entitled "A Glance at the Neighbouring Churches." The churches noticed were those of Sefton, Ormskirk, and Aughton.

THE INTENDED TOWN-HALL AT LEEDS.

The paragraph in last week's *Athenæum*, relative to the Leeds Town-hall competition, mentioned also in your own pages, has, no doubt, engaged your attention. If all that was there stated as coming from a correspondent be correct, that competition has been marked by several highly unusual circumstances, and of good augury also for the future. It seems to have been conducted with perfect good faith and impartiality, and with a sincere desire to select the very best design offered; for instead of wilfully relying upon their own judgment, and perhaps exercising their authority very mischievously—as has not unfrequently been done ere now upon similar occasions,—the committee sought the "professional opinion" of Sir C. Barry, for guiding them in their choice of a design, who accordingly pronounced in favour of that by a Mr. Cuthbert Broderick, of Hull, quite a young man in his profession, and formerly pupil of Messrs. Lockwood and Mawson, of Bradford, who were also competitors, and whose design, rather curiously, obtained the second premium. Henceforth Mr. C. Broderick's name will not have to be prefaced by an "*a*," his reputation being now decidedly stamped. Whereas his design might have been the best among those sent in, and yet of no extraordinary merit, we have assurance of its being one of positive excellence, Sir Charles having, according to the writer in your contemporary, "spoken in the highest terms of the general design, and predicted that the new Town-hall would be the most perfect architectural gem out of London!" The last expression, which was perhaps never uttered by Sir Charles himself, takes us somewhat aback, the "architectural gems" in the metropolis being comparatively few,—not at all in proportion either to the opportunities afforded for producing them, or the countless sums that have been expended upon what, if we are to believe the public press, are little better than so many egregious yet costly failures, and an utter reproach to our taste as a nation. The metropolis has scarcely anything of the same kind and date that can vie with St. George's-hall, *alias* the Assize Courts, at Liverpool, or with the façade and portico of the Fitzwilliam Museum, at Cambridge.

The mention of the Liverpool edifice reminds me of one striking point of similarity between that and the future Leeds one. In both instances there was competition, attended in both, as far as we are at present able to judge, with satisfactory results. On each of the two several occasions, young and previously quite unknown talent has suddenly burst into notice. Professor Cockerell has assured us that the Liverpool Assize Courts may claim their place among the happiest productions of contemporary architecture, and we hear now, from no less high authority than Sir C. Barry, the comfortable assurance and prediction that the Leeds Town-hall will prove a veritable gem, unmatched by anything of the kind in the provinces. Yet although such character of the design, from so eminent a quarter, is calculated to excite curiosity even to restlessness, we are left quite in the dark as to what it really is, all the information afforded us being that there will be a portico, and that the style will be Roman Corinthian,—which is rather welcome intelli-

gence just now, when there is too much of attempt to revive obsolete or introduce exotic styles, and when novelty so obtained is substituted for that which ought to rise spontaneously out of artistic treatment and genial originality, which, allowed to have free scope, without regard to mere precedent, would infuse new life and vigour into the styles which have been long naturalised among us, but which Ruskin, with far more of mere dogmatism and virulence than of aught like fair and reasoning criticism,—or, in fact, like criticism at all,—flings upon his "great rubbish heap,"—upon which, by the bye, certain very "eloquent" books seem to have been flung already.

But all this is "neither here nor there." Let me jump back again to Leeds, and the architectural gem there, that is to be. The style chosen for it is, we are told, "varied by the somewhat incongruous addition of an arched glass roof, evidently suggested by the Crystal Palace. To conceal the incongruity from the front view, Sir C. Barry proposes a cupola near the portico." It would seem then that, after all, the "gem" needed to be further polished up. Knowing nothing of the design itself, I can only say that supposing it to have been originally well planned, I am rather at a loss to understand how so considerable an addition to it as a cupola can be made without reshaping it more or less.

However, something further will, no doubt, transpire before long, and after eulogium we shall obtain something like accurate and intelligible description, if not one or more drawings also, of the architectural gem which is to shed its lustre upon the town of Leeds. Z.

IRISH BUILDING NOTES.

THE new buildings recently authorised to be erected at Maynooth College are now complete, but most of the fitments are in an unfinished state. The late Mr. Pugin furnished the designs. We are informed that the original contract was 23,500*l.*; for drains and excavations, 1,775*l.*; for extra works, 834*l.*; incidents, 25*l.*; besides another sum of 5,728*l.* granted for alterations, &c., and maintenance of the apartments of president, vice-president, professors, and resident officers' rooms, the several halls, chapels, &c.

Kilkenny Lunatic Asylum is declared to be finished, and is now open for the reception of inmates. It is an extensive building in the Tudor Gothic style, and has been erected by the Commissioners of Public Works from the designs of Mr. G. Papworth, architect. It contains the ordinary reception, board, and master's apartments, &c., with day rooms, dormitories, and a large number of cells, &c. Accommodation for nurses, refractory and convalescent patients; also extensive culinary offices, laundry stores, &c., are provided. The walls are of rubble, with horizontal beds and vertical joints; all the dressings are of punched and drafted, or tooled and chiselled stone.

Our antiquarian readers will be glad to hear that Black Abbey, which has been fast crumbling into ruins, is about to be restored. This abbey is well known to tourists as an example of ancient Irish architecture. We hope its restoration may be entrusted to competent hands.

The delay in the progress of the Dublin Industrial Building occasioned by the late storms, is being speedily got over. The iron arches in the southern hall are nearly refixed, and the metal pillars and woodwork of the north-eastern gallery prostrated, are being replaced in their respective positions.——The R.C. churches of Irishtown and Malahide suffered severely, the former having its gable fronting the road, and a portion of cut stone-work, together with a quantity of the roof framework, blown down.

The new light-house on Spitbank, Cork harbour, is now complete, and will be lighted on the 1st of March. It is built in a depth of 9 feet of water at low tides, and is bored on screw piles, forming with the bracing an open framework coloured red. In the superstructure is an octagonal dwelling, tinted light grey.

The Waterford and Kilkenny Railway Company propose making an important change, by which their present station at Thomastown will be abandoned. The inhabitants (whose convenience will be greatly affected by this move) are said to be very much dissatisfied.

The Bruen Testimonial—a new church, designed by Mr. Derrick, architect,—is progressing. The plan is cruciform, consisting of a nave, transept, and chancel, with a tower 180 feet high. The south side of the nave is completed to the plinth course, on which a bold moulding is continued. The transept and chancel eave courses are highly ornamented, the latter particularly. Style, the Decorated; walls of granite rubble masonry; and the dressings of doors and windows, mullions and corbels, of chiselled limestone.

A railway line from Belfast to Cookstown is in contemplation. The parliamentary plans have been lodged.

A new beet sugar factory has been adapted at Waterford by Mr. Carr. The first samples are stated to be good. It was fully anticipated that the Royal Irish Beet Sugar Company would have been the first to establish a factory in this town.

A new weaving factory is being fitted up in Galway; and in the north of Ireland generally, flax cultivation is extending, and the requisite scutch-mills are becoming more numerous.

Messrs. Scott, of Omagh, and Whelman, of Armagh, have been declared contractors for the new bank building to be erected in Londonderry, for the branch of the Belfast Banking Company, previously noticed by us to be built here from the designs of Mr. Lanyon, architect.

The obstacles hitherto spoken of with reference to the sinking of one pier of the Boyne viaduct have (in the opinion of the engineer and contractors) been obviated. It is also expected that the structure will even yet be finished within the stipulated time.

Mr. Wynne, the Government inspector, has reported favourably of the Londonderry and Coleraine railway works, and the line has been opened for traffic.

The parish Roman Catholic Church of St. Mary, Cork, is stated to be about being rebuilt by subscription, of which a fund has been already collected. The Sailors' Home has been opened.

Various works are in progress at Queenstown, and projected improvements are talked of, which we shall notice hereafter.

The Board of National Education intend erecting three district model schools at Limerick, Waterford, and Kilkenny, with agricultural farms of about 70 acres in connection therewith. Sites have been taken for the purpose, and the designs are by the Board's architect.

The Limerick and Killaloe Company have appointed Mr. Cheyne engineer-in-chief of their intended line.

PROVINCIAL NEWS.

Swindon.—The gas question here is not yet settled, or rather it has been finally decided to form a new company forthwith, in shares of 50*l.* each, and to be called the Swindon Equitable Gas and Coke Company. In a report by the committee read to a meeting chiefly composed of the leading tradesmen of the town, it was stated that very diligent inquiry had been made through eminent engineers in London and the country, and it was evident that gas at Swindon should certainly not exceed 5s. per thousand cubic feet, even with the support they could already depend upon, and that so soon as the entire demand, consequent upon the reduction to that amount, may be supplied from one source, a reduction to even less than 4s. may reasonably be anticipated.

Banbury.—The council of this town have determined upon the erection of a new hall in the Cow Fair, and the erection of a market-house upon the site of the present hall. A report upon the site by Mr. E. G. Bruton, of Oxford, was adopted; the necessary property ordered to be purchased; and a committee appointed to confer with Mr. Bruton, as to preparation of designs and estimates for both buildings.

Bristol.—The new offices for the Local Board of Health are now opened. The front of the building in Prince's-street is of freestone, in the Italian style. The whole has been erected at the expense of Sir John Kerle Haberfield. Mr. Frederick Ashmead was the architect. The offices consist of surveyors', inspectors', and clerks' rooms on the ground-floor; board-room, 32 feet 6 in. long by 20 feet wide, and 15 feet high, with ante-room adjoining on the first floor, and accountant's, clerk's, and other offices, on the second floor. The first and second floors are approached by a stone staircase, 13 feet square. The building, exclusive of the fittings, has cost upwards of one thousand pounds.

Wells.—It is proposed to erect a new gaol at the rear of the Town-hall, for the accommodation of prisoners temporarily lodged there, awaiting trial. Mr. Carver, the county surveyor, has furnished plans and estimates of the proposed works. The cost altogether will amount, it is said, to upwards of 1,000*l.* one-half of which will be borne by the town, and the other half by the county.

Taunton.—A county meeting was to be held at Taunton on 13th inst. for the purpose of adopting measures for the restoration of the monument at Wellington, in Somerset, in honour of the Great Duke, who derived his title from that town. The foundation-stone of the present structure was laid in 1817, but, owing to want of funds, the original design was never completed, and the building is merely the pedestal on which the real monument was intended to be raised. The incessant action of the weather, and the omission of any repairs during so many years, have materially threatened the stability of the fabric.

Penzance.—A proposal was recently made to alter and improve the old workhouse premises, so as to form a slaughtering-house for thirty butchers, with appropriate drainage, ventilation, and other arrangements for cleansing, &c.

Wolverhampton.—The survey-plans of this town, by Mr. Hoggar, are now, it is said, completed. Some thousands of houses, without those conveniences required by the Health of Towns Act, are said to have been already erected since the survey was begun, about twenty months since.——A mural tablet to the memory of the late Mr. G. B. Thorneycroft has just been placed in the Collegiate Church in this town. It is of white marble, exhibiting a sculptured arch or recess, in the florid Gothic style, the panel presenting a profile likeness of the deceased in bas-relief. It is surmounted by his crest and motto. The monument is the production of Mr. Thorneycroft, of London, sculptor.

Coventry.—A reparation of the front of the Free School towards Bishop-street has been commenced. A new window will be inserted there, and the front elevation will be reduced to its ancient form, and redeemed from its present ruinous appearance. It is intended to continue the reparation on the south side.

Newark.—The restoration of the parish church has now commenced in earnest. The organ has been removed from the screen and the chancel arch thrown open. The space on the screen where the organ stood was so narrow, that the numerous improvements made in organ building during the last sixteen years could not be introduced, and the consequence is, that many organs in this locality, such as Grantham, Boston, Doncaster, Chesterfield, &c. now far excel it in point of variety and effect.

Bolton.—Some excitement has prevailed here during the last few weeks relative to the supposed insecure state of the embankment of the principal lodge at Belmont, Sharples, from which the town is supplied with water, and the corporation waterworks committee have paid much attention to the subject. Amongst other measures adopted, they engaged Mr. Hawkesley, the water engineer, to inspect the reservoir, and they have received from him a report, in which he points out various defects, and recommends measures for security which are to be forthwith carried out.

Baxenden.—(Blackburn).—The contractors for the "Prosperity Buildings" here, according to the *Blackburn Standard*, together with the masons, joiners, &c., and the committee, held a roof-rearing supper on Monday in week before last, on the erection of the buildings. Mr. J. Woodcock is the contractor for the masonry.

Grantham.—A painted window, by Wailes, has been put up in the parish church here, at the expense of Mr. R. Bradley. The four lower figures represent the four greater prophets,—

Isaiah, Jeremiah, Ezekiel, and Daniel; each bearing a scroll with inscription. Above these figures are the Evangelistic Symbols, and, above each symbol, the Evangelist it indicates. The upper portions of the four lights are filled with canopies designed to correspond in style with that of the architecture of the western part of church. The central small compartment in the head of the window contains a figure representing the Saviour seated in glory: four other compartments contain each the figure of an angel, and the sixth remaining uppermost compartment, the Agnus Dei.

Preston.—The parish church of Preston is to be restored, at a cost of from 6,000*l.* to 7,000*l.* under the direction of Mr. Shellard. A considerable portion of the requisite sum, however, yet remains to be raised.

Glasgow.—Some of the clergy and other gentlemen of this city have been engaged in organizing and opening reading and refreshment rooms for workmen at St. Rollox.

Cupar.—Reading and refreshment rooms for the working classes of this place are being established, at the suggestion of Mr. Earle Monteith, the sheriff of Fife.

Forres.—The annual general meeting of the shareholders of the Forres Gas Company was lately held, when a dividend of 6 per cent. was declared. A reduction of 1s.—namely, to 9s. per 1,000 cubit feet—is to be made to consumers for half-year ending December.

SINGULAR TENDERS FOR SURVEY OF WISBECH.

THE following tenders for a survey and plans of the Wisbech district were received at the meeting of the Wisbech Town Council (as the Local Board of Health), on Friday, the 14th inst. In a parallel column are the tenders for the adjoining district of New Walsoken, to be decided upon by the Local Board of the latter district, the two districts being united for the purposes of main sewerage only. Of the tenders for Wisbech, the lowest, that of Mr. Fairbairn, was accepted:—

	Wisbech.	Walsoken.
Dymond and Sons, Exeter	£715 0	£145 0
Bidwell and Human, Ely	500 0	130 0
E. T. Somerset, London	451 10	57 15
Henry Sanderson, London	395 0	55 0
Robert Green See, London	380 0	70 0
Henry Gotto, Westminster	360 0	85 0
J. M. Hackness, London	330 0	75 0
Marshall and Tutbill, London	300 0	80 0
Phipson and White, Ipswich	295 0	48 0
Wood and Lake, London	267 10	45 0
Archibold Beattie, Swansea	250 0	58 0
Harness Hagger, Wolverhampton	245 0	57 0
F. J. Utting, Wisbech	200 0	50 0
W. H. Davies, Abingdon	200 0	40 0
Maughan and Fowler, Louth	200 0	50 0
Nunn and Moore, Manchester	200 0	40 0
H. C. Roper, Doncaster	183 15	55 5
E. W. Salmon, Nottingham	159 0	39 0
Dobson and Weeks, Preston	158 0	33 0
R. Fairbairn, Westminster	70 0	12 0

BRICKMAKERS' LAW.

ILL USAGE TO WORKMEN.

IN the Marylebone County Court, lately, three distinct actions were brought by brick-moulders against a Mr. Yeoman, a brickmaster, of Hertford-street, Paddington. In a recent number of the *Builder*, a report appeared, in which the Court held, that brickmakers could not recover what is termed back-pence where they had misconducted themselves. This decision was thought by the delegates from the various brick-fields a long stretch upon the provisions of the "Labourer and Artificer's Act," and eminent counsel's opinion was taken upon the legality of the judge's ruling, but which was considered to be valid. In Yeoman's cases a fresh and novel feature in the brickmasters' disputes turned up, and which is not likely to heal the differences between men and masters. It appeared that last year Messrs. M'Gill and Bowles, builders, of Craven-hill, Bayswater, took a brick-field at North Hyde, Southall, and engaged Yeoman to manage it. Yeoman and M'Gill and Bowles fell out, and Yeoman applied to the Master of the Rolls for an injunction, to restrain M'Gill and Bowles from working this field. The injunction was not granted, on the ground of Yeoman having overdrawn upon M'Gill and Bowles to the extent of 1,200*l.* Yeoman, it also transpired, is incarcerated at the present time at the suit of Gurney, the bankers. By these differences the men's accounts and the foreman of Yeoman's did not tally, and the first item in the men's claims was a wide difference in the number of bricks made. The chief claim, however, made, was for 4*l.* a bonus. From the statement of Mr. Fagan, the manager to Messrs. M'Gill and Bowles, who appeared to support the moulders, it appeared that it is customary for master brickmakers, apart from the back-pence, to hold out a further inducement to moulders to remain in their employ, to offer them a bonus of 4*l.*; 1*l.* to be given at the time they enter the service, and the remainder at the end of the season. Yeoman had complied with the first stipulation, but refused to give the 3*l.* although the men had ended the season with him.

Mr. George Keene, solicitor to Yeoman, contended that they were not entitled to this 3*l.* on the grounds of their not signing an agreement, and because they did not commence the season.

Mr. Fagan characterised the defence as unjust; but

The learned judge ruled that they were not entitled to the bonus, on the ground of not having signed an agreement, although evidence was adduced of a verbal agreement between the parties.

Verdict for defendant.

Miscellanea.

PHOTOGRAPHS AT SOCIETY OF ARTS.—We understand that this exhibition will be closed at the end of the ensuing week. During the time that it has been open, it has attracted considerable attention, due, doubtless, to its being the first exhibition of the kind, no less than to its own intrinsic merit. Several valuable additions have recently been made to the collection. Earl Granville has contributed a very perfect set of views of Venetian edifices; and Count de Montizou has sent in a series of wonderful representations of animals in the Zoological Gardens, taken from life by the Collodion process; all taken, it is said, during the month of November. Combining this fact with the well-known difficulty of fixing such objects, it says much for the perfection of the process by which they were obtained.

SMOKE-CONSUMING FURNACES.—On Monday in last week some experiments were tried in the steamer *Wedding Ring*, with a form of smoke-consuming furnace for which a patent has been obtained by Lieutenant Aitchison, of the Iron Steam-boat Company, and Mr. Evans. The principle of this invention consists in the introduction of a column of hot air, which is passed through the fires, in the proportion requisite to combine with the carbonaceous matter of the smoke, and to insure its combustion. The experiments referred to are said to have proved highly successful.

A BROKEN PANE AT PARIS.—M. Molière, a bootmaker, at No. —, Rue de la Bourse, has had fortune "thrust upon him" by a cart knocking against his plate-glass window. M. Molière has shut shop to exhibit it from within to admiring crowds. "Not a single particle of the glass has fallen out, but the cracks, radiating from the centre with wonderful regularity, are so numerous that the pane presents the appearance of a gigantic cobweb. Seen from the interior of the shop by gas-light, it reflects the prismatic colours with extraordinary brilliancy, and may be compared to a peacock's tail. A speculator has offered the enormous sum of 4,000f. for the purchase of the fragile property, and the offer has been refused. M. Molière calculates that he shall receive that sum in francs from Parisians alone, and afterwards the pane may be removed in its iron frame and carried round the provinces. This event has made more sensation than any other that has occurred in Paris since New Year's-day. The excitement is on the increase."

CARLISLE WATER-WORKS.—In their usual annual report the directors of these works state, that having "resolved to erect a 40-horse power engine and lay a 12-inch main from their reservoir to their engine-house, they procured tenders for the works, which were contracted for at the prices undermentioned:—

Main	£1,210	10	0
Cost of laying down	280	0	0
Engine and pump	1,460	0	0
Engine bed, well, boiler-house, &c.	488	0	0
	£3,438	10	0
Engineer's estimate for main and laying down	2,102	0	0
" Engine and pump	1,500	0	0
" Engine bed and well	360	13	0
	£3,962	13	0

Showing a difference between Mr. Simpson's estimate and the amount contracted for of 524*l.* 3s. To this should be added the cost of erecting the new boiler-house, not included in the engineer's estimate." The new main is now completed. The other works are in a state of forwardness, and will probably be finished early in the spring. From the great advance in iron, the works, it is observed, would have now cost a much larger sum of money.

ART-EDUCATION AT HOME AND ABROAD.—An intelligent and useful *resumè* of recent doings and sayings on the subject of art-education, the reports on the British Museum, the National Gallery, and the proposed Industrial University inclusive, has been prepared by Mr. G. W. Yapp, and published in the shape of a pamphlet by Chapman and Hall. The whole assumes the form of original remarks interspersed with quotations, and margined with leading references, and forms a very readable and interesting treatise on art-education. In the conclusion, Mr. Yapp speaks of the creed with some that England, as a nation, wants taste, and is deficient in appreciation of form and colour; but suggests that this is probably a mere want of art-cultivation itself, not of the faculties to be cultivated. Hence the *want* complained of ought to be supplied,—taste should be educated; and the author thinks that—"When the Colleges of Industry, of Art, and of Science, shall have been thrown fairly open to the rising generation, and when the people of England shall have had opportunities of cultivating knowledge and beauty in museums where space shall prevent confusion and arrangement invite to inquiry, it will be found that our oft-asserted artistic incapacity was a fiction; and that our powers, like the wheat in the hand of the mummy, only waited for air and light to spring into life and bear fruit abundantly."

IMPROVEMENTS AT SPALDING.—A meeting of ratepayers and owners of property was held on Friday in last week, when it was unanimously resolved, after a good deal of discussion, to adopt and proceed with the principle of an Improvement Act, already drawn out, in consequence of a previous resolution also come to, at a meeting in October last, to the effect "That the Public Health Act, being merely a sanitary measure, is insufficient for the wants and necessities of this town, which stands in great need of a cemetery, new market-house, police regulation, power to remove the old town-hall, purchase the gasworks of the present proprietor, or erect new works, and other local powers connected with its improvement, none of which are contained in the Public Health Act. That the said Act is objectionable in regard to its system of centralization, compulsory powers, and unlimited extent of taxation—and therefore it is highly desirable to adopt measures to prevent its introduction to this parish, and with that view and the attainment of the preceding objects, to obtain a general Improvement Act, which shall embrace all necessary sanitary powers, as well as those above mentioned, and such others as may hereafter be deemed requisite. Also, that inasmuch as the expenses in effecting the proposed objects can only be raised by a rate on the property within the parish, 'that such rate should be limited not to exceed in any one year the sum of 2s. in the pound on the annual value of the houses and buildings rated to the poor-rate, and 6d. in the pound on the land for general purposes.'"

A GENERAL CAB FARE.—Your valuable paper contains so many useful hints, that I hope it will admit from me another. One (not original certainly, but hardly enough considered in this country) I think, would be a mode of making *cabriolets* less objectionable vehicles in London, viz. to limit the charge (within a certain circle, as in Paris) to *one shilling* only for two persons, and sixpence for every extra person or luggage. The operation would be similar to the penny postage, *depend upon it*, for many would prefer this to an omnibus for cheapness—and many more, when they knew at once what they had to pay. Thus the cab would be kept generally employed even in fine weather, instead of standing half a day idling. For cleanliness and civility, the name and number of the proprietor, *large, inside*, would prove partly, if not *quite*, effective.—A READER.

RAILWAYS IN THE ISLE OF WIGHT.—Mr. James Woodman, engineer and architect, has published a small pamphlet on railways for the East Medina. He proposes the formation of a coast line from Ryde to Ventnor and Niton, *viâ* Brading, Sandown, Shanklin, and Bonchurch, with a branch from Brading to St. Helen's; and in drawing the attention of local proprietors and the public generally of the south and east districts of the island to his project, expresses a belief that it would enhance the estates of the one and open a new era in the commercial prosperity of the other.

TO GLAZIERS.—I wish you would give a word of friendly advice to glaziers of ornamented glass, to remind them that they ought so to insert the several panes in a window that the pattern should follow properly throughout. Want of attention to proper arrangement frequently causes that which is intended as ornament to become a disfigurement. I need not say to you how painful to an educated eye it is to see the pattern on one side of a sash-bar half an inch higher or lower than on the other, yet such errors, and worse, even to the inverting of the ornament, are daily perpetrated by the glaziers at the West-end.—W. H. J.

HOME DIGGINGS.—A mine of nickel is at present in process of being wrought on the Duke of Argyle's property, at Essochosan Glen, within two miles of Inverary. The discovery was made about two years ago by persons draining the land. Besides this mine there is another at Craignure, on the side of Lochfine, about eight miles below Inverary. At this latter the late duke spent upwards of 1,000*l.* in searching for copper. The stuff which was dug out was thrown aside as worthless, or used for building dykes, nickel being then unknown. For this "stuff" the present duke has been offered 30*l.* per ton, but has refused to accept it. The depth of the shaft at the Essochosan mine is 50 feet, and some days as much as half a ton of ore is turned out. In the old mine at Craignure, some time ago, cobalt in combination with arsenic was discovered.

RESPONSIBILITY AS TO ACCIDENTS FROM SHOP-TRAPS.—In the sittings at Nisi Prius in the Bail Court at Westminster, before Mr. Justice Erle and a common jury, a case was lately tried in which the wife of a plasterer and marine-store dealer claimed damages for having fallen down a trap in a private passage through which she had to go, after making purchases in defendant's shop while the public access was shut up. Plaintiff's ancle-bones were injured, and as she kept her husband's shop, it had to be shut up, and loss was thus sustained. Mr. Justice Erle, in summing up, observed that a man had a right to keep his private house in what state he pleased, but if he had a place to which the public were invited, and in which there was great danger where a man, according to ordinary experience, would not be led to expect any, then, if damage arose, the person who kept that public place was responsible for that damage. If, therefore, there was in this case want of care on the part of the defendant, the plaintiff was entitled to the verdict. The jury gave a verdict for the plaintiff, with 5*l.* damages for the husband, and 20*l.* damages for the wife.

SANITARY CONDITION OF CROYDON.—We regret to hear that notwithstanding the recent sanitary improvement of this town, in the shape of drainage and water supply, a low fever now prevails there extensively, and has proved fatal in some cases. We are curious to learn the condition of the graveyards there, and would suggest to the Board of Health the importance of forthwith sending some competent persons to inquire into the facts.

THE GLASS TRADE.—The contract for the glass to be used in the erection of the Dublin Exhibition Building has been entered into by Messrs. Chance, Brothers, and Co. of West Bromwich. The quality, it is said, is to be superior to that used in the London building. It is to be small fluted glass, instead of plain. Additional hands have been set on at the extensive works at Sponlane, and superior workmen will be in requisition. This, however, is not the only large contract which Messrs. Chance have had the good chance to get of late. They are also the contractors for the glass of the People's Palace at Norwood, and of the roof of the immense central railway-station at Birmingham.

PRICE OF CANADIAN TIMBER.—At a recent sale here of Canadian timber, says the *Montrose Review*, an advance in price, worthy of notice, took place. Yellow pine ranged from 1s. 4d. to 1s. 10d.; oak, 2s. 3d. to 2s. 9d.; elm, 1s. 7d. to 2s.; red pine, 1s. 6d. to 1s. 8d. per cubic foot. This is an advance on an average of from 2d. to 4d. per foot over last year, and is stated to be owing partly to its scarcity, and partly to a rise in the terms on which the timber has been supplied recently on the other side of the Atlantic.

CHELMSFORD MECHANICS' INSTITUTION.—A meeting, as to providing a new building, was held on Monday, in last week. A committee before appointed now reported that various propositions for the purchase of sites and erection of buildings had been rejected on consideration, and that they had resolved to recommend the purchase and alteration of the present building, the funds to be collected in 1*l.* shares and donations. The meeting then entered on a long discussion of the subject, which was adjourned till the Monday ensuing

AN EARTHQUAKE INDICATOR.—The recent occurrence of an earthquake in this country has rendered these natural phenomena rather interesting. M. Rati-Menton, a gentleman connected with the French diplomatic corps in the Argentine Republic, has recently communicated to the Paris Academy of Foreign Affairs, "a sure means of learning the approach of an earthquake." The earthquake indicator is merely a magnet, to which is suspended by magnetic attraction a little fragment of iron. Shortly before the occurrence of an earthquake the magnet temporarily loses its power, and hence the iron falls. According to M. Rati-Menton, the accuracy of the indicative sign has been thoroughly tested at Arsaquipa, a region where earthquakes are very frequent. Disturbance of *electric* power has long been known to be associated with earthquakes.

CEMENT FOR STONE WARE.—Gelatine is allowed to swell in cold water, the jelly warmed, and so much recently-slacked lime added as requisite to render the mass sufficiently thick for the purpose. A thin coating of this cement is spread while warm over the gently-heated surfaces of fracture of the articles, and let dry under a strong pressure. What oozes out is removed directly with a moist rag.—*Chemical Gazette.*

YEDDO, THE CAPITAL OF JAPAN.—A recent voyager in the Indian seas states that he was shown a plan of the capital of Japan, and told that a man could not walk in one day from the one end of it to the other. "When we made inquiries respecting its population," says the writer, "we were informed that it contained upwards of 10,000,000 inhabitants. A paper came from an official person who had been employed in the police in Yeddo. This paper stated that the city has in its principal streets 280,000 houses, and in each of them thirty to forty people. [They must be on the 'model dwelling' principle, in fact.] Supposing there were only thirty, the number of the inhabitants would amount to 8,000,000. If to these be added the inhabitants of the small houses and huts, persons who live in the open air, the imperial guard, the guard of the princes, their suites, &c. the inhabitants must exceed 10,000,000. In confirmation of their statements the Japanese mentioned that Yeddo alone contained 36,000 blind people."

NEW COAL AND IRON MINES IN IRELAND.—It appears from a statement in the Belfast *Newsletter* that in the district of Crevelea, near Lough Allen, in the county of Leitrim, a Scottish company have begun to make iron from mines of iron carbonate, in nodules of great richness and facility of access. The iron is manufactured by the aid of a brilliant black and excellent coal which they have got cropping out, in various places, two to three feet thick, and in close proximity to the iron, as indeed coal often is to nodules of iron.

ELECTRO-TELEGRAPHIC.—A line of telegraph between Melbourne, Sydney, and Adelaide is about to be constructed,—not by any of our own telegraphic engineers, but by a superintendent sent out by Morse, the American patentee, who, it is said, is now on his way to Australia, with assistants and material. How is this?——The French Government has sent an engineer to meet Chevalier Bonelli, the Piedmontese engineer, and agree with him concerning the connection to be established between the Grenoble line and that between Turin and Chambery, which, according to the *Savoy Gazette*, was to be opened on 14th inst.

NEW FACTORIES.—It is shown, by returns just printed by order of Parliament, that in the year ending 31st October last, there were 229 new factories set to work, of 5,357 horse power (water and steam), and 63 additions made to existing factories of 1,560 horse power, making 6,917 horse power, from which 3,363 was to be deducted from unoccupied factories, being in number 135. The additional power in the year were 3.554 horse power, equivalent to an increase of 13,416 persons employed in factories. In the preceding year the total additional power was 7,048 horses, equivalent to 28,192 additional persons employed, making in the two years, after deducting unoccupied factories, 10,602 additional horse power, giving employment to 42,408 additional persons.

STOURBRIDGE FIRE-CLAY.—The following particulars are condensed from Turberville's "Worcestershire in the Nineteenth Century," as reviewed in the *Worcester Herald*. An analysis of the best clay raised at Stourbridge gives—

Silica	72·516
Alumina	20·264
Lime	0·891
Peroxide of Iron	3·308
Protoxide of Manganese	1·488
Phosphate of Lime	1·533
	100·000

The presence of lime or iron in any considerable quantities would render the clay fusible, but when the silica and alumina so greatly preponderate, it will stand any amount of heat that can be raised in ordinary furnaces. The best clay fetches about 55s. per ton, and is used for glass-house pots, and the bricks used in making glass furnaces, not only in England but other countries: it is exported to North America in large quantities, and to South America, France, Holland, and Germany. Besides the best clay, inferior descriptions called "seconds," "black," and "offal" clay, are raised to a considerable extent. The first (black) mixed in certain proportions with "seconds," "potsherds," &c. is chiefly used for making crucibles, in which metals are melted; and of these Birmingham alone takes about 100 dozen weekly from this district. The "offal clay," or that which is raised from the mine in the mixed or broken state, is not "picked" (or selected), but ground and sold at 10s. per ton: with this the great bulk of fire-bricks are made. Notwithstanding the discovery of fire-cla in various parts of the island, Stourbridge never di a larger business than at present. The Stourbrid clays and bricks are sold freely both in the north an in Wales. About 15,000 tons are raised annually i the Stourbridge district. There are four proprieto of clay-mines in Stourbridge, and two firms rentin mines; five out of the six being also manufacture of fire-bricks and other articles in which the clay i used. About 14,000,000 of bricks of all description are made annually in the Stourbridge district, con suming about 46,000 tons of clay, and may be value at 50,000*l.* An important branch of the trade, las one which has been gradually increasing for the an seven years, is the manufacture of clay retorts fo gas works, and they are now generally preferred t metal.

CELTIC ANTIQUITIES IN SCOTLAND.—A "Pict" house," consisting of a series of concentric circles o undressed stone without cement, surrounding a centra arched chamber, has been discovered in what appeare to be the mound of a cairn, at Kettleburn, near Wick Mr. Rhind, a local antiquary, has secured various relics, such as stone buttons, found in the ruins, and has taken a ground-plan and measurement of the walls. The mound was 120 feet in diameter and 20 feet high, and the soil above the ruin was only 9 inches deep. Similar structures have by antiquaries been attributed to the British period, and are believe to point to an age long anterior to the Roman occu pation of our islands. The bones and shells from a midden or dung-heap near that at Kettleburn seem to indicate that the inhabitants lived chiefly by hunting the deer and resorting to the "ebb" for shellfish.

TENDERS

For the erection of the first portion of St. James's Church, Hatcham, New Cross. Quantities supplied. Mr. W. Granville, architect:—

	Brick and Ragstone.	All Ragstone.
Paull	£1,459	£1,250
Taylor	1,297	1,284
Holland	1,266	1,147
Myers	1,334	1,055
Glenn	1,227	1,137
Pollock and McLennan	1,125	1,025

TO CORRESPONDENTS.

"H. W." (all depends on what the person bound himself to by the advertisment or otherwise. Architects should insist on a proper understanding before sending in. If the plans be retained, the whole premium could, doubtless, be recovered). "C. A. W." "J. G." "G. B. N." (not given in the *Builder*). "T. B." "Antiquated Member." "P. R." (not disposed to move). "W. C." (shall appear) "Vero" (no useful assistance could be given in our pages. Consult an architect). "A Friend of Architecture" (objections to the enclosures have already appeared in our pages. Repetition would not answer any good end). "T. H." "W. T. (forced to decline). "H. H. C." "A. B." "W. A. P." "J. F." "T. W." (we cannot say). "R. A." "H. K." "D. C. M." "J. J. L." "Terms Moderate." "G. T. A." "A Contractor" (we gave such a list at one time: it was found to mislead). "W. L." "J. J."

ERRATUM.—In the article "Parks for the People," last week, the use of a for a turned Kennington erroneously into Kensington.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

THE MASONS' PROVIDENT INSTITUTION.—The SEVENTH ANNUAL MEETING of the above Institution will be held on WEDNESDAY EVENING, JANUARY 26, 1853, at Hawkstone Hall, Waterloo-road, to receive the Committee and Auditor's Report, the election of a Secretary, as also to elect a Widow on the Pension Fund, and other general business.—By order

WM. DIX, Secretary, pro tem.

Chair to be taken at EIGHT o'clock.

ORNAMENTAL ART in METALS, FURNITURE, and all kinds of WOVEN FABRICS.—Department of Practical Art, Marlborough House.—Special Classes for Study of the Principles of Ornamental Art will RE-ASSEMBLE on MONDAY, JANUARY 10. Manufacturers, Artizans, &c. are enabled officially to obtain the advice of the Professors, Mr. Semper and Mr. Hudson, on the execution of any works of Ornamental Art. Official fee for a single consultation, 5*s.*; for a week, 6*s.*

W. R. DEVEREELL, Secretary.

MINERALOGY. — KING'S COLLEGE, LONDON.—Professor TENNANT, F.G.S. will announce the SECOND PART of his course, consisting of TEN LECTURES on MINERALOGY, with a view to facilitate the study of Geology, and of the application of mineral substances in the Arts. The Lectures will be illustrated by an extensive collection of specimens, and will commence on Wednesday morning, January 26, at nine o'clock. They will be continued on each succeeding Wednesday at the same hour; fee, one guinea.

R. W. JELF, D.D. Principal.

REMOVAL of OFFICES.—A Card.—Mr. RAWLINS, Architect and Engineer, Bromley House, Market-place, Nottingham.

LONDON (WATFORD) SPRING-WATER COMPANY.—The shareholders and the public are hereby informed, that the amount of money required by the Standing Orders of Parliament, to be deposited in the Bank of England, in the name of the Accountant-General of the Court of Chancery, before the 15th JANUARY, has been duly lodged, and the Directors are taking all necessary measures to obtain the Act. Applications for the remaining shares may be made to the brokers, Messrs. JOHNSON, LONGDEN, and CO. Tokenhouse-yard, or to the Secretary, at the Office of the Company, 29, Moorgate-street, of whom prospectuses and forms of application, with every information respecting the company, may be obtained.—By order of the Board,

BENJAMIN RANKIN, Secretary.

January 14, 1853.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.

The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

ENGINEER PUPIL.—An Old-established Firm employing about 100 hands, have a VACANCY for a well-educated Youth.—For address and terms apply to S. R. P. box 35, Post-office, Bath.

VACANCY for a GATE-KEEPER to a FACTORY.—Wages about 15s. per week, and lodging found. It is necessary that he should be a married man; if with a family, off his hands; of very sober habits; able to read and write; and willing to make himself useful. Apply by letter to F. C. Office of "The Builder," 1, York-street, Covent-garden.

TO PARENTS AND GUARDIANS.

WANTED, a respectable Youth, about 14 years of age, as an OUT-DOOR APPRENTICE to a CARVER and GILDER, where he will have a first-rate opportunity of learning the above business.—Premium 20l. but wages to commence immediately. Enquire of Mr. JOHN BEER, Carver and Gilder, 101, Park-street, Camden Town.

TO FOTTERS, CEMENT, LIME AND TILE MERCHANTS.

WANTED, a SITUATION, by a Young Man, as Clerk, Collector, Traveller, or to superintend a Wharf. Understands book-keeping, and can give good reference from the last situation, which expired last week.—Satisfactory references can be given, by applying by letter to S. S. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, immediately, a FOREMAN or ASSISTANT to the SURVEYOR of the Leamington Local Board of Health. He must be accustomed to the general routine of a Surveyor's Office, be a good draughtsman, and also practically acquainted with the construction of buildings and roads, and be fully competent to undertake the duties pertaining to such an office under the direction of the Surveyor. Hours of attendance from six to six. Salary not to exceed 70l. per annum. Unexceptionable reference required, and a person about thirty years of age would be preferred.—Applications and references to be forwarded to Mr. J. FOX SHARP, 3, Church-street, Leamington.

WANTED, a WORKING FOREMAN of BRICKLAYERS, accustomed to London work. Men of ability, who can be well recommended, may apply, by letter or personally, at 116, Tooley-street, Borough.

WANTED, a BOOK-KEEPER, thoroughly versed in builders' accounts, and competent to take the entire charge of a set of books.—Apply, stating terms and references, to Mr. H. D. AUSTIN, 3, Cleveland-square, Paddington.

WANTED, an experienced active FOREMAN of PAINTERS, to take the management of a quantity of new work.—Apply to Mr. H. D. AUSTIN, 3, Cleveland-square, Paddington.

WANTED, by a Civil Engineer, an ASSISTANT, with a thorough practical knowledge of the profession in all its branches, particularly railway-works. Salary 200l. a year.—Address, stating qualifications and references, to Q. S. at the Office of "The Builder," 1, York-street, Covent Garden. There is also a vacancy for a Pupil.

TO LAND SURVEYORS, AUCTIONEERS, &c.

WANTED, by a young Man, a SITUATION, to assist in an Office. Has been employed in measuring, plotting, &c.; is a good plan and ornamental penman; can copy drawings, &c. As this view is improvement, salary not an object. Unexceptionable references can be given.—Address, pre-paid, X. Y. 3, Middlesex-terrace, Hackney-road.

WANTED, by a middle-aged man, a SITUATION as MANAGER and BURNER in a BRICK and TILE YARD. Has a good practical knowledge of machines, also capable of undertaking clamp-work. A permanent situation will be preferred. Unexceptionable references can be had.—Address, J. B. 4, New-terrace, Wimbledon, Surrey.

TO BUILDERS.

WANTED, by the Advertiser, who is a thorough Practical Man, a SITUATION either as GENERAL FOREMAN of one or two jobs, or as Draughtsman or Surveyor; has filled all the above situations.—Terms and references to be had on application to T. L. at Mr. Reader's, Hemmingford-place, Barnsbury-park, Islington.

TO BUILDERS AND MASTER PAINTERS.

WANTED, by a Young Man, aged 23, a SITUATION as WRITER and GRAINER. No objection to make himself generally useful. Respectable references given and required.—Address to J. B. at Mr. Bate's, baker, No. 8, Great Maddox-street, Regent-street.

WANTED, a SITUATION, by a respectable young Man, as CLERK, who has had experience in the duties of a Builder's office and superintending workman, and has a thorough practical knowledge of the business. He is a good accountant and arithmetician.—Reference given.—Address, Y. O. Post Office, Blandford, Dorset.

TO CIVIL ENGINEERS AND SURVEYORS.

A YOUNG MAN, conversant with LAND-SURVEYING, LEVELLING, and MAPPING, and possessing some knowledge of Engineering and Architectural Drawing, is desirous of an ENGAGEMENT affording opportunities for improvement.—Address, C. E. care of Mr. Robertson, 130, Aldersgate Street, City.

TO ARCHITECTS, &c.

THE Advertiser is desirous of meeting with an ENGAGEMENT as MANAGER or general ASSISTANT. Has a thorough knowledge of the design and detail of ecclesiastical and Italian architecture, prepared finished and working drawings, specifications, and special superintendence of business.—Address, D. M. 39, Great Marlborough-street, Oxford-street.

TO CLERKS AND ASSISTANTS.

AN Architect in the Country wishes to meet with a Gentleman competent to MANAGE the BUSINESS of an OFFICE. Must be well skilled in the complete working drawings and estimates, and draw out specifications. He must also be a good draughtsman of details. A person possessing some experience of practical work would be preferred. Should the advertiser meet with such a gentleman possessing unexceptionable testimonials of character, he would desire to make an engagement with him for three months, at a salary not exceeding 7l. per month; the continuance of the engagement on the same or better terms to depend on circumstance at present beyond control.—Address, S. D. S. care of Messrs. Castle and Lamb, Newspaper Agents, Bulhead-court, Newgate-street, London.

AS CLERK of WORKS or BUILDER'S FOREMAN.—An experienced person wishes for an ENGAGEMENT in either of the above capacities. Good references can be given.—Address J. H. 7, Queen-street, Grosvenor-square.

TO ENGINEERS, &c.

A MECHANICAL DRAUGHTSMAN is desirous of obtaining DRAWINGS or TRACINGS to make at home.—Apply, by letter, to A. B. 4, Arlington-street, New North-road.

TO ARCHITECTS.

A YOUNG MAN, who has just completed an engagement with an Architect, is desirous of meeting with another APPOINTMENT. He is a good draughtsman, and fully capable of entering upon the duties of an office, and has a fair knowledge of Gothic architecture. References of the highest character.—Address, "NORMAN," Messrs. Creswick, Stationers, 3, John-street, Oxford-street.

TO BUILDERS, ARCHITECTS, AND OTHERS.

A YOUNG MAN, aged 22, wants a SITUATION as above (in town or country).—He has been accustomed to an Architect's office, is a neat Draughtsman, writes well, and will make himself generally useful.—Good References given.—Salary moderate.—Address, K. P. 21, South Molton-street, Bond-street.

A CLERK OF WORKS, well experienced in all the branches of Building, is now open to an ENGAGEMENT.—Can make out Working Drawings, &c. Unexceptionable reference from his late engagement.—Address, W. M. No. 86, Upper Seymour-street, Euston-square.

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WANTED, a BUSINESS in the Country, or the proprietor will make an exchange for a good business in a country town, for his (old established) London business. The health of his family the sole cause.—Address W. P. at Mr. Spurgin's, 36, Bromley-street, Commercial-road East, Stepney.

MASTER PLUMBERS, BUILDERS, &c. wanting JOURNEYMEN PLUMBERS for town or country may be suited by making application at the Plumbers' West End Society House, per Mr. WOODS, Red Lion, Old Cavendish-street, Oxford-street, M. HARRISON, Sec.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The extraordinary panorama of LONDON BY NIGHT is now exhibited, day and evening. The Glyptotheca, Conservatories, Swiss Cottage, &c. The Panorama, being exhibited by artificial light, is seen to equal advantage in any state of the atmosphere, and the whole building, being heated by steam, can be visited with comfort at all seasons. Open daily, from half-past ten till five; and in the evening, from seven till ten. The most admired music from two till five, and during the evening.

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TO BE SOLD by TENDER, a large and handsome BRASS LAMP CHANDELIER, 24 lights, suitable for a public building; may be seen on application to Mr. BURROWS, Wells-street, near Saint George's Church, Camberwell.—Tenders in writing to be sent to Mr. T. W. PLUM, Camberwell.

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COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Bruges," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 16, Albany-street, Regent's-park.

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PAINTING on PORCELAIN.—Department of Practical Art, Marlborough House.—The Classes for Male and Female Students RE-ASSEMBLE on MONDAY, JANUARY 16.—For further information apply to the Clerk of the Museum. W. R. DEVERELL, Secretary.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

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SPECIAL NOTICE.

To secure the advantage of this year's entry, proposals must be lodged at the head office, or at any of the society's agencies, on or before 1st March.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.

Incorporated by Special Act of Parliament, 10 Vict. c. 35.

EDINBURGH ..... 26, St. Andrew-square.
LONDON ..... 126, Bishopsgate-street.
The Sums Assured exceed £3,780,000
The Annual Revenue exceeds 160,000
And the Accumulated Fund 690,000

Large Additions have been made to Policies. For example, a Policy for 1,000l. dated 1st March, 1833, becoming a claim after payment of the premium in the present year, would receive 1,514l.; and policies of later date in proportion.

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The next Triennial Allocation takes place on 1st March, 1853, when an additional Bonus will be declared.

ROBERT CHRISTIE, Manager.

*** Medical Referees paid by the Society.

Forms of Proposal, and all other information, may be had (free) on application at the Society's Office, 126, Bishopsgate-street, (corner of Cornhill), London. WILLIAM COOK, Agent.

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The small share of Profit divisible in future among the Shareholders being now provided for, without intrenching on the amount made by the regular business, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with at the same time compl te freedom from liability, secured by means of an ample Proprietary Capital, thus combining in the same office all the advantages of both systems.

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A copy of the last Report, with a Prospectus and Forms of Proposal, can be obtained of any of the Society's Agents, or will be forwarded free by addressing a line to

GEORGE H. PINCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

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SATURDAY, JANUARY 29, 1853.

OXFORD seems to be arousing itself, and bestowing attention on other subjects besides Greek and Latin, the excessive devotion to which Sydney Smith, so long ago as 1809, made the subject of complaint, handling it with that peculiar and trenchant humour which belonged to him. Whether the change was effected by his writings, or more recent ones, or is the result of the study of Mediæval, and still more, of Christian art, towards which the present phasis of the Oxford Theology has given a strong bias, it is bootless to inquire. Enough that such a change has taken place, of which the existence of the Art Society is a proof, before which not only have a course of lectures,* by Mr. Butler, been delivered, but we know that a gentleman has been brought from the commercial and naval city of Plymouth to discourse of art to the "learned Thebans" of Oxford. Nor is there any impropriety in this latter circumstance. Devonshire, and more especially the neighbourhood of Plymouth, possesses an atmosphere redolent of art, and has produced more eminent artists, perhaps, than any other county in England: the first distinguished president of the Royal Academy, and the present, and more learned, president of the Royal Academy, both claim Plymouth for their birthplace.

The lectures now before us were originally delivered to the members of the Durham Athenæum, and repeated at Oxford, and subsequently at Harrow, so that they have had a wide audience. Nor are they unworthy of such extensive diffusion: they manifest in the outset a regard for logical exactness and precision which are too often wanting in dissertations on art; and this is the more commendable, because it is clear that when the author chooses to give the rein to his courser, he can fleet away, as if mounted on a Pegasus. The imitative arts of which he treats are chiefly sculpture and painting, for of music he treats only in a supplementary address to the Durham Athenæum. A more prominent place is due to it, if it be that imitative art to which the greatest scope for originality is now offered, according to the notion promulgated by our late semitic Chancellor of the Exchequer, in what Southey would term his singular "inter-chapter" on the Jews, in his biography of Lord George Bentinck.

The other branches are necessarily treated of in a cursory manner, but sufficiently to inflame the hearers or readers with a desire for more information. A list of the works referred to is given at the commencement. Schelling's oration "On the Relation between the Plastic Arts and Nature," is cited: to those who cannot read the original German, or those who cannot procure Johnson's translation, in Chapman's "Catholic Series," it may be well to state that the essence of that oration is to be found in Coleridge's "Lectures on Shakespeare and other Dramatists," vol. ii. lecture xiii. "On Poesy or Art,"—the "general coincidence" between which and Schelling's discourse gave rise to Dequincey's captious imputation of wilful plagiarism on the part of Coleridge, and from which his memory was vindicated with so much learning and filial piety by his daughter, the late Mrs. Henry Nelson Coleridge. We observe that while Schiller's poems are cited, no reference is made to Schiller's "Letters on Æsthetics," though the translation of these forms also a part of the "Catholic Series."

* Principles of Imitative Art: Four Lectures, delivered before the Oxford Art Society, by George Butler, M.A. late Fellow of Exeter College, Secretary. Foolscap 8vo. pp. 206. London: Parker. 1852.

When treating of the statues and groups of Niobe, reference might have been made to "Fabroni's Dissertation sur les Statues appartenantes à la Fable de Niobe," Florence, 1779; nor would it have occupied much space to have given in a note a translation of the Greek epigram,—

> This female, so the poets sing,
> Was changed to stone by Diau's curse.
> The sculptor did a better thing,—
> He did exactly the reverse.

The work of Quatremère de Quincy, "An Essay on the Nature, the End, and the Means of Imitation in the Fine Arts," translated by J. C. Kent, might have been cited for the benefit of those who wish for more ample discussion on this head.

Our limits prevent us giving extended extracts. We pass over all that refers to the history of art, to give a specimen of the enlightened critical observations with which the work abounds:—

"The Niobe is characterised by a noble simplicity, by singleness of sentiment, and a certain severity of treatment which raises the subject—human suffering exemplified in a form of matchless beauty—above the level of ordinary nature, and almost to the divine ideal. If the sculptures in the pediment of the Parthenon represent to us the cycle of Olympian gods, and heroes descended from them, and may, therefore, be fitly compared to the Homeric epos, the group of the Niobe represents that portion of the cycle of mythology from which the subjects of dramatic poetry were taken, and we may compare it to the noblest specimens of the tragic drama, with which its aim is identical. Whilst in the Olympian gods the highest moral attributes were typified, in the group of the Niobe we find pathos raised to the highest possible level. A female character is rightly chosen for the representation of grief; since the expression of grief and passive endurance was looked upon by the Greeks as unworthy of a man, but suited to the female sex. The figure of Niobe would be raised above ordinary suffering nature, if not by the nobleness of the form, at all events by that of the attitude. The mother rises above the fear and pain of death. She is not merely beseeching, she is protecting—endeavouring, though vainly, to shield her youngest child, who flies to her for succour, and exhibiting the heroic power of self-sacrifice that exists in haughty and unsubdued natures; an idea never before so grandly expressed in sculpture, and only finding its parallel in the tragedies of Sophocles, where the self-devotion and endurance of which women's nature is capable are shown, not in the gentle and more feminine Ismene, but in the high-minded and daring Antigone."—P. 94.

The only thing we can venture to add to this is the interesting circumstance that when Guido was asked "Whence he drew the idea of those heads which seemed formed in Paradise?" He replied that he had had no other model of beauty than Niobe and her daughters.

Who can tell what may yet be the results of our fellow-countrymen having the opportunity of more freely contemplating even casts of these triumphs of artistic skill? This leads us to notice what has given us unqualified pleasure—the author's earnest advocacy of æsthetic culture, not among the rich only, but among our citizens and countrymen of every degree, by the establishment of schools of design and museums in provincial towns. "Is art, then," says he, "only of use in a religious point of view? No, art has another use, that of promoting our enjoyment of life in the additional pleasure we derive from the contemplation of external objects. * * * * This enjoyment of nature is very much heigthened by a cultivation of art; and as these gifts of the Creator are bestowed with a bountiful hand on all alike, it is our duty to provide that all, as much as possible, may profit by them. We cannot teach every mechanic, every tiller of the ground, the arts of design. They have no more time to practise them than we have to teach them. But we can provide for the construction of museums of art in all the provincial towns throughout the kingdom where collections might be formed, first of casts, then of pictures, as they might be presented. These museums would be always accessible to the inhabitants of the town, and to the countryman whenever his callings, on market or feast-days, brought him there," p. 179. It was precisely such casual visits as those now alluded to, which evoked the latent talent of Tassie, of Chantrey, and, we believe, of Forrest, whose recent loss Scotland has just cause to lament. The multiplication of museums, under Mr. Ewart's Act, will in all probability be followed by an increase of such gratifying instances.

By such means will be realised an important requisite for the artist—a jury of intelligent spectators. When properly educated, the people, when looking at a statue, will learn to discriminate between some dull piece of material stone—so dull that "we start! for life is wanting there,"—and a figure instinct with life and beaming with mind, which extorts a willing admiration, for, to use the words of the old dramatist,—

> "There is then a heavenly beauty in't; the soul moves in the superficies."

Nor do the humber classes alone need instruction in the principles of art; the higher are often the dupes of designing dealers, from whose specious practises a knowledge acquired in the study of the best models would protect them. Very appropriate are the remarks of Mr. Butler, in his concluding address before the Art Society of Oxford, with which we must end our extracts:—

"I need not begin by proving how desirable it is that an English gentleman should have some knowledge of the principles of art, by which he can at least judge of its productions, and take a part in conversations on subjects connected with art. I shall take that for granted. But I may be permitted to say in what relation, as I conceive, the study of art ought to stand to other studies pursued here. I would not claim too much time for that which has no right to our exclusive attention. Art is, as we have seen, a lesson for the ignorant, a recreation for the intellectual man, a necessity for the artist. What he feels he cannot help portraying. The practice of art is his daily food. It is to us the seasoning of the food, not the food itself. We hope to bear away from Oxford solid fruits of learning. Art is as the bloom which lends beauty to these fruits. Whatever acquirements we possess, whatever knowledge, will borrow an additional grace from its association with that pure artistic feeling which springs up in the minds of those who, with faith, and love, and perseverance, study the finest models that ancient and modern art have given us.

Most of those whom I am addressing have a great advantage in the study of art over ordinary students. They hold in their hands the key of those treasures which nothing short of a familiarity with ancient times and institutions can disclose."

How happy has been the effect of the application of ancient remains to the elucidation of one classic author is seen in the very splendid edition of "Horace" which Dean Milman has given to the world. Nor has the effect been less happy in the employment of ancient remains in the illustrated edition of Macaulay's "Ballads." But the whole domestic life of the ancient Greeks has been elucidated from the remains of antiquity by Panofka, a translation of whose work was published a few years ago by Newby, Mortimer-street.

We may here remark, the materials and subjects for statues, bassi-rilievi, and pictures, with which "Horace" abounds, was pointed out by Jani, in his edition (Leipsic, 1809, p. lxxii.), where he particularly specifies odes, b. ii. od. 18, l. 25; from which we learn that evictions were practised by Roman as well as Irish landlords.

M. Chateauneuf in the interesting volume edited by Lady Mary Fox, entitled the "The Country House," has suggested that the residences of our country gentlemen should bear some relation to the character of the pursuits and studies of their owners, and be Grecian or Gothic in their style, as the possessor might prefer Homer or Shakspeare. This he suspects may raise a smile, but it is interesting to know that respect has been paid to the principle involved, in the New High School, of Edinburgh, which is not the least pleasing of the buildings which adorn that classical city.

To conclude, we have learning, taste, and enthusiasm combined in Mr. Butler's book, to promote an object of great individual and national interest. We cannot doubt but that a taste for art will be more widely diffused than at any former time, when it is so zealously patronized and practised by the highest Personages in the realm, whose example is adopted in the best circles. Indeed, no one could have surmised how great is the feeling for art, and how exquisite the practical power, which exists among the aristocratic ranks, till the exhibition of the Amateurs' gallery disclosed the pleasing fact. Many works bear a like testimony which have emanated from the same sources. The "Babes in the Wood," by the Marchioness of Waterford; the "Book of Ruth," by the Ladies Cadogan; and "The Spanish Lady Love," by Lady Dalmeny, all evince high artistic skill. Humble in their pretensions, but not less attractive, are the several productions of E. V. B., especially the volume entitled "Child's Play," which, like those edited by Lady Mary Fox and the Ladies Cadogan, have for their motive the promotion of benevolent objects. May the results correspond with the intent!

A "Treatise on the Fine-Arts Section of the Great Exhibition," by Mr. Weekes, the sculptor, has been recently published.* Although its purposes are not ephemeral, there is much, of course, in it which would have been read with greater interest while the Exhibition was open. The criticisms on individual works of art are written in a spirit void of that offensive tone of stricture which is professionally adopted by some who are really incapable of appreciating the beauties and the merits even of a defective art-work. The author of the treatise under notice is of opinion that "a perception of beauties is more a proof of knowledge than a carping at defects; and that a just but merciful spirit of criticism will serve more to the advancement of good art than any observations resulting from personal friendship or party prejudice." The author's own criticisms, however, on individual art-works, constitute but a minor feature of his treatise, in which the origin of the fine arts has been touched upon and some of their history adverted to,—their value as a means of improvement and civilization dwelt upon,—their power over the mind discussed,—their principles set forth, to show them founded on solid reasonings, not on fanciful aberrations,—their encouragement advocated, and so on. The introduction is followed by a short chapter on modern British art up to the present time, in which the neglect of form and the ultra-attention to colour are pointed out as probably actuating the Exhibition Commissioners in their rejection of pictures and invitation of sculpture; on the latter of which subjects the longest and most interesting chapter of the treatise consists. This is followed up by one on the materials and processes used in the fine arts; a chapter on ornamental art in general; and some remarks on stained glass. The book is not very *deep*, and there are one or two passages which might tempt us to an angry rejoinder; but the liberal and generous spirit in which the author has treated the works of the majority of his contemporaries, Gibson, MacDowell, Bailey, Bell, Foley, Watson, Adams, Stephens, Edwards, &c. makes a strong demand on our admiration, and leads us to withhold objections that might justly be urged.

Sculptors greatly need an appreciating public. If proper encouragement were now discreetly given by the moneyed classes, we should soon see the British school of sculpture raised out of its present unsatisfactory condition.

* "The Prize Treatise on the Fine-Arts Section of the Great Exhibition of 1851; submitted to the Society of Arts in Competition for their Medal. By Henry Weekes, A.R.A. Vizetelly and Co. 135, Fleet-street, 1852.

ON A CERTAIN CLASS OF GALLO-BYZANTINE CHURCHES IN AND NEAR PERIGUEUX IN FRANCE.

IN the course of some remarks on this subject read at the ordinary meeting of the Royal Institute of Architects, on the 10th inst. by Professor Donaldson, the reader said, his object was to invite attention to a peculiar class of monuments existing in France, which he would call by the name of Gallo-Byzantine, because they presented features closely connected with the architecture of Byzantium. For the latter he considered the term "Byzantine architecture" a good denomination; and it might in the first place be desirable briefly to trace the history of that style. About the year 330 of our era, the Emperor Constantine became a Christian, and removed the seat of empire from Rome to Byzantium, carrying with him the arts of Rome as they then existed, though in a state of decline from their ancient perfection. These arts, and that of architecture especially, became, in this new locality, mixed up with a new element of taste; inasmuch as the artists of that city retained in a great degree the traditions of the ancient Greeks, with respect to mouldings, plans, &c.; and from that period a mixed style was perceptible, having a strong feeling for Greek art, but presenting also other features belonging to a strange and foreign country. The ancient basilicas erected at that time in Rome and elsewhere retained the form now shown in St. Paul's without the Walls, at Rome, with some modifications.

It appeared that in Greece another style of art arose at the same time, and the Christian churches then erected had a peculiar character and impress of their own; distinct and different from those of Rome.

The great dome of the Pantheon was the earliest feature of that kind mentioned in the archives of architectural history; and was erected about the time of our Saviour's birth. The Pantheon was a portion originally of the Baths of Agrippa; and in the baths which were subsequently erected, the dome, as an architectural feature, was to be found: but in the basilicas of Rome the cupola did not form an essential part, as it did in a remarkable manner in the Christian churches erected in Greece. The dome, in fact, did not first appear in Eastern, but in Western Europe: yet the Romans, when Christianity was introduced, abandoned that great feature of their own invention, while the Greeks adopted it. And coextensively with the progress of the Byzantine dominion, its architecture influenced the taste of Asia and Africa, and produced the Arab and Moorish styles.

The earliest Christian church of this description now remaining was that of Sta. Sophia, at Constantinople; built by Anthemius of Tralles, and Isidore of Miletus, under the Emperor Justinian, about the year 540. In the ground plan of this church the elements of the Greek cross might be traced.

The church of San Vitale, at Ravenna, erected about A.D. 550, presented an octagonal arrangement in its plan, without any trace of the elementary form of the cross. He did not know whether the invention or application of the form of the cross to the plans of churches was due to the Greeks or to the Romans. It was probably to be ascribed to the lively imagination of the former; and the Latins, who, without wishing directly to imitate the Greeks, but still desiring to retain the figure which had become sanctified in their eyes, were supposed to have elongated one of its arms, so as to constitute what was called the Latin cross. Ravenna was the seat of one of the exarchs of Italy, and a number of churches still existing near the south-east coast of Italy bore the original type of the Greek church.

Mr. Donaldson here referred to a plan of a Græco-Russian church, observing that the Russian empire, having adopted the Greek rite, which is still professed there, all their churches were built according to the canons of the Greek church; and probably the czars of Russia might be regarded as the successors of the emperors of Constantinople. He next referred to drawings of the cathedral of Ani (on which he had before read a paper at the Institute). There the element of the Greek cross was retained, though the building was not erected till the year 1010. The pointed arch was also found there at a much earlier date than in this country. Of the date of the cathedral of Ani there could be no doubt, because the city was destroyed before the pointed arch appeared in northern Europe.

The next building referred to was the church of Lycodimo, at Athens, which presented a peculiarity of section, with a series of small windows at the springing of the dome. This was also a peculiar feature in the church Sta. Sophia, and also in the mosque of Sultan Achmet, at Constantinople, which displayed, much more than Sta. Sophia, the original type of the Greek church.

The church of St. Mark, at Venice, was built on the Greek type at the latter end of the tenth century. There the arms of the cross were quite equal, the central dome rose from four large piers, and there were four other domes at equal distances from the central one. That over the western entrance was as large as the central one, but the other three were smaller. The more ornamental parts of the church were admitted to be of a later period.

Some years ago he had been applied to by the publishers of the work called "Monumens Anciens et Modernes," to superintend the translation and publication of an English edition. Among the subjects illustrated in that work was the church of St. Front, at Perigueux. Having been himself for many months in Greece, he was struck with its resemblance to the churches of that country. A recent work published on "Byzantine Architecture in France," by M. Felix de Verneilh, treated not only of the church of St. Front, but showed that there were also in France a great number of churches of the same character, all of them being within a certain district in the south-western part of the country.

When the national taste in France most unpectedly restored to favour and acceptance the arts of the Middle Ages, a long-established and deeply-rooted belief was peculiarly prevalent. Since the Renaissance it had been customary to consider that in point of art France could not claim any initiative; that she had always imitated, never created; that she had always received impulse without ever imparting it. As, then, it became necessary to name for the first time the principal styles into which the monuments of ancient France are divided, and to assign them to an origin, that, characterized by the full semicircle, was at first described as coming direct from the East, and very naturally received the name of Byzantine.

A certain analogy exists between the churches of the ancient Greek Empire and those which were built in France in the eleventh and twelfth centuries; an analogy which, although not very complete in all its details and consequences, authorizes the classifying them under one modified name, and attributing them to one common type. To call so many of these buildings purely Byzantine could only arise from those edifices in the east of Europe being so little known.

Byzantine architecture is the architecture of the ancient Greek empire. The Byzantine churches are those of a date later than Justinian, which were built wherever the power of the Greek emperors extended,—wherever Byzantine civilization prevailed. Such are St. Vitale, at Ravenna, and St. Mark, at Venice, and even the more recent churches of Russia: because at the time when St. Vitale and St. Mark were built, Ravenna, and likewise Venice, had not yet broken through all the ties which attached them to the Greek empire; and because Russia, in reality, is the inheritor of that empire, and the

present possessor of her power. Whatever these edifices have in common among them and peculiar to themselves, as distinguished from other Christian buildings, that which assigns them a place and a style distinct and peculiar in the history of architecture, is, above all, the cupola. All these erections, and, with infinitely few exceptions, they alone, in Christian architecture, have the cupola as their chief type: the cupola is not in these an accident,—a simple modification of the vault, as in the churches of the West, where it is little shown but at the base of towers, and sometimes at the intersection of the naves: but it is constantly and systematically employed, and the cupola forms the basis of all Byzantine architectural combination.

Now there exist in the heart of the central provinces of France such edifices as the above. Without root in that country, isolated in the national taste, they appear, in spite of their rudeness and simplicity, to reveal clearly and incontestably an Eastern origin. These are the buildings in which the cupola always forms, as in the Greek churches, the basis of architectural combination, and are those to which I propose to call your attention.

Already a learned architect, a traveller in the East, M. Albert Lenoir, had remarked, at first casually, and subsequently with emphasis, in a public course of lectures, the eminently Byzantine physiognomy of the churches of Cahors and Souillac: he placed in the same rank the church of St. Stephen of Perigueux, which he knew only by a bad engraving. Now by patient researches, pursued during six years, M. Felix de Verneilh proved the existence of more than forty monuments, all bearing in different degrees the impress of the same style,—all of the same family: but the oldest, the largest, the most complete, and the most curious of all is the ancient abbey of St. Front, now the cathedral of Perigueux. The basilica of St. Front struck him very forcibly. By the Greek cross of its plan, by its paved terraces, by its five cupolas entirely disengaged from its primitive roof; finally, by the purity and unity of its style, it proclaimed a relationship with the religious edifices of the East, remarkably close and direct. He proceeded to compare it with the chief examples of the latter, and, to his great astonishment, there was one, the celebrated basilica of St. Mark, Venice, the plan, form, and almost the dimensions of which, it reproduces. St. Front was in some sort but the copy of St. Mark's. This was a fact without parallel, and of high importance in the history of the art; and he determined to study it in all its details and all its consequences.

To show how a Byzantine type was introduced entire into French architecture, to state at what time, under what circumstances, and with what modifications, is to write a history of St. Front.

To explain, then, how this Byzantine element developed itself, how modified, and to what extent it was combined with the national architecture, to pursue it in all the edifices which are impregnated with it, even to the poorest and the most obscure, is to treat of Byzantine architecture in France; for, strange to say, all the Byzantine edifices of France, or (which is the same thing) all buildings with cupolas actually existing in France, were built in the neighbourhood, and in imitation, of St. Front, which takes the lead and explains them. Not any of them has extended beyond the limits of old Aquitaine, although the influence of the cupolas of Fontevrault are felt in the Romanesque and first pointed style of the whole of Anjou; and even this influence by no means prevails throughout all parts of that vast region of the south-west. None are found to the south of the Garonne, that is to say, to the south of Aquitaine. In the north, and immediately on this side of the Loire in the east, they are very thinly scattered. It is in the centre in the west, in the dioceses of Perigueux, Angoulême, Cahors, and Scintes, that almost all of them are concentrated. Churches are not necessarily Byzantine, because they possess cupolas, for not all vaults of this kind are imitated from those of the East; the distinction is in the form of the pendentives. No, cupolas with pendentives of a spherical form need further investigation. In Périgord and Angoumois such are innumerable. They decidedly form a distinct series. But this distinction having been made, it was important, without otherwise disregarding any building with a series of cupolas, at least to discover all those which were very old or very worthy of remark. These might offer some further insight, some light at first unperceived, so as fully to enable us to understand the ramification and development of this class of edifice in France.

There were many towns in France which contained edifices of the kind thus described;* and a comparison of the ground plan of St. Front with that of St. Mark's, Venice, would show their striking similarity. There was an equally remarkable coincidence in the date of their erection. The first stone of the present St. Mark's was laid in the year 977, and the whole of the eleventh century was occupied in completing it and its embellishments. The monastery and other edifices, and the church of St. Front, at Perigueux, were commenced in the year 984, by Bishop Frotaire, the superior of the church, who died in the year 991;—therefore there was a difference of only seven years in the dates of foundation of the two churches. After Frotaire, Martin carried on the works at St. Front; he died A.D. 1000, and A.D. 1047 the monastery was dedicated by Geraud de Gourdon. The main piers of St. Mark's were hollowed out and lightened, just as Sir C. Wren had lightened the piers of St. Paul's in comparison with those of St. Peter's. Above the piers of St. Front were pointed arches, and above those the dome. In the fourteenth century a chapel was added to St. Front by one of the bishops, and there was every reason to believe that it had taken the place of an absidal end. The tower was of a later period than the church, but it was the most ancient tower existing in France. The inside drum of the cupolas rises clear and distinct above the roof, and is then covered with the external cupola. The stone-work does not now appear, but the author of the French work referred to, states that he examined the construction and found it to be of stone, beneath the present tiling; the tiles having been used as cheaper than the reparation of the stone roof.

From the striking resemblance of St. Front to St. Mark's, the author last referred to supposed that St. Front was designed by a Venetian rather than a Greek artist; and this led Mr. Donaldson to advert to a singular circumstance in the history of commerce in France, which had been pointed out by Mr. Digby Wyatt last year in the discussion on the Royal Tombs in Westminster Abbey, namely, the settlement of a colony of Greeks and Venetians at Limoges, in the south-west of France, in the immediate vicinity of Perigueux, and the other towns containing the buildings which had been referred to. The Venetians probably adopted this mode of colonization for the extension of their commerce in spices, works of art, &c. from the dangers of navigation beyond the straits of Gibraltar; although such dangers, perhaps, consisted rather in the fear of Moorish pirates and Norman enemies than in the supposed existence of rocks beyond the straits, which could not be safely passed; and certainly the Venetian influence was greatly extended by the establishment of the colony referred to. Although he had described the churches in question as Gallo-Byzantine, their peculiar elements were only indirectly derived from Byzantium through the medium of Venice, which was then the great citadel of art.

To apply the foregoing observations to our own country, Mr. Donaldson believed that if the Norman churches in England were carefully examined, they might be divided into two or three distinct classes. Not limiting the question to what Mr. Sharpe, of Lancaster, had so well developed, namely, the transition from the Norman to the Lancet or Early English, but extending the investigation to the pure semi-circular or Norman period, he thought subdivisions might be traced, especially by those who have travelled in Greece; and they would particularly appear in the sculpture and ornamental details, and perhaps still more in the ground plans. Some Norman churches were, in plan, peculiarly like the smaller Gallo-Byzantine churches, whilst others appeared to have a character of their own. Iffley Church was very like some of the simple Byzantine churches; and he was inclined to believe that it presented the primitive type of several in England. In Herefordshire there were still many of that class; and if those students of Gothic architecture who were not content to take up facts ready made would carefully investigate the subject, he was induced to think that a rich fund of discovery might be opened to them, similar to that which had been developed by the French authors, whose remarks he had endeavoured to illustrate.

In the discussion that followed,

Mr. Scott stated that he had not particularly attended to the suggested classification of Norman churches, nor to the supposed resemblance of their plans to those of the Greek churches. Undoubtedly some of the former presented ornaments of Greek character. Kilpeck Church consisted, in plan, of a nave and choir, with an apsidal termination. The same arrangement, without the apsis, might be seen in the churches of Iffley and Stewkley. Perhaps the different styles referred to by Mr. Donaldson were not of different dates, but caused by the immigration of a different class of builders.

Mr. Godwin observed that there was a striking peculiarity in the church of St. Front in the occurrence of pointed arches in the principal arcades. The church was at least as old as the beginning of the eleventh century, which was a very early period for the introduction of that feature, agreeing with the cathedral of Ani in that respect. Some years ago, he had himself examined the majority of the churches founded on this type in the neighbourhood which Mr. Donaldson had referred to; and certainly there could be no doubt that their principal forms and peculiarities were derived from Byzantium. At Angoulême (among other examples which might be quoted) there was an interesting building of this description; and the church of St. Hilaire, at Poictiers, was also a remarkable example of the same class. In England, the history of Byzantine architecture had yet to be written. French authors had taken much more interest in it, as Mr. Donaldson had shown; and the work by M. Albert Le Noir on the subject was worth examination. Quite recently Mr. J. H. Parker, of Oxford, had communicated some papers on the subject to the Society of Antiquaries. The first of these had been printed in the *Archæologia*, and the series was still in progress. It was clear that in England, as in France, Byzantine art had exercised a great influence. Our early Saxon churches, Hexham, for instance, judging from the descriptions which had come down to us, had been founded on the same type. The wall paintings, and other decorations of the period, which were most abundant, all seemed to be derived from Byzantium. He hoped the present paper, and the remarks which might be made upon it, would have the effect of directing more attention to the subject. That the church of St. Front was really built by a colony of Venetians was now taken to be a fact, and it was equally certain that it was built after the model of St. Mark's, at Venice, and in its turn became the type of many churches on this side of the Alps.

Dr. Henszlmann said that there was a series of churches on the Rhine erected in the twelfth century, the plans of which were formed upon the Greek cross, and surmounted by a cupola; although the latter, about the same period, became converted into a square tower. The churches of St. Martin, and of the Apostles, at Cologne, were instances of this; and a similar plan was to be seen in the cathedral of Tournay, although, in later times, a Gothic choir of greater length had been added to the latter building. He believed that the plan of the cross was introduced by the Greeks, and that the Roman churches having no transepts were derived from the ancient basilicas. In the churches of San Paola, Santa Maria Maggiore, and San Pietro ad Vincula, at Rome, there was a long nave with columns, and no transept at all. In the churches of Frose and Gernrode, in the Harz district of Germany, built about 958, the commencement of the transept might be found, and in later times this was carried out in the form of the cross.

Mr. Scott thought it was hardly correct to say that the basilicas at Rome were without transepts. In many of them the transept was strikingly apparent, though it did not project beyond the walls; just as much so as in the church of Sta. Sophia. Afterwards the speaker drew attention to a very old question,

* List of Gallo-Byzantine churches in France:—St. Front de Périgueux, St. Etienne de Périgueux, Cahors, Souillac, St. Astier, St. Jean de Cole, Branlôme, Penussac, Trémolac, Boschaud, Ligueux, Paunat, Agonac, St. Avit-Sénieur, Bourdeille, St. Martial de Viveyrols, Marcuil, Le Vieux-Marcuil, Thiviers, Verteillac, Brassac le Grand, Soliguac, St. Emilion, Le Puy en Velay, St. Pierre d'Angouléme, St. Liguaire de Cognac, Bourg-Charente, Cherves de Cognac, Gensac, Mesnac, Chastres, Péreuil, Le Roulet, Fléac, Beaulieu, Le Peyrat, Saintes, St. Romain de Benêt-Saintes, St. Hilaire de Poitiers, Loches, Fontevrault, Angers.

namely, whether domes were really inconsistent with Gothic architecture. Some of the illustrations in the books referred to by Mr. Donaldson showed that the dome might be introduced with the greatest success on four pointed arches; and it might be worth consideration whether a degree of novelty might not be introduced in modern Gothic designs, by the adoption of that striking feature.

In reply to Mr. Wadmore, who inquired if any of the ornaments of the Greek churches were like those on Saxon churches in England, Mr. Donaldson replied that he hardly knew of any Saxon churches, or of any buildings before the Norman Conquest, with ornaments at all; but in the Norman architecture in England the Greek ornaments of the Lower Empire were very common, not only in churches, but in tombs, &c. The crypt of York Cathedral afforded a proof of this, having the honeysuckle and other Greek ornaments; and this might, perhaps, be considered anterior to the Norman era.

Mr. Billings said that the honeysuckle and other Greek ornaments might be seen in the Temple Church; and, indeed, they were more prevalent in the Early English period than in either Saxon or Norman buildings. Probably the earlier plans of English churches might be derived from the Greeks, consisting of a nave without the cross; but the later Norman churches returned to the columnar plan of the Romans. The churches of Leuchars and Dalmeny, in Scotland, had very beautiful apses. The Saxon church at Hexham, to which Mr. Godwin had alluded, did not exist. [Mr. Godwin said of course he had only referred to the accounts of it by ancient writers.] That church, however, still presented some very fine specimens of the Norman and Lancet period. Probably the best authorities for Saxon ornaments were to be found among the MSS. in the British Museum, and there would be found a profusion of the bastard Greek ornament, — some of it remarkably beautiful. Mr. Billings then referred to another subject, on which he felt much aggrieved, namely, the paper lately read by Dr. Henszlmann, in which it was stated that he (the speaker) and other investigators had failed to discover the principles of Gothic architecture. He would not permit it to be asserted that he had failed.

Mr. Papworth made some remarks on the prevalence of the cupola in the works of the Arabs; which, in fact, appeared to consist almost entirely of cupola and minaret. He also adverted to the classification of Norman decoration into two styles; one presenting great resemblance to the finer species of Greek art, and the other an extremely florid character of decoration.

Mr. A. Bailey referred to two small apsides, or small niches, on each side of the large apse in the church of St. Mark. These niches existed in all the Greek churches he had seen, and also in the Coptic monuments of Egypt; in those of semi-Greek origin in Sicily, in the churches in Venice, and even in Friuli and Dalmatia; but it was somewhat strange that they were not to be found in St. Front, at Perigueux. One of these niches was used in the Greek churches as a sacristy, and the other to contain the credence table. He had lately examined the churches on the south-eastern coast of Italy, referred to by Mr. Donaldson, and was much struck with their resemblance to the Norman churches in England, the mouldings (zigzag, billet, &c.) being perfectly identical.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

PROFESSOR COCKERELL commenced his third lecture by urging upon the students the importance of self-reliance. In the study of the masterpieces of art and the works of ancient authors, as well as in the instruction afforded at the Royal Academy, they had the means of acquiring all that was essential to a perfect knowledge of the elements and principles of their profession. Natural qualifications and innate good taste were, however, essential to its successful practice; and the preparation of the probationary drawings required by the council of the Academy, was the first test of the possession of those qualifications to which the student was subjected. It was true that an accidental or incidental aptitude was also necessary, as, for instance, in the general education of the student, his social position, and his possession of the means of foreign travel; and this circumstance had led to serious objections at the time of the formation of the Academy, when some had strongly urged that the facilities it would afford might tempt, into a higher sphere of art than they were fitted for, young men whose abilities would have been much better applied to mechanical and other pursuits. These objectors had contended, that it was better to leave talent to find its own level without the fostering aid of an Academy; but such opinions were now seldom avowed. On the completion of his probation-drawings the student's lot was cast; he was henceforth, if not wedded, at least betrothed to his profession; and it might encourage him to reflect upon the numerous branches of it which were open to his pursuit. He might become, with honour and advantage, the decorative architect, the engineer, the constructor, the calculating or measuring architect, the builder, the architect of dignified and interesting works of an important monumental character, the iron architect, the surveyor and valuer; or his skill might be applied in other varied departments of the profession. An aspirant for fame as a historical painter was candidly advised by Sir Walter Scott to turn his attention rather to internal decoration, furniture, and ornament. This advice, based as it was upon a correct judgment of the artist's powers, was frankly adopted; and the individual became prosperous and successful, —when, as a painter, he might have starved. In the course of study at the Royal Academy, the second step was the competition for the silver medal,—when the pupil had acquired some proficiency in his art, and learnt to verify his earlier observations by patient and careful investigation. Alluding to the duties of the student at this period, Professor Cockerell dwelt upon the importance of making careful and finished drawings of successful buildings, ancient and modern. Leonardo da Vinci's maxim was, "Take care to finish whatever you begin;" and certainly a mere sketch of the salient points of a building was as likely to present a caricature as its true effect: its real beauties could only be fixed upon the memory by attentive study, and by means of finished drawings. This plan would produce, in fact, a real economy of time. Many a travelled student might possess a thousand sketches, but few of them were careful or accurate: he might have gone from bad to worse in mannerism of style, and, whilst apparently industrious, was in reality an idler. A skilful foreigner, employed by Lord Elgin, was so well aware of this, as a defect prevailing in the works of English draftsmen, that when appealed to on the merits of the works of such an artist, he would reply, "Oh, yes, he draws in the English fashion; very quick, and very ill." It was therefore the professor's especial duty to enforce the importance and advantage of finish and accuracy of drawing. In the competition for the gold medal, the student was deemed perfect in the practice of drawing, and in the habit of careful observation; and he was therefore called upon to show his capacity for professional practice in the invention of new combinations; and at the same time to prove his ability to profit by continental travel. Then, the soundness of his judgment and understanding was put to the test, and his former studies were invested and turned to advantage; and, whether successful or not, the competitor deserved respect and honour;—as in the Olympian games, the unsuccessful were rewarded, though in a less degree than the victor. Lastly, the student had the opportunity of foreign travel; and this was unquestionably an immense advantage. By some it was supposed to be a necessity; although by others its necessity was doubted; and reasonably so, because great and important works had been accomplished without it. Wren, who had never travelled beyond Paris, was a remarkable instance of this; but, on the other hand, it could not be denied that travel enabled the student to shake off national prejudices,—to take more enlarged views of art,—to emancipate himself from the trammels of daily business, and devote himself to the highest aims. With all the advantages thus afforded, the students of the Academy must still rely mainly upon their own exertions. Let them be true to themselves, and they might be assured that from within, rather than from without, would proceed their best successes.

Recapitulating the substance of the former lectures, Professor Cockerell again dwelt upon the grandeur arising from large monolithic works. Of this, Stonehenge was a remarkable example; and there was no reason why that monument should not be regarded as coeval in date with the ruined temples of Egypt. The ruins of Selinentum presented another similar example, the Doric capitals there being formed of single stones, each of them 14 feet square. The solidity and simplicity thus achieved forcibly impressed upon the mind the "lamp" of power and energy,—the lamp of sacrifice of labour and of cost.

The square, the round, and the triangular forms constituted respectively the elements of the different styles of ancient architecture. The square was the basis of the general architectural forms of the Assyrians, the Egyptians, and the Greeks. In Holy Writ, this element was especially referred to as a matter of admiration. We read in Exodus that the altar and the doorposts were "four square:" in Ezekiel, the same thing was frequently referred to, as in the altar of oblation; and likewise in the book of Revelations. The city of the New Jerusalem, we are told, "lieth four square;" and "the length, the breadth, and the height of it are equal;"—but the last allusion, to "the height of it," was unexplained by any of the commentators. In the Grecian Doric, the plan, the general elevation, and the forms of the entablature, the capitals, and the metopes, all displayed the prevalence of the square form.

The round form, on the other hand, was characteristic of Roman architecture. The arch was raised from its subterranean condition and expanded into the dome. The circular temple of Baalbec; the mausoleum of Augustus, now the castle of St. Angelo; the Pantheon; and many other well known monuments, were illustrations of this principle. The prejudice arising from habit and education often led to a mistaken partiality for tall and angular, or for square and quadrate forms. But surely the square tower of a mediæval church, unless viewed with the eye of prejudice, could not be preferred to such magnificent structures as St. Peter's and St. Paul's, heightened in their effect by the varied play of light and shade produced by the adoption of the circular form. If we recurred to first principles and ideas, it would be impossible to reject those types of classic origin, which the ancients admired and employed, for the meagre and acute forms of the trinitarian or mediæval architects; for, in the mediæval styles, the triangle, as the sacred emblem of the Trinity, was the basis of all architectural form. In the Lombard style, a quadrate character was, however, sometimes presented with admirable effect; as in the front of the Certosa of Pavia, where it was united with Catherine-wheel windows; and in more modern architecture, the west front of St. Paul's was a magnificent and imposing example of quadrate composition. In Grecian architecture an excellent effect was produced by the well-considered opposition of square and round forms in mouldings, &c. producing great variety of light and shade.

Probably, the adoption of different types in different countries might be traced to the natural features of each locality. In examining the sketches of a most accomplished lady, who had travelled from St. Petersburgh to Athens, he had been much struck with this idea. The pine-forests of Germany might have suggested the acute and lofty spires of that country; whilst the more elegant and graceful forms of Greek and Roman architecture, were probably due to the loveliness and beauty of the scenery of those lands. As tending to prove the artistic inferiority of angular forms, Professor Cockerell observed that our own ancestors, as they became more experienced and refined, abandoned them, adopting polygonal and multangular forms in their place. The church towers of the fifteenth century were multangular, and the plan and details of Henry the Seventh's Chapel afforded numerous instances of this improvement in the national taste.

The practical application of these remarks was to be found in the fact that it was the duty of the student to inquire wherein resided true beauty and grandeur; and that study should be undertaken irrespective of national or religious prejudices, and of private or scholastic education. As a professor in that Academy, it was his duty to call attention to the elements of taste in architecture; but the future glories of the country in such matters depended upon the students alone.

In conclusion, the professor referred to a model of the famous mausoleum, or tomb of

Mausolus, at Halicarnassus, as a fine specimen of quadrate composition and monolithic execution,—observing that at this moment, when the attention of the public and the profession was turned to the erection of an appropriate memorial of a departed statesman and warrior, that work was worthy of particular study. In the designs for a new National Gallery, the talents of the profession at large would no doubt be called into general competition; and on that account also no source of novelty or originality should be overlooked.

A SYSTEM OF TOWN DRAINAGE.*

THE second object which a system of town drainage is intended to effect is the affording an outlet to the land springs, or, in other words, to that part of the rain-fall which penetrates the soil, and which, if not removed by artificial means, will, in most situations, render the soil permanently damp, and the habitations which are built upon it unwholesome.

The quantity of this moisture, I need hardly state, will be distributed, both with respect to situation and to time, in a very different manner from the quantity to be removed from the surface. The latter will, in an urban district, generally be nearly proportional to the extent of the drainage area, while the former will be mainly influenced by other causes. Among these may be mentioned the permeability of the strata in a horizontal direction, and also the position of the spot with respect to impermeable beds, which have the effect of concentrating the natural flow to one spot, while an adjacent district may be left nearly dry.

The flow of underground water will also depend much upon the geological character of the surrounding district, with respect both to the inclination of the strata, and the nature of the lower beds, which may, according to circumstances, either increase or diminish the extent of effective drainage area, or afford to the water in the soil a natural outlet more or less efficient.

While the quantity of water accruing from the soil is thus unequally distributed with respect to situation, it will be found much less fluctuating in point of time. The sudden variation of the weather will not be immediately felt, and the discharge, although very different at different seasons, will be nearly constant for considerable intervals.

The discharging power of the conduits, depending upon their dimensions and inclination, must therefore be proportioned to the maximum quantity of the water yielded by the district, the drainage of which passes through them: since, however, this may be arranged, the flow from one portion of the district can never have passed away before that arising from a more distant place has reached the same point.

The level at which these drains are laid must evidently be, at least, as low as the basement stories of the houses, since their object is to remove the damp which would be caused in the houses by the moisture of the soil; but an important point must be borne in mind,—namely, the danger of increasing this dampness by the very means employed to remove it. Houses built upon open gravelly soils, with every facility for natural drainage, may be damp; while those constructed on retentive clays, on the contrary, may be dry. In the former there is a draught of moist air through the porous soil upwards into the house, while the impermeable character of a clayey soil prevents such occurrence. It is, therefore, of the last importance that means should be taken to prevent an upward draught from the drains into the buildings.

The material of which drains built for this purpose should be constructed, should be of such a kind, or the method of construction such, as to afford an access to the water from the surrounding soil; and the inclination should be considerable, in order to carry the water easily away, and thus to avoid the danger of an outward pressure, which would increase the evil we seek to remedy. For the same reason, they should be of dimensions somewhat greater than is necessary to carry off the water.

I have only farther to remark, as connected with this part of the subject, that the lines most suitable for such drains, will, in every case, be determined more by local circumstances than by abstract principles; and I need not therefore enlarge further upon this portion of the subject, my object being simply to show that the removal of the moisture contained in the soil involves considerations distinct from those which belong to either of the other two sorts of drainage.

This part of the question, although far from unimportant, possesses, in itself, few features different from the ordinary problem of drainage for agricultural purposes; and, as I wish simply to look upon it in its relation to the other objects to be attained by a system of sewerage, I do not propose here to enter upon that question.

We have now arrived at the third point which is to be kept in view in instituting a system of drainage, namely, the removal of the refuse liquids produced in a town. This presents a totally different question from the two divisions of the subject above discussed, and to it may be applied the name of "sewerage," as contradistinguished from "drainage" in the limited sense, which last is more strictly applicable to the removal of the natural waters.

It is impossible to overestimate the importance to a community of having the soil and the buildings kept in a state free from moisture, not only as regards the health and comfort of the inhabitants, but also in reference to the preservation of property of almost every description; but the removal of the offensive refuse arising from dwelling-houses, stables, &c. and the thousand deleterious compounds discharged from manufactories, forms a still more important desideratum. The consequences of a good system of sewerage are not confined to mere bodily comforts or advantages, but produce an important effect in elevating the whole tone of society; while an inefficient one not only furnishes a fertile source of disease and discomfort of a physical character to all classes of the community, but renders the moral degradation of an otherwise degraded population more hopeless and complete.

This, then, is the main object of draining a town—not that the soil be rendered free from damp,—not that the town should be put beyond the reach of being damaged by an occasional flood,—but that one great cause of that squalor and misery, to which every one is frequently an unwilling witness, should be removed, and the air in the poorer and more densely-populated districts rendered pure and wholesome.

The quantity of sewage water is clearly not to be calculated in the same manner as that arising from either of the other two sources, but it will be nearly proportional to the number of inhabitants in the district to be drained, varying, of course, considerably in different towns, and in different parts of the same town, according to the nature of the buildings and the character of the population. In general, it may be assumed to be nearly equal to, or rather greater than, the quantity of water supplied, such portion of the water-supply as does not find its way into the sewers being more than compensated for by matters arising from other sources. There is, however, this important consideration, which does not apply to the same extent to either of the other two kinds of drainage;—that regard must be had to the probable increase of the town in particular directions, and the drains laid out, so as to be sufficient to carry off the sewage from a district considerably greater than that which they have in the first instance to accommodate. This object may be attained, either by increasing the original dimensions of the sewers, or by laying out the lines of main drainage in such a manner that new drains may be provided for newly-built portions of the town, without involving the ultimate construction of a greatly increased aggregate length of sewers.

While local considerations must, in almost every case, have great influence in determining in what manner this can best be accomplished, yet there are so many advantages offered by sewers of a sufficient size, that in general it will be better to make allowance for the expected increase of the town when determining the dimensions of the original sewers. If those formed for the drainage of limited portions of a town are not made of dimensions reduced in proportion to the work that is required of them, they may not require provision for extension; and if an increased flow is brought down the subsidiary sewers, the main outlet into which they lead must originally be constructed of such a size as to dispose of this extra quantity.

Another consideration which affects the size of sewers, and which does not enter into the question of drains for natural waters, is this, that not only will a greater capacity of sewers be required as a town increases in extent, but, even independently of such increase, it will be found that the general tendency in an improving place will be to increase the quantity of sewage water; for, as the condition of the inhabitants improves, they become accustomed to make use of water in larger quantities; and a necessary consequence of this large consumption of water is, to render it essential to discharge all their refuse into the sewers.

The dimensions of a sewer, at any point, supposing it to be constructed sufficient, and no more than sufficient, to perform the work required of it, will be nearly proportional (having due regard to the inclination) to the total quantity of sewage yielded by the district drains towards that point. The sewage water is, no doubt, delivered into the sewers at intervals, and not in a constant stream; but the time during which the delivery takes place is so long, that it would not be wise to apply the principles laid down for surface-water drains to any great extent. Suppose, for example, that the time during which the bulk of the water passes into the sewers is six hours, then the discharging power of the main conduit might be rather less than the strict proportion would give, because the flow of the same quantity through the main sewer might be spread over a longer period, say nine hours, without affecting the velocity of flow in the collateral sewers, provided that some of those tributaries discharged into the main outlet drain three hours later than others. But even in this case there would be a period of three hours, during which the maximum quantity would be flowing down the main conduit, and any great contraction in its size would be accompanied by a damming back of the water in the tributary sewers.

This brings me to remark, that a very important requirement in a system of sewerage is, that the velocity of the water should be sustained throughout the whole of its course. Any check given to this velocity is highly objectionable, inasmuch as it tends to produce deposit and obstructions in the sewers. Besides this, if the velocity is checked, the sewer must be made of sufficient capacity to serve as a reservoir; and their being filled with foul water increases an outward pressure which tends to produce leakage and consequent impregnation of the surrounding soil with noxious matter.

In many instances, as low-lying districts, the outlet is not always open, owing to the main sewer being below the level of high water; but it admits of great question whether, even in this case, it would not be preferable to collect the sewage water in a large tank, from which it might be discharged rapidly during ebb-tide, leaving the velocity in the sewers unaffected.

The inclination of sewers should be arranged in such a manner that the velocity will be nearly constant throughout, but rather greater in the higher and more subsidiary drains, inasmuch as in the smaller stream the scouring power is less. This velocity being not only dependent on the inclination, but also being a function of the hydraulic mean depth, the inclination must be greater in the small sewers, in which the hydraulic mean depth is less.

We observe a similar law hold good in the operations of nature, for not only does the natural configuration of almost every country produce the same result in the inclination of its water-courses; but, where an exception to the rule occurs, the constant tendency of the water is, to bring the section of the river to a uniform curve, by eroding those parts of its bed immediately above a sudden fall, and filling up those parts where the channel is lower than the curve which it tends to assume.

It is important, in order to give the above arrangements effect, that as little resistance as possible should be experienced by the water in

* See p. 3, ante.

passing down the sewers. With this object the inside of the sewers should be free from irregularities, and their course as straight as possible; sudden bends and junctions with other sewers at right angles being avoided, as tending to cause eddies, and thus to favour the accumulation of deposits.

Another matter which it is important to mention is that of form. This point has been much discussed, but I believe that the problem is not one of such a complicated character as it has sometimes been considered. Any ordinary form for small sewers will, if well executed, be found to possess sufficient strength, and we are consequently left to select that which offers least resistance to the flow of the water. This form is that of a semicircle of such a diameter that the water would just occupy the whole of its area; and as the quantity of water to pass down the sewer is variable, it will be proper to adapt the form of the sewer, so that the minimum quantity will be in the most favourable conditions. Thus the sewer should be formed with a semicircular invert of such diameter as to be filled by the minimum quantity of water calculated upon; but the form above the invert is a matter nearly of indifference, as far as the flow of the water is concerned, since whatever be the form, if the sewer be of considerable capacity, the velocity will never be less than when the minimum quantity is flowing along it. The most convenient form for construction is that in which the walls batter in a curve and a semicircular arch is thrown over the top.

CLOACA.

THE NATIONAL ARMOURY.

THE letter of your correspondent "A." has made a tremendous stir in the right quarters, and will, it is to be hoped, lead to improvement. Mr. Hewitt has been trying to get materials for a denial of the truth of the article, but found nothing could be done. The "winged burgonet" is proved a cheat, and had better fly at once. Pray look in upon us again: we are in a miserable state,—deception and error from head to tail. Look at the "Spanish armoury," for example. I am ashamed to take the people round it. Have you heard what one of our people has done at Windsor? *Disjointed* one of the most perfect suits in the world, and stuck up the pieces in various parts! No wonder the Frenchman called us "varnished barbarians."

THE BEEF-EATER.

AN ARCHITECT BY INSPIRATION.

SIR,—In your last number you notice that "the church of Baslow has been restored in the Early English style of architecture from designs by *Sir Joseph Paxton*." I am an architect of four and twenty years' standing; I can therefore form some judgment of what is required to qualify a man for the practice of that profession, and should like to learn by what "royal road" Sir Joseph has passed from the position and education of a chief gardener to the style and acquirements of an architect. We know that many a builder, guiltless of any attempts with the pencil, but well versed in his own art, and apt in discovering taste and skill in others, can hire a young architect, and between them produce some very passable buildings. The Queen's palace at Osborne, and many other places of varying pretensions, give token of what may be done in this way. Then again, the Crystal Palace—an enlarged idea of a grand conservatory, may in its principal features have occurred to the mind of Paxton; he may have been sufficiently skilled to produce some sort of drawing of it; he may afterwards have evoked the aid of the builder's factotum, and worked up his idea into very tolerable expression, and then the contractors may have accomplished the rest,—the skill displayed in the details of its construction—indeed, all the art required beyond what any intelligent employer would introduce in describing his wants, being the result of their labours and that of their able assistants drafted from the offices of architects and engineers. How all this was done, and how it is now being enlarged upon, with the like aids, in the reproduction of the Crystal Palace at Sydenham, we can well understand.

But how does it happen that this gentleman is carrying his inroads into church architecture? Is he really an architect "born in a day?"—a prodigy of this remarkable age, when the tardy gait of bygone times is startled by miraculous development—when it would seem even mind may be accelerated into marvellous maturity—when the harvest of art may be reaped without its spring-time, and the rose of thought be plucked full blown without its buddings.

If Barry could only become Barry by years of laborious study, grafted on the natural endowments of his birth; if Bailey or Kiss could only grasp at eminence through a lifelong striving with the chisel or the clay; if Turner began and ended his days with the brush ever in his hands, and nature's sweetest scenes ever in his thoughts,—if these things be sober verities, then who will dare to deny that Sir Joseph must be a very sham,—meritorious he may be—clever he undoubtedly is—but nevertheless a sham of the day, pretending to knowledge which he cannot possess,—undertaking to do what by the light of his own mind, and the use of his own hands, he could never perform,—pirating upon a profession to which he can lay no honest claim,—pocketing profits which rightfully belong to others, and reaping the honours of an art which he never learnt, and which he knows that he can only exercise by means of an ingenious concealment of his own deficiencies, while freely trading on the stores of his helpers.

The tendency of an abuse so flagrant and so notorious is to depress architecture as an art, and discourage its disciples. If Sir Joseph be elevated at a stroke by such a system into the full-blown dignity of a professor, then may the duke's butler, or any other official equally clever, enjoying the like patronage, and tricked out with the like pretensions, trade with the same materials. Journeymen architects are to be hired as readily as journeymen bricklayers, and if such an employer be only sharp enough to get orders, and knowing enough to conceal his own ignorance, they will do the work and enable him to rustle into fictitious importance, and emulate the honours so unsparingly lavished on Sir Joseph.

Is the profession really come to this? Can it be right that such quackery should be held up in high places, enriched with commissions, and honoured with knighthood?

Southsea. OBSERVER.

THE PROPOSED NEW LITERARY AND SCIENTIFIC INSTITUTION AT BIRMINGHAM.

THE meeting held in the theatre of the Philosophical Institution at Birmingham lately, at the invitation of a number of gentlemen engaged in devising a scheme for establishing in that thriving town a new literary and scientific society or people's college, was as influential an assemblage of the inhabitants of the town as has been held for some time. Various letters of apology for non-attendance from influential persons were also read, and among them one from Mr. Charles Dickens, containing an offer, if alive and well, to come down next Christmas and read his "Christmas Carol," at the Town Hall, on one or two nights, for the benefit of the proposed institution, with the proviso that as large a number as possible of the working classes should be admitted free. "There would," said Mr. Dickens, "be some novelty in the thing, as I have never done it in public, though I have in private, and (if I may say so) with a great effect on the hearers."

We have already given a general idea of the comprehensive purposes of the originators of the new institution. We only regret that the idea of including a public library, as well as museum, seems to be rejected on the ground that it would require a more extensive building. It is to be hoped, however, that the new institution will meet with a better practical reception, as to ways and means, than was met with by the proposal a short time since to agree to the self-infliction of a halfpenny rate for a library and museum for behoof of the nerve and muscle of Birmingham, the working classes, through whom so many fortunes are accumulated in that money-making town. Lord Lyttleton and other gentlemen addressed the meeting, and various appropriate resolutions were passed.

The estimated cost of carrying out the entire scheme proposed is 19,000*l.* to be raised by donations, "supplemented, if need be," as the *Birmingham Journal* remarks, "by a rate under the Libraries and Museums Acts," which, by the way, however, cannot be even asked or applied for till the expiry of two years from the period of the last unsuccessful application to "three-fourths of the rate-payers." The *Journal*, humbled, by past experience, in its ideas of what is to be expected from Birmingham purses or pockets, seems to think that "the sum is a large one for Birmingham to raise," but remarks that "as the scheme comprehends the provision of a depository for mining records, and lectures on subjects of vital importance to the district, the co-operation of the ironmasters is confidently, and with good reason, relied upon."

THE IRON TRADE.

THE result of the quarterly meetings of ironmasters was as favourable to the rise of prices as any speculator could desire. It signifies not that "many of the founders complain that they have not had fewer orders on hand for four years;" that, in fact, "the advances already made have had a very great effect on the hollow ware and general foundry trade, as they have not yet been able to get a corresponding advance on their multifarious produce;" or that, besides the English and Welsh stock of material on hand, in Scotland alone there has been accumulating in the market, and now gluts it, a stock of no less than "550,000 tons at least—equal to nearly one year's entire consumption:" prices, notwithstanding, must be forced upwards,—there has been no disclaimer of the preliminary notice of advance made before the meetings—the "feverish anxiety" of those who rule the roast has not been allayed. Instead of "commercial activity" pressing on prices and forcing them up, as is alleged, prosperous as the country is, it lags far behind the "unusual feeling of excitement" and the feverish anxiety amongst iron-masters,—an anxiety and excitement, the existence of which even their most strenuous seconders admit, and by reason of which even they allow that "perhaps prices may have been rather prematurely forced up."

The prospects of the opening year are thus viewed in the *Birmingham Journal*, under the head of "The Iron Trade."

"The same correspondent, an eminent manufacturer, who favoured us with the communication on the condition of the iron trade in Scotland, which appeared in the *Journal* of the 27th ult. says:—'I send inclosed the earliest review of the first brokers in Glasgow, from which you will, I hope, extract such part as will enlighten your readers so far as to prevent their aiding the present speculation in iron.'"

We can only give the concluding remarks of the brokers alluded to, namely, Messrs. W. Connal and Co.:—

"It is impossible to give an opinion as to the course of the market, but we trust speculation will not be carried further during 1853, as *it is evident, unless there is some cause for the great advance, which we do not perceive, that the result must, sooner or later, be similar to that produced by the speculations of* 1845, *which ended in disappointment and loss to almost every one connected with the trade; and this result appears more certain now than it did then, the furnaces erected being one-third more than at that period.*—WILLIAM CONNAL and Co. Brokers."

All we desire is to see trade in every branch—in iron no less than in stone and brick and timber—flourishing *unchecked*, and *steadily* advancing. We have no interests adverse to the best interests of the iron trade itself, and no personal motive, and as little desire or pleasure, in running it down. It was the clear and painful recollection—and that only—of the undue and excessive proneness of the "great masters," as they are called, in this trade, and of their co-adjutors, to force up prices unnaturally, previous to and even since their last great smash, that has all along induced us steadily to aim at a counteractive line of remark, as we fully anticipated the present perilous policy and unwholesome excitement in the trade, which, if still

persisted in, must do a great deal of mischief, and will ultimately ruin not a few of these "masters" themselves.

Plates and sheets are now reported to have reached 14*l.* per ton and rails 12*l.* delivered in Liverpool. Scottish pig-iron fell after the recent meetings, but is said to be also on the rise again. Wages both in the iron and coal trades are going farther up, and the price of coal has been increased in the Northumberland and Durham districts, at a sort of "great master" meeting of the coal-owners, with the Marquis of Londonderry at the head of them. Best coal has been advanced, on a motion by the marquis unanimously carried, from 22*s.* 6*d.* to 24*s.* and other house coals in proportion. That *this* rise has been forced on the coal-owners by any increased and urgent demand in the "house" department of our social economy, is as little to be credited as that the rise in iron, which has really caused it, is a legitimate consequence of the pressure of sound demand in that department of our trade.

LONDON GRAVEYARDS.

IT is scarcely credible, after the evidence adduced on the condition of these plague-spots—filled to overflowing in the majority of cases—that individuals can still be found, who with a singular intrepidity of assertion, can pronounce them positively agreeable. As to the public custodians, in whom control of them is to some extent confided, I will cite what appears to me almost a parallel case. In visiting the habitations of the poorer classes, where the "undrained cesspool" showed its effect in the discoloration of paint on the closet-door, and the effects of the presence of "carburetted hydrogen" are visible in the leaden hue given to every thing about,—on asking, from the condition of atmosphere, how they could manage to live in such a place, I was a little astonished at the reply—"We don't observe nothing, sir." Their senses, from long habit, or other and physical causes, had become blunted: their olfactory nerves either had become obtuse, or that sense was altogether wanting.

Their depressed physical condition was, however, an altogether different, and far more eloquent response to the question. Either the churchwarden's attention has not been sufficiently directed to the subject, or, like these poor people, when so directed, he is quite unable to appreciate the evil. Need we wonder, when we remember the vacillating course pursued by the Imperial Parliament on this question, and the general ignorance of the ordinary laws of chemistry and of physics? S.

OUR CARVERS.

MR. SCOTT, in allusion to my remarks on the "Cannon-street Collection," and its probable influences on carving and carvers, seems to consider my letter as somewhat of a "tilt" at the notion of forming such a museum; and that I hint at the possibility of its "cheapening carved work and rendering it abundant." Will you therefore afford me space for assuring him that I had not the least intention of conveying such an idea? On the contrary, I think no person capable of forming an opinion on the matter—unless eccentricity is more to them than the advancement of art—could utter a word in hostility to the establishment, *so far as it goes*, or hold back for a moment their support to it. But at the same time I unhesitatingly suggest, that unless the donors and subscribers to the museum back up their theories by a systematic provision of proper remuneration for the art they would create and the feeling they would resuscitate, the reformation will never become manifest, and the whole business will avail nothing. You may school an artist to perfection, but he can scarcely give you evidence of his studies if you make him work with tethered tools.

In both classical and mediæval sculpture there is not only a pervading evidence of knowledge, and power of design and artistic skill in execution, but a deep feeling of love and devotion in the work, which could not possibly have co-existed with a fever for speed and cheapness, such as distinguishes the work of the present day.

So, if we would bring back the pure spirit which stands like a halo on the works of these "Angeliers" of sculpture, by whom the Eleanor effigy and such lovely works were wrought, and which spirit is now replaced, even in our most pretentious buildings, by a coarseness which is called "effect," and our utter absence of character and feeling; or if we would see ornamental art regain its vitality, and the Architectural Museum fructify, let the position of the modern artist as to remuneration be assimilated as far as possible with the circumstances under which the works which we now cherish and hold up as examples, were produced.

If architects, in laying out their works for sculptural decoration, would apply their means where they are limited, to such portions only of their design as could be completely commanded by them, reserving the rest for future attention, and setting simply the key-note to the excellence they would ultimately see in the completed work, there would necessarily be a salutary seeking and choosing of the men most fitted for the embodiment of their ideas; and these men must be those who have ideas of their own, and who love to cultivate them. Thus the artistic and mechanical minds would soon take their respective places. A spirit of emulation which men could afford to indulge in would be engendered; and with the all-important aid offered by the Architectural Museum, we should soon see works vieing with those of the past in all that is worthy and valuable in art. J. R. C.

PROVINCIAL NEWS.

Grantham.—The corporation of Grantham have selected Mr. Thomas Oliver, jun. as architect for the erection of baths and washhouses for that borough.

Chelmsford.—The report of the committee in favour of the purchase and alteration of the present Mechanics' Institute has been adopted, after a long discussion, by a majority of 57 to 9; and the report has been referred back to the committee for the purpose of raising the funds and carrying out the resolution.

Huntingdon.—A new infirmary is to be erected here, the foundation of which will probably be laid in a few weeks.

Banbury.—The church of St. Paul, on the Warwick-road, is rapidly approaching to completion, and will probably be finished by 19th proximo, when it is expected that Christ Church, at the other extremity of the town, will be consecrated.——Progress will now be made in the laying out of the new cemetery, the requisite preliminaries being completed.

Holdenhurst.—School buildings, according to the *Dorset Chronicle*, are to be erected at Moordown, in this parish.

Holyhead.—At the harbour works, on Tuesday in last week, a heading, containing 35 cwt. of powder, exploded. The shock was felt through the whole town, and the windows of the Victoria House, in Stanley-street, were shattered to atoms.

Wolverhampton.—It appears from a communication in the local *Chronicle*, that the objections to the new Exchange have at last been removed by the amendment of the ventilation, the removal of acoustic reverbration, &c. The lighting has been improved by the additional insertion of about 1,000 feet of glass.

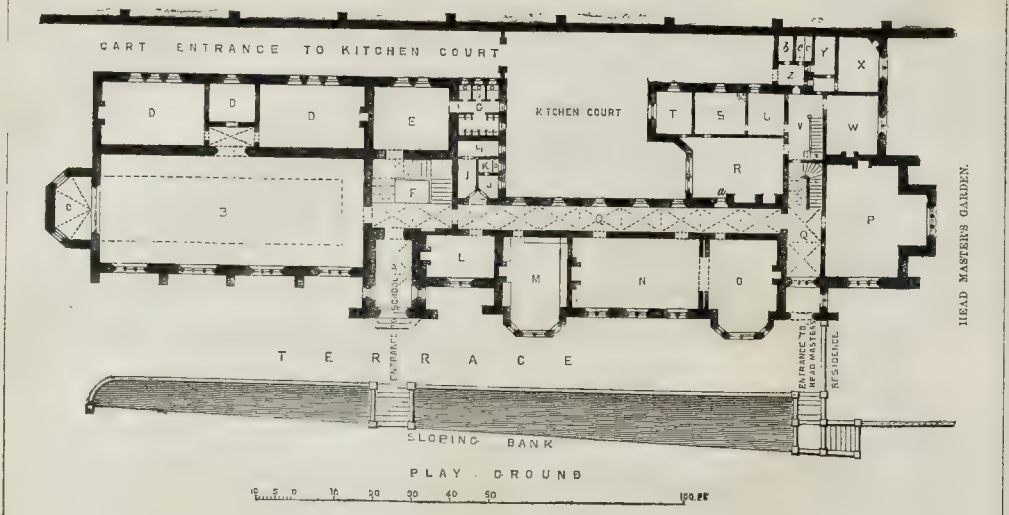
Bridgnorth.—This town, it seems, is at length making efforts in the way of improvement. Some have already been accomplished, such as the widening of the approach to the bridge, a dangerous spot; the expenditure of about 4,500*l.* on new water-works; a larger supply of gas; new causeways; and others. There are many yet remaining which require immediate attention, and particularly a public cemetery. Some three or four years ago it was admitted that the churchyards were not fit for another interment, but funeral ceremonies have been performed there day by day ever since. Attempts made by St. Mary's parish, were thwarted by St. Leonard's, but it is to be hoped such opposition will soon be put an end to by some general Act of Parliament.

Liverpool.—The new church of St. John the Divine, at Fairfield, near the Botanic-gardens, was consecrated on the 14th inst. It is designed to accommodate 1,050 persons. About 300 of the seats will be free. The church contains stalls. The organ, which was built by Messrs. Grey and Davidson, of London, is placed in the chancel aisle. The chancel window and three others are of stained glass, enriched with emblems and illustrations of scripture narrative. The style of the building is the Late Decorated, and the material Upholland stone, with quoins and dressings of Corsham Down Bath stone. The church consists of chancel and nave, with south chancel aisle, north and south aisles, and sacristy north of chancel. The tower forms the porch, and is placed at the south west angle. It is surmounted by a spire, eighty-seven feet in height, terminated by a gilt floriated cross, the extreme height being 147 feet. Internally, the nave is divided into six bays by lofty pointed arches of Bath stone, supported on moulded and polished shafts of dark gray Drogheda lime-stone, with moulded Bath stone caps and bases, the whole of the plastering being of a neutral tint to form a ground for the polychrome painting, with which it is hoped that nave and chancel will eventually be adorned. The chancel is paved with Minton's red and black quarries. The east window is filled with stained glass by Gibbs, of London, who has been engaged for the whole of the stained glass in this church. The ceiling of the chancel is painted in ultramarine, powdered with gold stars. From the centre hangs a seven-light brass corona. On the south side of the chancel is a small one-light tracery window, the sill of which forms a credence table: this has been filled with stained glass, the gift of the architect. The chancel aisle window was the gift of the clerk of the works, the late Mr. H. H. Mackinney, formerly a pupil of the architect of the church, and who met with a sudden death, at the age of nineteen, by a fall from a chaise in Scotland. The wrought brass gas-fittings were by Potter, of London. The whole of the works have been executed by Mr. Hugh Yates: joiners' work by Mr. Hughes; slating and plastering by Mr. Jones; plumbing, painting, and glazing, including ornamental painting, by Mr. Edwards; smiths' work by Messrs. Weber and Co. The carving, including font, was by Mr. Rossiter. The cost of the whole, exclusive of gifts, land, law expenses, architect's commission, organ, and upholstery, has been less than 4,100*l.* The whole has been carried out from the designs of Mr. Raffles Brown, under whose direction the stained glass, furniture, and fittings have been added. The parsonage, which adjoins the church, has been erected in a corresponding style and material from designs by same architect, at a total cost of 1,400*l.*

Lower Peover.—The old church of Lower Peover, in Cheshire, originally built in twelfth century, was re-opened on 15th ult. after having undergone a thorough restoration, in accordance with designs by Mr. A. Salvin, architect. It consists of nave, north and south aisles, and chancel, and is built almost entirely of wood. The outside walls are constructed of timber and plaster, and the whole of the interior fittings and the pillars and arches supporting the roof are of oak. Prior to its restoration, the pillars and arches were thickly coated with whitewash, the removal of which has been the means of discovering much ancient carving. On each side of the chancel is a small chapel, separated therefrom by an oak screen. The chancel is also separated from the nave by an open screen. The ancient pulpit stands on the north side of the chancel. It is of an octagonal form, and contains specimens of inlaid woodwork.

Sheffield.—The new east window of St. Philip's Church has been completed and erected. The style, like that of the church, is plain perpendicular, and it consists of ten chief openings, divided by a transom, and surmounted by corresponding tracery. The artist is Warrington, of London.

Keighley.—The Earl of Burlington, the principal landowner about the township of Keighley, has recently thrown open his estate for sale, and some of the principal sites have been laid out for private residences and public streets: some residences are already completed, and others are in course of erection; while new streets are



PLAN OF SWANSEA GRAMMAR SCHOOL.

springing up. It is said that 600 houses have been erected in a short time. On Wednesday in last week, new sales of building-ground were effected, and among them were a lot of three acres near the Midland Station, for the purpose of erecting suitable abodes, &c. to be employed and fitted up with wool-combing machines, for producing what are termed tops by the manufacturers, to supersede hand-labour, as heretofore. Ground for the erection of a new district church and parsonage in Eastwood has been granted by the Earl of Burlington.

Holmfirth.—An adjourned meeting of those influential inhabitants who have undertaken to ensure the erection of a monumental record of the flood of February 5, 1852, took place at the Crown Hotel, on Monday in last week. No special site was fixed upon for the erection, this being dependent on the amount of money subscribed.

Cudworth.—St. John's School Church Room, in the Gothic style, situate at High Cudworth, has been opened for divine service. The cost of the building has been about 500*l.* The design is by Messrs. Lockwood and Mawson, architects, Bradford. The builders were Messrs. Wilson and Son, Hull; Mr. Holdsworth, of Cudworth, joiner; Mr. J. Dixon, of Shafton, plumbing and glazing.

Sunderland.—The contract for constructing a cofferdam on the south rocks, for the purpose of facilitating the excavation of the tidal channel of the sea entrance to the dock, has been let to Messrs. Thompson and Hunter. It is calculated that about 600 loads of timber will be required for its formation.

Glasgow.—The Commissioners of Public Works have intimated their intention of removing the galleries in the choir of the cathedral, and of effecting several other improvements on the edifice.

BRICKMAKERS' DISPUTES.—Some excitement and alarm were last week felt at Manchester and Ashton by the departure of a special train with 525 brickmakers from the former town to the latter, where it is said that workmen are making larger-sized bricks at the price of the smaller ones at Manchester. The police and military, however, were on the alert, and made a counter demonstration, which limited the little army of brickmakers to "bread and cheese" at the "temperance room." They were allowed, however, to visit some of the brickworks where the objectionable prices are accepted by the workmen, a physical force demonstration itself rather beyond the limits of the law. None of the workmen visited have as yet ceased work.

SWANSEA FREE GRAMMAR SCHOOL.

WE some time since mentioned that a new Academy was to be erected at Mount Pleasant, from designs by Mr. Thomas Taylor, architect. The building is now completed, and we give a view and plan of it. Mr. Rayner was the builder. It is in the Tudor style, and comprises a school-room, with an open timber roof, two class-rooms, hat and cloak room, dining-hall, library and master's residence, with accommodation for sixty boarders. There is an entrance-hall leading to the whole (except the master's house) by a groined corridor. A tower rises from the entrance-hall as its base, and terminates in an octagon sixty feet high. The south-west front is the principal one. The walls are of native stone with Bath-stone dressings.

The following references to the plan will explain the arrangements more clearly.

REFERENCES.

A. Entrance-hall to school.
B. School-room (the dotted lines representing a gallery for spectators at examinations).
C. Master's dais.
D. Class-rooms.
E. Hat and cloak-room.
F. Principal staircase.
G. Waterclosets and urinals.
H. Shoe-cleaning room.
I. Shoe-room.
J. Washhand-room.
K. Master's watercloset.
L. Under master's sitting-room.
M. Library and museum.
N. Dining-hall.
O. Head master's dining-room.
P. Drawing-room.
Q. Corridor and masters' staircase.
R. Kitchen. *a.* Dinner-service window.
S. Scullery.
T. Larder.
U. Coal-house.
V. Servants' staircase.
W. Servants' hall.
X. Housekeeper's-room.
Y. Knife and fork cleaning room.
Z. Servants' porch.
b. Ashes. *c.* Servants' w. c.

PROPOSED BATHS AND WASH-HOUSES FOR ISLINGTON.—A poll has been taken in the parish of St. Mary, on a proposal made in the vestry for adopting the Baths and Wash-houses Act. At the close the numbers were—for the motion, 566; against it, 452. As the Act requires a majority of two to one, in order to give effect to its provisions, the motion is lost.

SPRING HILL COLLEGE COMPETITION.

As the universal exposer of insults offered to the profession, I venture to address you on this subject. The conditions, although most carefully declining to give any promise of the slightest "quid pro quo" to us poor architects for our trouble and expense in sending in designs, are drawn up so much in what I am sorry to say appears now to be the customary manner, that I do not lay so much stress upon their *special* unfairness as your correspondent "Guillaume," and indulge in a hope (may it not be a visionary one) that any professional authority who may be called in to arbitrate, may prevent any such gross abuse as he seems to anticipate.

With this view I ventured to apply to the proper authority for sections of the ground shewing the levels, without which nothing can obviously be done: to this apparently reasonable request I received the exquisitely logical answer that *as* the plans of sewerage, &c. are left discretionary, *therefore* the committee cannot supply any information as to the levels; which being translated into plain English, amounts to this—"You competitors, to whom, of course, time and money are no object, are to undergo all the trouble and bear all the expense of making, sending in, and removing your designs; *ergo*, you are to bear all the responsibility and expense of taking sections of the ground: you are to make bricks, and *of course* we do not supply straw."

What makes the refusal of the committee the more monstrous is, that they must have the levels taken before they can judge of the designs sent in; but they prefer that the expense of taking them should be paid for by each competitor; that is, paid for as many times as there are competitors, rather than that they should once for all supply them. This, sir, is, I fear, a fair sample of the logic of committees, who, of course, cannot be expected to take any step, however just and equitable, which would involve the slightest expense to them.

AN INTENDING COMPETITOR.

WANDSWORTH LITERARY AND SCIENTIFIC INSTITUTION.—The first *soirée* of this institution was held at the Eagle Assembly Rooms, on Tuesday in last week: the Rev. H. Moseley presided, and Mr. Charles Pearson explained, with diagrams and models, his proposed City improvements. An extensive variety of objects were exhibited, including specimens of arts, manufactures, new inventions and discoveries, models in motion, objects of natural history, &c.



SWANSEA FREE GRAMMAR SCHOOL.—Mr. Thomas Taylor, Architect.

THE PRESERVATION OF TIMBER.

INSTITUTION OF CIVIL ENGINEERS.

On the 18th inst. (Mr. Rendel, the president, in the chair), the evening was entirely devoted to the discussion of Mr. Burt's paper "On the Preservation of Timber."

The theory of the various processes was described: the action of the solutions in water of metallic salts, such as chloride of mercury (Kyan's), chloride of zinc (Burnett's), or sulphate of copper (Margary's), was, if the mixture was sufficiently strong, to coagulate the albumen in the sap; but the fibre was left unprotected, and it being a property of albumen to render innocuous the corrosive sublimate combined with it, the marine worm or the white ant would immediately attack wood so prepared.

Creosote had the same effect of coagulating the albumen, whilst it gave a waterproof covering to the fibres, prevented the absorption of water, and was so obnoxious to animal life, that, hitherto, it was stated, no instance had been adduced of well creosoted timber having been either touched by decay, dry-rot, or the marine worm; and the trials made in India showed that it was equally objectionable to the white ant.

The chemical products of the distillation of coal tar were described, and it was shown that the napthaline was essential as an antiseptic; that the process should be carried on with heated creosote, in order that this product should not crystallize in the capillary tubes of the wood, and that it would be advantageous to desiccate the timber, before it was submitted to the process, for which purpose it was proposed to dry the wood by smoking it in an oven, whence it should be conveyed on the same trucks into the cylinders, exhausted to the extent of 26 or 27 inches of mercury, and then saturated with heated creosote, under a pressure of 120 lbs. to 150 lbs. per square inch: wood thus saturated to the extent of 7 lbs. or 10 lbs. per cube foot, might be presumed to be indestructible, as, when even by a less perfect process such an extent of saturation had been attained, no authentic instance of decay or injury from worm had ever been adduced: numerous specimens of wood so prepared, that had been underground and in the sea, for from twelve to twenty years, were exhibited, and all were perfectly sound.

The alburnam, or sapwood, absorbed the creosote more readily than the heart of the timber, which could, however, be penetrated by the solution of chloride of zinc (Burnett's process), of which it was stated, that careful analysis demonstrated its intimate combination with the timber; it was therefore suggested, that in cases where the complete preservation of the timber was of vital importance, and expense was not a consideration, the wood should be first subjected to Burnett's process and then be creosoted, by which combined means it would become indestructible.

It was shown that dry wood only should be subjected to creosoting: by that process sapwood, otherwise almost useless, could be rendered very serviceable; and that for piles for marine work whole round timber should be used, because the outer portion, or the alburnam, was so much more readily saturated with the oil; and this prevented the worms from making an inroad into the heart.

Timber should not be kept floating in ponds, as in London, but it should be stacked in the docks, as in Liverpool and Gloucester. When the tubes were filled with moisture no oil could be forced into them, even by the heaviest pressure.

By returns from the Leith harbour works, it was shown that the average quantity of creosote absorbed by the timber was 57¾ gallons per load, or 577 lbs. weight, forced into 50 cubic feet of wood.

Piles, 14 inches square, of unprepared timber, at Lowestoft Harbour, were shown to have been eaten away to 4 inches square in four years, whilst creosoted piles, of the same dimensions, driven alongside them, were perfectly untouched: specimens of both were exhibited.

Some specimens were shown of curious coke, produced from the pitchy residue of the distillation of creosote: it was quite free from sulphur and earthy particles, and was found to be very valuable for smelting iron, for which purpose it was beginning to be largely used near Birmingham.

It appeared to be admitted that all the various processes somewhat reduced the transverse strength of the timber when dry; and the metallic salts affected at the iron bolts, or fastenings.

The natural juices of some woods did this; and a bolt was exhibited which had united beams of elm and pitch pine, and was corroded entirely away at the junction.

It was shown that on some railways in the north, unprepared yellow pine had been down, as longitudinal sleepers, for sixteen years, and was still perfectly free from decay, although its natural term had expired, by being crushed under the loads constantly travelling over it. The effect of "Green-heart" timber in resisting the attacks of worms, was particularly noticed, and it was admitted that, but for its great cost, it would be extensively used.

Experiments were mentioned, that were made at the Royal Pier, Southampton, on timber prepared by various processes; and the result there was, that the creosoted wood alone resisted the attack of the "Terebrans" with which that water was peculiarly infested.

The members were requested to aid Mr. Burt, the author of the paper, in some further experiments which he had undertaken on the subject, and to communicate to the institution all information which could elucidate the various points treated of in the paper, or alluded to in the discussion.

THE DOME OF S. SOPHIA.

At the Institute of British Architects, on Monday last, Mr. Donaldson, as Secretary of Foreign Correspondence, read extracts of a letter from the Signor Fossati, at Constantinople, in which that gentleman replied to certain queries respecting the precise dimension of the diameter of the dome of S. Sophia. He states it to be 32⅛ French metres, which equal 106 feet, 7.557 inches English. He accounts for the exaggerated notion usually entertained of the vastness of the church, as resulting from the smallness of its parts, which contrast the more strikingly with the effect of the mass, and advantageously add to the appearance of the size of the whole building; whereas in S. Peter's and other like buildings the details are on such a large scale as to diminish the impression, which the real extent of the edifice ought to produce. The Signor Fossati is engaged on a work of a more decidedly architectural character than the views of the mosque lately published, giving in detail exact plans and other minute parts of the Aja Sofia.

HAND-BOOK GUIDES.

This class of guides stand greatly in need of guidance themselves. Like those of Northumberland House and Sion House, that of Apsley House seems to claim for its author that more important personage than intelligent cicerone, the "housekeeper." It may be allowed to answer very well to the name of "hand-book" in one sense, inasmuch as it is merely *manufacture*,—the production of some scribe whose forte evidently does not lie in *describing*. There is nothing that amounts to intelligible description of either exterior or interior: the principal front is said to consist "of a centre and two wings, having a striking Corinthian portico!" We are assured, also, that the west or park front has in like manner "two wings," and that the centre "slightly recedes, and has four windows with a balcony." But the most surprising piece of information is, that the exterior, which I had all along considered merely passable architectural humdrum—respectably decent and dull—is actually "simple in its grandeur!"

Not having seen the interior of the mansion, I can only say that, in attempting to follow the "Guide" through it, I have felt myself quite in a mist, and almost blindfolded likewise. He converts the "*demijour*" of the staircase into darkness. He calls it a "circular" one; whereas most probably it is not a rotunda, but merely semicircular in plan; but whether it has a centre flight of stairs below, and two others branching off right and left above, is not stated. The Piccadilly drawing-room is said to be "moderate sized" — an epithet which conveys no positive idea as to its size at all. Now, it surely would have been more satisfactory, had the actual dimensions of each room been given; yet we are not so much as informed what are even those of the picture-gallery, which being, it seems, lighted from above, must occupy very nearly, if not quite, the height of two floors, and must consequently be very much loftier than the other rooms. Neither is anything said as to the particular manner in which it is so lighted, whether continuously throughout its entire length, or by separate lantern-lights.

Not to pursue these remarks any further, I will only add, that the architect appears to have omitted in his plan one of the most important rooms of all in any house—namely, a dining-room,—no mention being made of any such apartment.

Z.

FALL OF HOUSES, VICTORIA-STREET, WESTMINSTER.

On Thursday, the 20th, the front walls of two of the new houses now building in Victoria-street, Westminster, fell to the ground. The front wall of all these houses is built on a large arch, which springs from the level of the ceilings of the ground-floors. There was an inverted arch at the bottom from party-wall to party-wall. The roof was on, and a massive compo cornice was put up at top, as well as dressings to the upper windows. The roof is formed by girders and 4½-brick arches in cement, covered with asphalte to form a flat. The failure is attributed to the quantity of rain which has fallen. Others suppose that some of the girders were defective, and gave way, carrying the walls with them. A correspondent suggests that Mr. Pattison, who acts as clerk of the works there, could state the real cause. An official investigation should be made in all such cases.

GAS.

The price of gas at Salisbury is to be reduced from 8s. to 6s. 4d. a thousand cubic feet. A gas consumer at Warminster, writing to the *Wilts Mirror*, says, "We are at a loss to know why it should be 8s. in this town, where coals are much cheaper than at Salisbury. The gas consumers also complain of an inadequate supply."——Extensive alterations and improvements are announced by the St. Helier Gas Company as having been made at their works, and the local public have been informed that the price will be reduced from 7s. 6d. to 6s. on and after 31st of March next,—that is, in fact, essentially, from and after the winter of 1853-4. The *Jersey Times*, in reference to this announcement, looks to the extension of gas lighting, not only in public buildings, stores, and shops, but also in private dwellings, as a consequence of the reduction in price.——A lecture "on the chemistry of gas-light and of the various gases, &c. accompanying the distillation of coal," was delivered at the Loughborough Literary and Philosophical Society's, lately by Mr. Bernays, of Derby. The lecture-room was crowded to excess. In course of his remarks, the lecturer very properly pointed out "the importance of due ventilation in burning gas, one part by weight of well-made coal-gas producing in combustion nearly two and a-half parts by weight of the noxious carbonic acid." Mr. Bernays concluded by saying that already two important dyes were made from coal-tar; that salts of ammonia were manufactured on an extensive scale from gas-liquor; and that he considered that the time would arrive, within ten years, when the secondary products of gas production would be the primary, and the gas itself the secondary product.——Mr. W. S. Losh, of Wreay Syke, near Carlisle, has patented some improvements in the purification of coal gas: they consist mainly in the application of chloride of lead. The chloride is reduced to powder, and mixed with an equal bulk of coarsely-powdered coke, or of sawdust, in order to allow the gas to move readily through it. The mixed materials, in a damp state, are then laid upon the shelves of an ordinary dry lime purifier, and when the purifier is charged the gas is turned on, and in passing through the chloride of lead and coke, or sawdust, is deprived in a great measure of its ammonia and sulphurous components, which are decomposed and remain in combination with the chloride of lead, while

the purified gas passes on to the place where it is required for use. Two such purifiers are used in conjunction, and when one ceases to act the gas is turned on to the second, while the former one is being recharged, and so on alternately. In order to restore the saturated chloride of lead to a fit condition to be again used, it is well washed, in order to separate the ammonia, sulphur, &c. which are evaporated to dryness, and is then passed through a brake sieve, in order to rid it of the coke or sawdust which may have been used; after which the lead is treated with hydrochloric acid and converted to a chloride, which may be again used.——The superiority of the Edinburgh Gas over that of London, says the *Journal of the Society of Arts*, arises from two causes—first, from the difference of the coal used for the manufacture of gas. In Edinburgh, Cannel coal is used, which generates gas of a highly illuminating power. In London, Newcastle coal is used, which produces a very inferior quality of gas. In the second place, from the difference of the system in use. In Scotland, the coal is only suffered to remain in the retorts a sufficient time to give out its gases, attention only being paid to the quality of the gas manufactured. In London, the coal is allowed to remain a much longer time in the retorts, and by excessive baking a very weak gas is generated, of little illuminating power, and of little value for lighting purposes: indeed, it is well known that in London they are coke and gas manufacturers; in Edinburgh, only gas manufacturers; the one manufacturing light gas, the other gas light: 5 feet of Cannel coal gas will give twice as much light as 10 feet of the ordinary London gas; consequently, at the same rate of charge per 1,000 cubic feet, the one costs only half as much to produce the same quantity of light; the products of combustion, and all the disagreeable attendants on the use of poor gas being lessened to a very great extent.

CEDAR-WOOD CABINETS.

INJURIOUS EFFECTS OF RESINOUS PINE AND CEDAR.

AN interesting lecture on this subject was delivered on 11th ult. before the Royal Physical Society, at Edinburgh, by Dr. Fleming, the Professor of Natural Science in the new college of that city. Dr. Fleming had his attention turned to the subject from finding some of the specimens of a conchological cabinet covered and damaged by a sticky gum, like dissolved caoutchouc. On making further inquiries he found that others had observed similar injuries in cabinets of cedar. In the "Minutes of the Proceedings of the Institution of Civil Engineers, 27th April, 1847," in connection with the reading of a paper by Charles Frodsham, Ass. Inst. C.E. "On the Laws of Isochronism of the Balance-Spring, as connected with the Higher Order of Adjustments of Watches and Chronometers," Mr. Vulliamy mentioned the following circumstance:—"His Majesty George III. was in the habit of having small articles of cabinet-work made at the Royal Observatory, Kew Gardens. The drawers of one of these were made of cedar-wood, and in them several watches were placed, with the intention of keeping them going. In a very short time they all came to rest. The experiment was, however, repeated, but with the same result; and on examining the watches the oil was found to have been completely changed into a substance resembling gum."—Vol. vi. p. 247. The late Mr. William Strutt, of Derby, had a small collection of the minerals of Derbyshire, part of which had been locked up in a new cabinet with close-fitting cedar wood drawers. On opening them for the first time after some months, the minerals were found covered with a gummy matter, leaving a strong odour of cedar, and which was troublesome to remove: it gave to the bright surface of the crystals the appearance of having been varnished in an irregular and unskilful manner. It was obvious that the cedar had emitted a vapour which had become condensed upon the surfaces of the minerals.

Various other cases were adduced, and the lecturer thus concluded his remarks:—"From inquiries made in various quarters, I am inclined to believe that the more resinous firs and pines, as well as junipers (which yield the wood usually termed cedar), cannot be safely employed in the construction of drawers for the reception of objects of natural history. I can, however, testify that the white American fir is perfectly harmless, while it is singularly insensible to the influence of moisture or dry rot." The white American fir, too, we may here observe, is singularly free from resin, compared with other firs or pines. Is it not probable, therefore, that the resin or turpentine in other firs has something to do with the production of dry rot? This is altogether an interesting subject of inquiry. One main reason why cabinets are made of cedar is, that it is believed to be capable of preventing objects from being injured by insects; but since it appears to injure them itself, the prudence or propriety of continuing its use, or the use of resinous firs, for the interiors of cabinets, seems very doubtful.

THE BURNING OF THE CITY OF SACRAMENTO.

PROBABLY it is *because* California is the land of gold that it is also the land of fire; for, according to the ancient sages, gold was "mere consolidated fire" itself, and hence was dedicated to Sol, and so named. Sacramento seems, at all events, to be dedicated to Sol, or Fire: like San Francisco, it is or was a wooden city; and, in a climate of which eight months in the year are dry, and several windy, the influence of "Sol" over such a city must be omnipotent. The soil is excellently adapted, it is said, to the formation of bricks, and yet the gold-hunting speculators feel it too *slow* work to await the digging, shaping, burning, and building of such materials, and advisedly risk the upshot in timber. It would appear, moreover, that they calculate shrewdly and correctly; for we are told that, "strange as it may appear, since the fire, the vacant lots now readily let for more than when the buildings were upon them!" We hope, however, that this is significant of a consciousness that wooden structures were but lumber after all, and being thus economically cleared away, have left the building sites ready for more substantial structures. And, in fact, it is anticipated that in course of a year there will be a far more worthy successor in the shoes of the old—five-year-old—Sacramento, or at least on its site. The burning of a town of 8,000 inhabitants—especially a wooden one—must have been a splendid sight. The whole conflagration was over in less than four hours, when 1,500 houses were turned into ashes and burning timbers, and 2,000,000*l.* worth of property consumed. This occurrence took place a few weeks since; and it is said that before the morning dawn had succeeded the night of conflagration, hundreds were at work re-erecting buildings amongst the hot ashes, the streets were jammed with carts and horses, timber, tools, and workmen; and some long-headed speculators were actually steaming to San Francisco, and over-reaching each other by the way, in order to buy up all the spare wood in that town ere the news could reach it!

RAILWAY MATTERS.

Removal of Obstructions in Front of a Train.—A correspondent, "T. M. F." suggests that in place of the "guard" which is placed in front of the engine to clear the line of any obstruction, there should be a wheel, so connected with the fore-wheel of the engine as to revolve in a contrary direction to it, and that on the tire there should be projections slightly turned up, to take hold of the obstruction and to remove and clear it from the line, which he believes it would effectually do if the "clearing-wheels" were placed one on, or over, each rail, and to revolve within an inch of it, and not parallel with it, but the outer edge to project 2 inches from the rail outwards, and 6 inches to 8 inches inwards. The best size for the clearing-wheels he thinks would be 20 inches in diameter, with projections on the rim about 1½ inch long, and 16 inches of the 20 inches which constitute the diameter to precede the engine, the other 4 inches being left for the fore-wheel of the engine to work upon. Perhaps an eccentric or oval movement in the outward direction indicated, with blunted projections, or buffers, would be preferable to a circular, which might send some obstructions whirling round among the carriages of the train, in place of clearing them fairly outwards.

Railways round London.—It appears from a compilation by Mr. W. R. Botham, of the London and North-Western Railway, that twenty-four companies have deposited their plans, &c. at the Private Bill-office, and intend to apply to Parliament for power to make twenty-four new lines of railway within a circle of 20 miles round London. Nine of the proposed railways are within a circle of 5 miles from the General Post-office, and ten are within a circle of 10 miles. The existence of these new schemes is attributed to the success attending the East and West India Dock and Birmingham Junction Railway (North London Railway); the re-erection of the Crystal Palace, at Sydenham; and the increasing traffic in the streets of the metropolis. These schemes would involve an aggregate capital of about 6,000,000*l.* together with the usual borrowing powers of one-third, or 2,000,000*l.* making 8,000,000*l.*

The Grand Central Station at Birmingham.—This immense erection, which has been in the course of construction for many months past, is fast approaching completion. The offices, hotel, &c. are being proceeded with by Messrs. Branson and Gwyther, and the first section of a rib arch for the vast roof has been raised. This roof, according to the *Times*, will be of larger dimensions than any other in the world. It will be 1,080 feet long, with a span of no less than 212 feet across, unsupported by a single pillar, except at either side. The rib arches, of which a portion has been erected, under the direction of Mr. Phillips, superintendent of works for Messrs. Fox, Henderson, and Company, are each composed of three sections, and the weight of each rib is 25 tons. There are forty-five of these in the roof, at distances of 24 feet apart, and at a height of 75 feet from the rails: nevertheless, according to the *Birmingham Journal*, they look light and fragile. The difficulties have been enhanced by the circumstance that no interference with the traffic on the Stour Valley line could take place. Consequently, a gigantic traversing scaffolding has been constructed, reaching from one side of the station to the other, and of the most ponderous character, by which the work is carried on without blocking up the rails at any point. The roof will be filled with fluted glass, of which a vast quantity will be used, and which is to be supplied by Messrs. Chance. It is expected that the station will be finished in July.

A Metropolitan Tunnel Railway.—A project, it is said, which has been some time in preparation, is likely soon to be brought forward, for a railway from the City to Bayswater by means of a tunnel, following the line of the New-road.

Sinking of an Embankment.—An embankment on the Great Northern line, near Essendine station, north of Peterborough, sank, last week, under the weight of an engine, which it nearly buried. Passengers had to be transferred to a new train by omnibus, which stuck in the midst of the flood, that still covers the country in various districts. The passengers were up to the knees in water while in the omnibus.

Responsibility of Companies to Passengers.—An action of damages against the Edinburgh, Perth, and Dundee Company, brought for not taking up a passenger at Kirkaldy station, where he and others regularly booked for a train, which, being late, could not stop at this station at all, has resulted in the company being found liable in 8*l.* 6s. 8d. the sum craved as damages, besides all expenses. The other passengers who were to share the expenses of the action, are, it is stated, to pursue the company in the same manner.

BUILDING IN LIVERPOOL.—The following is a statement of the number of dwelling-houses erected in 1852 in the Parliamentary borough:—Under 12*l.* per annum, 223; 12*l.* to 25*l.* 727; 25*l.* to 35*l.* 76; upwards of 35*l.* 110; total, 1,136. The number erected in each year since 1838 was as follows:—1838, 1,052; 1839, 997; 1840, 1,576; 1841, 1,761; 1842, 2,027; 1843, 1,390; 1844, 2,450; 1845, 3,728; 1846, 3,460; 1847, 1,220; 1848, 656; 1849, 446; 1850, 420; 1851, 837; 1852, 1,136: total, 23,156.

AMERICAN NEWS.

Death of Mr. Greenough, the Artist.—We regret to observe that this eminent artist died on 18th ult. Horatio Greenough was born at Boston in 1805, and graduated at Harvard in 1825. While at college, he furnished the design for the Bunker-hill monument; and immediately set out for Italy in order to devote himself to the study of his chosen art. A portion of 1827-8 he spent in America, and again returned to Italy, and his time since that date had been divided between that classic land and the land of his nativity. At the period of his death he was labouring, in conjunction with Mr. H. K. Brown, upon an equestrian statue of Washington. Among Mr. Greenough's productions are portraits of President Quincy and John Q. Adams; a "Group of Cherubs," for J. Fenimore Cooper; a portrait of that author; "Medora," for Mr. Robert Gilmore, of Baltimore; the colossal statue of Washington, in that city; and a colossal group, entitled, "The Rescue," emblematic of the struggle between the Anglo-Saxon and aboriginal races on this continent.

Niagara a Mill-dam.—The inhabitants of the Falls of Niagara, and Eastern capitalists, are about to put to practical use this immense water-power, now nearly useless. The *Lockport Courier* says:—"We are informed that an Eastern company has been organised for the purpose of constructing a canal at Niagara Falls. The canal is to commence about half a mile above the Falls, and pass directly through the village at the Falls, and empty, of course, into the river below the cataract." It is not said to what special purpose the power is to be applied.

New Amphitheatre at New York.—Franconi is about erecting a magnificent building in New York, 1,200 feet in circumference, for the full display of his forces—men, horses, dogs, ostriches, reindeer, and monkeys.

New Orleans Hotels.—Mr. N. P. Willis has some "Inkings Over of Pencillings on a Tour for Health," in the "Home Journal," in one of which, dated New Orleans, he gives the following account of the hotels which he points out as a peculiar feature of this "Venice of America," as he calls it:—"The Hotel St. Louis (the principal one after the burning down of the St. Charles), is an immense structure on the scale of the Astor-house of New York, but built around a lofty rotunda, that was once, I believe, the City Exchange. The towering dome of this imposing architectural centre reaches to the roof, and is surrounded with corridors and a gallery; and the hotel (an excellently kept and highly luxurious one), seems quite secondary to it, in its magnificent use as a 'bar-room.' It is paved with marble: a marble counter extends around one-half of its circular area, and so vast is the interior, that the half-moon of busy bar-keepers, seen from the opposite gallery, as they stand and manipulate behind their twinkling wilderness of decanters, looks like a julep-orama, performed by dwarfs,—the murmur of the gliding ice and the aroma of fragrant mint betraying their occupation, but their features quite undistinguishable in the distance. New Orleans is studded all over with these temples of drink—none quite as architecturally imposing as the St. Louis dome, but all sumptuously splendid and costly. The walls are hung with costly paintings, and all that damask and velvet can do for comfort, and gilding and mahogany for splendour, is lavishly done. The average receipts of any one of the fashionable drinking saloons may be set down at 200 dollars a day. A gentleman's expenses, for the inevitable drinks with friends and acquaintances, average from two to three dollars per diem. A sumptuous lunch of turtle-soup, &c. is furnished gratis! at noon, to attract customers—a man getting more than the worth of his money, of course, who lunches and drinks for sixpence; but, the proprietor finding his profit in the few, who eat, in comparison with the many who drink, at that hour, and in the policy of anything which will add to the repute of the place, and draw a crowd. The rivalry of these drinking palaces makes a yearly increase of magnificence in their luxuries and appointments, which seems to promise that the Arts shall be tributary, and the city be largely indebted to them for its splendour."

"HOMES AND PATRIOTISM."

"Homes are our province."—*Builder*, Vol. XI. p. 45.

"That the amalgamated engineers who emigrated to France have patriotically lent a lift to French steam-engine manufacture appears pretty plain.—*Ibid.*

WHAT constitutes a home and patriotism?

It is not merely the building we chance to dwell in, or the furniture in the dwelling. No; a home is where there is mutual love and interest, the place and company where we enjoy the largest share of happiness. Is a man under an obligation to love and respect the country, and the people of a country, he is born in? If so, a man that is born a slave, and kept a slave, must love the country, the people, and the institutions of the country that condemns him to slavery from his birth to his death: it is an absurdity.

What is a slave? There are many kinds of slaves (as may be perceived by the recriminations of the ladies of Stafford House and America, where each endeavours to cover the black spot in their own character by exhibiting all the blackness they can find in the other's, forgetting that two blacks will not make one white. They should have the grant of Burn's supplication—"O, that some power wad the giftie gie us, to see oursel'es as ithers see us)." A slave is a person who is forced by others to labour or to do anything against his will, that is not mutually for his interest as it is for theirs. A person is a slave to himself when his passions or his ignorance induce him to acts that militate against his own happiness. No; patriotism is only a moral obligation on those who truly have homes in a country whose institutions give reciprocity of interests to the whole. In the struggle of the amalgamated engineers and their employers you stood neutral, and recommended mutual concessions and forbearance, for which I thank you. There were faults on both sides: that which was wrong in the men was extenuated by circumstances. I am an antimonopolist in every sense. I consider every man should be allowed to compete and labour at whatever he is able to do. The engineers went against this principle in trying to prevent the labourers from working at the machines, but then the employing class have the monopoly of making the laws affecting the lives and labour of the employed: therefore they had no alternative but to form a monopoly or succumb: all the other desires of the men were highly honourable: wrong can never be right, nor between the right and the wrong can there be any just medium. One evil sometimes begets another, and there may be, and I believe are, extenuating circumstances in the policy of making an evil to counteract one of prior existence that cannot then be eradicated; though I think it sounder in principle and policy to endure the evil we have until we can remove it than to create another to counteract it, the consequence of which we cannot tell. You print *patriotically* in italics, as a sarcasm, meaning the reverse of what the letters spell; but, sir, where was the moral obligation of patriotism on the amalgamated engineers? was there an identity of interest between them and their employers? did the institutions of their country give them mutual protection? Before we condemn men for injustice to their country, justice demands that we should consider if their country has been just to them, for it is only where justice is rendered that justice can be demanded.

If homes are your province, whatever is allowed to be done by law, or for the want of proper laws to prevent it being done, for making dwellings truly homes, is in your province: if dwellings should be a home of enjoyment, the essentials for happiness should be there. The first is, the health of the individual. The health of the people is the first requirement of the law of mutual interests. The first essential for health is pure air: no one should be denied it. Next necessary is pure water for consumption, and plenty of it for cleanliness. No man or body of men should have a monopoly in its supply. Good sewerage and facility for clearing away all animal and vegetable refuse. Have we these necessaries? and why have we not them? Not because there is not sufficient intelligence or ability in the people to provide them? No. It is because there are vested interests in existence incompatible with the comfort of the people, *i.e.* those who have but a common interest: those who have a separate interest are not the people, but from the people holders of invested interest;—because those who have vested interest have the power of making the laws affecting the lives and property of all; while the great bulk of those who have but a common interest in mutual justice have no voice in making these laws, though they are subjected to them.

If homes are your province, then ethics and politics must be your province while right morals and right laws are necessary to make dwellings homes.

A WORKING MAN.

Miscellanea.

THE ROYAL INSTITUTION.—The first of the Friday evening meetings was held at the Royal Institution, in Albemarle-street, on the 21st, when Professor Faraday made some Observations on Magnetic Forces; and a large crowd, including a numerous body of ladies, assembled to hear him. In that clear and easy manner which divests every subject of its difficulties, the professor described an elaborate and beautiful arrangement devised by himself for measuring the magnetic force of different substances in different media. In the course of his address he showed the value of continued observations in a striking manner, by bringing forward the extraordinary facts noticed as to spots on the sun, and the variation of the magnetic needle. It has been shown that the number of spots observable is different in different years, and that these regularly increase in number up to the fifth year, and then decline to the tenth year, when the advance again commences. An entirely different set of observers have found that the variations of the needle accumulate for five years, and then decline for five years; and, strange to say, *the year of the maximum and the year of the minimum correspond in the two cases.*

MR. PEARSON'S CITY TERMINUS SCHEME.—At the first meeting of the newly-elected members of the Court of Common Council since St. Thomas's day, as usual, a change came over the spirit of the previous dream, shall we call it, of general improvements for the City, which seem destined to be ever varying and never realised. After some discussion as to the ways and means for a good road from Battle-bridge to King's-cross, and something like a reproach to the City and Clerkenwell Improvements Committee that they were clearing away ground at the north end of the new street for Mr. Pearson's railway terminus, a charge which was virtuously and indignantly denied on the part of the committee, Mr. H. L. Taylor moved a resolution to the effect that the Fleet Valley Improvement Committee, appointed by the corporation on the discussion of Mr. Pearson's scheme, be dissolved, after being called on to make a final report. Mr. Taylor's feelings seemed to be anything rather than favourable to the practicability of Mr. Pearson's scheme, but his hostility to the committee was also based on their neglect of one understood part of that scheme, namely, the filling up of the Holborn ravine, regarding which, as he remarked, although a main element in the scheme, no provision whatever appeared to be made in the bill before Parliament for the incorporation of the Grand Central Terminus Company. It having been suggested that the resolution, as it stood, would lessen the control of the court over the condemned committee, it was altered in various respects, and after various remarks, chiefly unfavourable to the scheme which the committee was appointed to consider or promote, the resolution was passed so far as regarded the call for their report, and with the addendum "That in the mean time the committee proceed no farther in the matter."

METROPOLITAN COMMISSION OF SEWERS.—A special court was held on the 20th inst. when the secretary read the usual financial statement, showing a balance of 21,161*l.* 1s. 1d. in favour of the commission; and on a motion being made to receive the recommendations of the general committee, Major Dawson said that the public should be informed, in presenting a list of works to be executed on these recommendations, that they were the first fruits of the rates recently collected. At the opening of the commission he had stated that the average balance, after collecting the rates then due, would amount to 163,000*l.* but deducting ordinary expenditure, interest on permanent loans, cleansing and repairs of sewers, and expenses of officers, 48,000*l.* it would leave a sum of 115,000*l.* to be expended in new works in their twenty-three separate sewerage districts. They had now levied the rates fully to the extent of their powers on every district under their control, and the average fund available for ordinary works, including the 20,000*l.* recently borrowed, amounted to 135,000*l.*

It had also been stated that there were works of a less costly description in different districts ordered by the court, and not executed for want of funds, estimated at 244,000*l.* but which he had since ascertained would amount to little short of 300,000*l.* It was, therefore, very evident, that their available balance was inadequate even to the execution of all their minor works, consequently they had given their attention to a selection of such of them as fell the most urgently upon them, having regard to the extent of the average balance in each district; reserving about one-fourth of such sum in hand to provide for unexpected or pressing demands. It was some of these works that they were now about to order to the amount of 28,000*l.* and others he hoped would be brought forward at the next court to the extent of 100,000*l.* Major Dawson concluded by moving that works be executed in the divisions named to the amount stated:—In the Western Division of Westminster Sewers, contract No. 1, 4,586*l.* 15s. 6d.; contract No. 2, 6,568*l.* 10s. 6d.; contract No. 3, 3,227*l.* In the Eastern Division of Westminster Sewers, in one contract, 7,755*l.* 14s. In the Holborn Division, contract No. 1, 7,203*l.*; contract No. 2, 3,509*l.* 15s. 4d.; making a total of 28,263*l.* 19s. 10d. The motion was carried unanimously. Mr. Hunt then moved that, instead of competition being sought through advertisements to the builders at large, the principal firms of the metropolis be invited to offer themselves as competitors for the works, which motion was agreed to.

SUNDERLAND BATHS AND WASH-HOUSES.—The *Sunderland News* says, "Unlike many other establishments of the same nature in other parts of the kingdom, and contrary to the most sanguine expectations of the baths and wash-houses' advocates in Sunderland, the Sunderland establishment has been self-sustaining from the very beginning. Up to 1852 it had been opened a year and nine months, and during that period 31,608 persons have used the baths, and 14,367 persons the wash-houses. The receipts during the same period have been, from the bath department, 344*l.* 18s. 3s. and from the washing department, 340*l.* 5s. 1d. making a total receipt of 685*l.* 3s. 4d. Every one must admit that all these cleansing operations must have been of great advantage to the borough; and that having been supplied at the sole cost of those who immediately reaped the advantage, without any cost to the ratepayers for the great and indirect advantages of which they partake, a great good has been accomplished. The current expenditure for the last half-year is 169*l.* 11s. 8d. to which, if we add 10s. per week, or 13*l.* for repairs, we shall have a current expenditure for the half-year of 182*l.* 11s. 8d. against an income of 215*l.* 18s. 9d. having a clear *gain* of 33*l.* 7s. 1d. which, but for a fortnight's shut up, would have been 18*l.* more, or 51*l.* 7s. 1d. or an annual *profit* of 102*l.* 14s. 2d. The average weekly receipts during the nine months the establishment was open in 1851 was 6*l.* 12s. 6d. but this average during the corresponding nine months of 1852 rose to a fraction over 9*l.*"

PATENT PERFORATED BRICKS.—Some experiments, says the Huntingdon correspondent of a contemporary, have recently been made to test the strength of the perforated brick compared with the solid one. This has been done under personal observation of Mr. Allen Ransome, of the Orwel Iron Works, Ipswich, and the result is shown to be, that the perforated bricks will bear nearly four times the pressure of the ordinary solid ones. One of the former, made of Huntingdonshire clay, bore a pressure of 31 cwt. per square inch, or 58 tons 18 cwt. on the whole surface of the brick, and when the pressure was removed, the brick was found to be broken in the middle, but not at all crushed. The solid ones tried were of the Suffolk clay, and crushed to pieces with 8¾ cwt. per square inch—equal to 16 tons 12 cwt. on the whole surface of brick. Our readers will, of course, not suppose that this difference is all due to the perforations.

LAND AND HOUSE SPECULATION IN AUSTRALIA.—"Two years ago," says the *Melbourne Herald*, "a solicitor bought 100 acres of land on the other side of the Yarra. The terms were 500*l.* at five years' credit, being eight per cent. interest. Last week this property, less twelve allotments (which the proprietor has reserved to himself), was divided into building lots, and sold for 5,000*l.* And parties who purchased at the sale are re-selling at 100 per cent. profit already.—Geelong Land Sale.—Not a single lot was withdrawn, and many allotments realised very high prices; the Ballarat allotments, of two roods each, ranging from 80*l.* to 270*l.*—Value of Town Property.—A gentleman of our acquaintance, who about two years since erected premises near the wharf, which, together with the land upon which they were built, cost 2,600*l.* has, within the last few days, been offered 9,800*l.* cash down for them, and has refused the offer, from a conviction that town property has not yet attained its maximum value."

ENGLISH AND IRISH MAGNETIC TELEGRAPH COMPANY.—The first general meeting of this company took place last week, at their offices, 1, North John-street, Liverpool; present, Mr. Joseph C. Ewart, chairman, Mr. E. Cropper, deputy-chairman, and the other directors. The royal charter of the company was exhibited. The engineer's report was then read, giving the number of miles of telegraphic communication constructed and now in full operation under Mr. Henley's patent, the lines nearly completed, and the contracts in course of progress connecting the following towns:—Lines completed between Liverpool, Wigan, Bolton, and Manchester; Preston, Blackburn, Accrington, Colne, Bury, and Manchester; Edinburgh, Greenock, Paisley, Glasgow, and Carlisle; Dublin, Mullingar, Athlone, Ballinasloe, and Galway. Contracted for and in course of construction between London, Birmingham, Wolverhampton, Manchester, and Liverpool; Donaghadee, Belfast, Lisburn, Moira, Lurgan, Armagh, Newry, Dundalk, Drogheda, Navan, Dublin, Kildare, Carlow, Kilkenny, Tipperary, and Cork. The great trunk line between London, Liverpool, and Manchester, will consist of ten wires, thoroughly insulated and protected, at a depth of 2 feet underground, along the old mail roads. The line between Preston and Portpatrick will, when laid down, with the submarine cable, complete the company's chain of communication, and connect together the three capitals of the United Kingdom, forming about 1,200 miles, exclusive of the lines which the company have constructed for railway accommodation. Under this company's patent, the expense of voltaic apparatus is said to be entirely obviated, natural magnets supplying the requisite power of communication without any artificial electrical excitement whatever; so that the public ought now to have the benefit of decidedly cheap telegraphic communication, all the more especially, perhaps, that the old mail roads of the country have been made so generally available for its ramifications.

ENCROACHMENT OF THE SEA AT DOVER.—Serious concern is felt on account of the continued inroads of the sea and washing away of the shingle of late at Dover; and the harbour engineer, Mr. Walker, has been waited on by a deputation of the Local Board of Health, on the part of the inhabitants, whose complaint has been that although it was well known when the harbour of refuge was projected that the course of the shingle would be stopped, no efficient jetties or groins were placed to retain it, and the shingle was allowed to escape, stone walls being erected in the place of the required jetties; that if a jetty were projected in the bay, of sufficient length to retain the shingle and to save the bathing-houses, and not too long to prevent the shingle from rounding the point, in order to protect the eastern side, the inhabitants would feel more satisfied. Mr. Walker inquired if a jetty near the battery would satisfy the inhabitants, in addition to the present temporary erection? The deputation thought that that would, for the present, satisfy the requirements of the town. The engineer promised to give the subject his serious consideration.

BANBURY WATERWORKS AND DRAINAGE.—At a meeting of the Local Board of Health some correspondence was lately read, and explanations given, from which it appears that Mr. R. Stephenson having expressed a conviction that the detailed plans of towns required by the Central Board of Health prior to giving their sanction to the improvements proposed from time to time by Local Boards, involve a very unnecessary expenditure of money, the Central Board had eventually modified their requirements in this respect. The Banbury Board resolved, therefore, to secure an intimation to that effect from the Central Board, so far as regarded Banbury, as they were anxious to proceed with preliminaries. A long discussion also took place on the question whether Mr. Hawksley be engaged as their chief engineer. Mr. Lloyd, an assistant of Mr. R. Stephenson's, who had been employed, was meanwhile to be requested to lodge his report within ten days.

DANGEROUS STATE OF LONDON-BRIDGE STEPS.—In a recent inquest on the death of a navigator from falling off these steps into the water, the jury strongly recommended that a bar should be placed at the first landing to prevent persons falling into the water.

THE MONUMENT AT WELLINGTON.—At the meeting announced to be held at Taunton for the purpose of considering the best means of restoring and preserving the monument erected many years since at Wellington, in Somerset, to the late Duke of Wellington, it was unanimously resolved, on the motion of Lord Portman, Lord Lieutenant of the county, supported by nearly all the leading men of the county, to restore the column, and for that purpose a committee was appointed and the maximum subscription fixed at 20*l.* Nearly 400*l.* were collected in the room. Between 800*l.* and 900*l.* will be required. The subscriptions are not to be limited to the county of Somerset.

ANNUAL RETURNS OF FIRES IN LONDON.—From Mr. Braidwood's return of fires within the metropolitan district attended by the London firemen during the past twelve months, it appears that the total number of fires which occurred was 923, which are divided into two classes—viz. premises totally destroyed and considerably damaged, and those slightly injured: of the former there were 263, of the latter 660. There were also 93 false alarms, and the engines were called 89 times to what turned out to be chimneys on fire, making 182 extra calls for assistance. The engines had attended at 22 fires in which deaths had occurred.

ARCHITECTURAL STUDENTS, ROYAL ACADEMY.—At a council held on the 17th inst. the following gentlemen were admitted students in architecture:—Messrs. George Saunders, J. W. Horne, Thomas Wildash, William Kerby, J. H. Metcalfe, Samuel Hewitt, F. M. Pfiel, William Tasker.

MONS. HITTORFF, architect of the church of S. Vincent de Paul, of the *Cirques*, and other buildings at Paris, and Honorary and Corresponding Member of the Institute of British Architects, was elected, on Saturday last, a member of the Institute of France, in the class of fine arts. We have in preparation a complete series of illustrations of his last work, the great "Napoleon Circus," and shall speedily place them before our readers.

DRAINAGE BOARDS.—Speaking of the urgent necessity which exists for improving the present defective arterial drainage of many important districts, the *Mark Lane Express* says—"Many commissions of drainage will require to be remodelled, both as regards their constitution and their jurisdiction. With respect to jurisdiction, it is essential that its bounds should not be territorial but natural; not limited to hundreds or counties, but co-extensive with the whole catchment basin drained by a river and its tributaries, over whatever counties or parts of counties it may extend. Along the valleys of our principal rivers there are many separate boards of drainage, all working at a disadvantage, if they work at all, because they work without any combined system of operations. The proprietors near the head waters lay their own lands dry at the expense of those immediately below them. These cannot relieve themselves of the additional waters poured down upon them, because they have no command over the outfall, which is under the jurisdiction of other commissioners, who regard—and with their present limited powers, very properly regard—only the immediate interests of the locality under their special care. These local boards not only are without the power of systematic action, but they are encumbered with the expense of more than one staff where one would suffice. Their local establishments, generally inefficient, cost more than the sum which would command the best professional services for a large district.

THE GEOLOGICAL SURVEY OF THE COUNTRY.—The geological surveys of the United Kingdom, under the direction of Sir H. T. De la Beche, are rapidly progressing towards completion. The counties already published are Brecknock, Cardigan, Cornwall, Carmarthen, Carnarvon, Devon, Glamorgan, Radnor, Merioneth, Monmouth, Montgomery, Pembroke, Somerset; and in Ireland, Carlow, Kildare, Dublin, Wicklow, and Wexford. The counties in part completed are Dorset, Gloucester, Hereford, Denbigh, Salop, Brecon, Flint, Angelsea, Lancaster, Chester, Derby, and the West Riding of Yorkshire. To this may be added the Isle of Wight, completed, but not yet published, and North and South Staffordshire, which will be ready for publication, by Messrs. Longman, in the course of a few days. These maps are founded upon those of the Ordnance survey, coloured from actual survey by persons employed in connection with the Museum of Geology. The boundaries of each formation and subdivision—of the various stratifications—of slate, freestone, limestone, gypsum, coal, and mineral, with their outcrop or dislocation, according to the *Morning Chronicle*, are traced on these maps with the greatest minuteness and accuracy.

TO CORRESPONDENTS.

The conclusion of Mr. Picton's Paper is unavoidably postponed with some others.

"M. S." "M. P." ("*M. T.*" would have been more appropriate), "H. L." "T. G." (we do not recollect the communications referred to. In the present case, he is misinformed), "H. H. K." "C. W." (thanks. "T. A." (we are unable to assist), "R. L. S." "W. H. A." "G. K." (good wishes for recovery), "J. T. C." "R. P. P." "Ir. D." "J. W. G." "W. H." (address a letter to "Chairman of the Committee," at York), "R. W. F." (we do not communicate on "hearsay"), "O. H." "G. W." "A. B. H." "W. H." (next week), "T. O. jun." (we scarcely understand the extracts), "Argus," "P. P" (we have not room for *circulars*), "C. H. S." (next week), "A. R. H." "S. B." Chester, "J. E." "P. J. T." "H. H." "Antiquated Member," "H P." "A. F. M." (we shall). "W. B. C." "T. T." "G. T. J." "Carlow" (must be wrong as to the name), "Architectural Botany" (will appear), "London Plasterer" (shall appear), "J. B." "G. C." "E." "H. G. M."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

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JOSEPH SOUL, Secretary.
Office, 32, Ludgate-hill, Jan. 26, 1853.

CIVIL ENGINEERING and SURVEYING.—UNIVERSITY COLLEGE, LONDON.—Professor HARMAR H. LEWIS, A.M. will COMMENCE his COURSE, on WEDNESDAY, 2nd FEBRUARY, at SIX o'clock p.m.
The subsequent Lectures will be delivered during the months of February, March, April, and May, as follows:—
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Fees for the Class of Engineering, each division, 5*l.*; for both divisions in one payment, 9*l.* Surveying.—Students of the Class of Engineering, 3*l.*; others, 5*l.*
JOHN HOPPUS, Ph. D. Dean of the Faculty of Arts and Laws.
CHAS. C. ATKINSON, Secretary to the Council.
24th January, 1853.

TO ARCHITECTS.

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Midland,
Merseyshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

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The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E., G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

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"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

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SPECIAL NOTICE.

To secure the advantage of this year's entry, proposals must be lodged at the head office, or at any of the society's agencies, on or before 1st March.

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GEORGE H PINCKARD, Resident Secretary

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½ inch yellow	13s. 6d.	½ inch white	12s. 6d.
⅝ " "	14 6	⅝ " "	13 0
1 " "	16 0	1 " "	15 6

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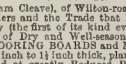
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Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 2, Charlotte-row, Mansion-house, City.

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and SATIN WOOD STAINS, for staining various sorts of Inferior Woods, so as to give them the appearance and character of the more costly and ornamental kinds. In the BUILDING and DECORATING CHURCHES, where it is desirable to give to the cheaper kind of wood the appearance of antique Oak, or to make Deal assume the character of Oak Panelling, whereby the effect of the more costly may be produced by the use of a cheaper material, these Stains will be found more effective than any means hitherto employed. For the exposed Timbers of the inside of the Roofs of Churches, by brushing them over with the Stain, which operation is very rapidly done, of course economically effected, the appearance of an oaken roof will be produced. For colouring the backs of the seats, pews, the fronts of galleries, the pulpit, &c. it is equally advantageous.—Prepared by HENRY STEPHENS, and may be obtained at 54, Stamford street, and at the Office of "The Builder," at both which places may be had the proper Varnish and Size, with directions for use.

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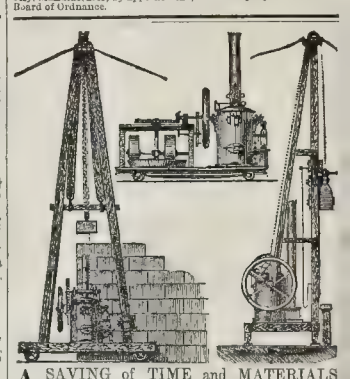
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TESTIMONIAL

From the Trustees of the Birkenhead Docks

"Engineer's Office, Dock yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERNETHY."

The Builder.

SATURDAY, FEBRUARY 5, 1853.

FOR years we have laboured to point out the folly and evil consequences of building houses to burn, as is still done, and to recommend the adoption of modes calculated to lessen the loss now annually sustained by fire. The extensive circulation given to some of our articles on the subject, especially in 1848, aided, as we have reason to know, in giving right direction to public opinion on the subject. It takes a long time, however, to introduce an innovation, however great an improvement it may be, so that the desired alteration proceeds but slowly. The fact, too, that it has been much more expensive to make buildings fire-proof than to construct them in the ordinary manner, coupled with the fact that we build on *short leases*, has materially retarded the progress of the system. People are usually willing to take the *chance* of a danger rather than the certainty of an additional outlay, however small.

On the 25th of last month a paper was read at the Institution of Civil Engineers, "On the Construction of Fire-proof Buildings," by Mr. James Barrett. Some years ago we called attention to the system which formed the subject of the paper (Fox and Barrett's).* Since that period, improvements have been introduced, so as to adapt the system to every variety of building; and we are glad to find that it has been extensively adopted, not only in many important public buildings, but also in others of a more private or domestic character; and, with the recent introduction of *wrought* or *rolled iron* for the joists, for which we have long contended, we regard the system as one destined to work an important change in the art of building. Mr. Barrett in his paper first referred to the iron-girder and brick-arch system of construction; and the evils which might result from the adoption of that principle were exemplified by reference to the fall of the cotton-mill at Oldham, in 1845; where the lateral thrust of one of the arches having fractured a cast-iron beam, had caused the sudden destruction of the entire building: the writer contended that a system liable to produce such calamitous results could not be regarded with that degree of confidence which should be felt where many lives and much property were at stake.

The paper then proceeded to describe his system of fire-proof construction, which had been to some considerable extent adopted as a substitute for the usual methods of building, and as a remedy for the defects complained of. The chief objects to be accomplished were shown to be,—making each floor of the building fire-proof, so as to prevent the communication of fire from story to story; avoiding all lateral thrust or weakening effect upon the walls; securing the building from the attacks of dry-rot; giving increased durability to the structure, and rendering it practically sound proof;—combining these advantages, at the same time, with simplicity and economy of construction.

In accomplishing these objects, joists of wrought, or rolled iron, of an improved form, combining lightness with great strength and economy, were used; and by the employment of layers of incombustible materials, chiefly concrete, supported by and consolidated with the joists, a strong and solid fire-proof foundation was obtained, upon which any description of finished surface, adapted for a floor or roof, might be laid. The various parts of the structure having been minutely described, it was stated that in point of strength, the floors, even of an ordinary dwelling-house, constructed on this principle, would, if crowded to the utmost possible extent, be loaded with only one-fifth of their breaking weight.

The various applications of the system to such buildings as Guy's Hospital, King's College Hospital, the Training College, Chelsea, and the Flax Mills at Newry, the spans of which were considerable, were then detailed: these consisted of the use of girders of cast iron, with minor joists of the same material; of boiler-plate girders combined with cast-iron joists, the whole of the additions to Guy's Hospital having been built in this manner; and of boiler-plate girders combined with rolled-iron joists; the latter method providing for every contingency, whether as regarded width of bearing, strength of floors, or liability to impact, or vibration; and in cases where the use of columns was admitted to shorten the bearings, both girders and joists of rolled iron were employed,—this latter application referring chiefly to mills, warehouses, manufactories, and similar buildings.

Details were given of the actual as well as the relative cost, as compared with other floors, under all circumstances; and it would seem from estimates since submitted to us that substantial and well-constructed timber floors were more costly than the fire-proof floors finished with a surface of cement; and that the fire-proof foundation, finished with the ordinary boarded surface, was, on the average, very little more expensive than ordinary timber floors.*

Mr. Barrett rightly stated that the subject is one of great importance, considered merely in a commercial point of view, as is proved by the fact of nearly half a million sterling being annually paid, in London alone, for fire insurance, exclusive of the duty, adding that upwards of one thousand fires occur annually in the metropolis, and that more than one-half of those which reached the structure of a building, are considered to have originated in defective or over-heated chimney-flues acting upon the timbers. His plan is certainly not to be looked upon as a mere theory, but as one the value of which has been applied to every variety and description of building.

We have examined some of the buildings constructed upon this principle, to one of which we will more particularly refer—Guy's Hospital—from its importance as one of the leading metropolitan institutions, and as being also one in which the works are on an extensive scale, and the spans considerable.

The width of the patients' wards is 21 feet, and that of the day rooms 30 feet. The floors of these rooms are formed by main wrought-iron girders (of boiler-plate and angle-iron), placed at distances varying from 10 to 14 feet apart, and coupled together where they meet in the centre wall, so as to extend the entire width of the building,—about 48 feet. Cast-iron brackets are riveted to the vertical web of these girders at intervals of 18 inches, and minor joists of cast-iron run from girder to girder, bearing upon the brackets, the ends of the joists being cast with a shoulder, so as to drop into the bracket and form a tie.

Upon these the usual concrete fire-proof foundation is laid, the finished boarded surface being carried by light bevelled fillets partially imbedded in the concrete.

The terraces are formed in a similar manner, except that they are finished on the surface with asphalte, and the joists span the distance from wall to wall without the aid of girders. The quantity already executed here is considerably more than an acre in extent.

We should mention that the architect, under whose directions the additions at Guy's Hospital have been erected, is Mr. Rhode Hawkins.

A few days ago we looked over the buildings in Stamford-street, now being erected under the direction of Professor Hosking, for Messrs. Clowes, the well-known printers, wherein the architect has introduced the French plaster ceiling, to form practically fire-proof apartments, as set forth in his "Guide to the proper Regulation of Buildings in Towns." We described this at some length in our review of the work (Vol. VI. pp. 13, 541, and elsewhere), but will briefly recapitulate the particulars. The ceiling is formed from above instead of from below, and, of course, therefore, before the floor above is laid. The workmen proceed in this manner: the carpenters' work being complete, strong oak laths are nailed up to the under side of the joists, their own width apart. A platform of boards is strutted up from below, parallel to the face of the laths, at the distance of an inch and a quarter from the underside of the joists. Mortar, composed of lime and hair and French plaster, is then thrown in from above over the platform between and over the laths, to a thickness of about 2½ inches, and is forced in under the laths and under the joists and girders. The mortar soon sets, and the platform is then shifted on, to another compartment, until the whole ceiling is formed. The right distance of the platform from the laths is obtained by large-headed nails driven in to the under side of the joists with the required projection. The float used above has a ledge on each side, which works on the top of the joists, and so the whole ceiling is made of a uniform thickness, consisting of a strong slab of mortar, in which the laths that hold it up are incorporated. We were amused to see the inexorable "referee" slopping in the mortar, and teaching the mode of proceeding to Messrs. Piper's willing workmen, who stood by.

Such a ceiling would doubtless successfully resist fire acting on it from below, and so would diminish danger, even if it had a boarded floor above. The system, however, as practised abroad, includes a table of rough mortar on battens *above* the joists, laid with paving tiles to form the floor.

The importance of making our buildings fire-proof cannot be too often or too loudly urged.

ON THE ARCHITECTURAL MEDALS OF THE ANCIENTS, AS ILLUSTRATING THE EDIFICES AND CUSTOMS OF THE GREEKS AND ROMANS.*

AMONG the questions upon architecture, suggested in the pamphlet issued by this Institute in the year 1836, for the direction of correspondents and travellers, occurs the following sentence:—"Another source of information is ancient coins and medals, which frequently represent upon the obverse (reverse) some building, the erection of which they are designed to commemorate. Series of these have been chronologically arranged at Rome, and sold in sets. From them Piranesi and other architectural writers have derived authority for the restoration of many ancient buildings."

Although this suggestion was printed seventeen years since, yet no one of our members has hitherto taken up the subject; and I must own that I felt mortified, as an architect, that it should have been reserved for my friend, the Rev. H. J. Rose, of Houghton Conquest, to be the first to treat upon this special matter, he having read a brief but very effective paper on Architectural Medals, a few months ago, before the Bedfordshire Archæological Society.

The following observations are therefore offered, in order to convey an impression of the rich treasury of reference which medals offer, and to explain some of the peculiarities relating

* See vol. vi. p. 543, for description, &c.

* A fire-proof mill, 108 feet long and 51 feet 6 inches wide, we are told, has been erected in Ireland at a cost of 1,600*l.* or 2*d.* per foot cube.

* Read at the meeting of the Royal Institute of British Architects, January 24, by Professor Donaldson. Mr. Inman, V.P. in the chair.

to them, which have been variously interpreted by different writers. I must own that I was "medal-bitten" some thirty-six years ago by the purchase of a copy of Erizzo's admirable "*Discorso sopra le Medaglie degli antichi*," the woodcuts of which, amounting to several hundreds, present numerous illustrations; and during my professional travels in Italy, Greece, and Turkey, I became confirmed in my opinion of the importance of medals as a source of illustration, both in an architectural and archæological point of view. I soon found it necessary, when I entered upon this paper, to visit the Medal-room of the British Museum; and I there experienced, from the courtesy of Mr. Burgon and his colleagues, not only the most unwearied patience in submitting for my inspection, during several days, tray after tray of that rich collection, but they also placed their vast fund of knowledge and experience readily and frankly at my service. From these gentlemen I received advice and suggestions of the most valuable kind,—a privilege not peculiar to myself, but unreservedly communicated to those earnestly engaged in the pursuit. I have also availed myself of the copious information contained in the descriptive catalogue of that zealous numismatist, Capt. W. H. Smyth, R.N. which he published at Bedford in 1834. The names of Angeloni, Eckhel, and Mionnet comprehend some of the medallic authorities to which I have had occasion to refer; and I must acknowledge the kindness of Mr. Hobler, of Canonbury-square, Islington, who has most liberally allowed me to correct my notes by an inspection of his noble collection of imperial brass coins, selected with great cost, judgment, and taste.

Authors on medals have adopted various systems, of periods, countries, classes, families, and such like arbitrary divisions. Captain Smyth limits his descriptive catalogue to Roman, imperial, large brass, medals; restricting it to a country, a royal series, and a metal of a fixed size. I consider myself at liberty, treating of architectural medals, to adopt a classification peculiar to this subject, and to consider every other circumstance as subordinate to that; my object not being to illustrate the medallic history of a colony, a province, a country, or a dynasty, nor the series of any particular metal or size. I have therefore divided the illustrations into four classes, which reflect, as it were, the customs and habits of the ancients in reference to their edifices, and reveal to us observances and practices which otherwise had been imperfectly known.

1. *Sacred*, including temples, altars, ædiculæ, and funereal edifices, such as those connected with the apotheoses of the Roman emperors—sepulchres.

2. *Monumental*, as sculptured and rostral columns, triumphal arches, trophies.

3. Edifices of *Public Utility*, as the Forum, Basilica, Thermæ, Macellum, Villa Publica, bridges, ports.

4. Those for the *Celebration of Games*, as the theatre, amphitheatre, circus.

Of the medals to which I shall have to allude, two only are properly Greek. All the others are Roman, struck at the Eternal City, or in the provinces. These latter bear on the *obverse* the head of an emperor or other magistrate of the empire, Julius Cæsar being the first who, by a decree of the senate, had the distinction of his head being stamped on medals: on the *reverse* is figured the device, which we shall have to consider. The sizes are various, but the brass ones are generally classed into the large, middle, and small; and as on these alone, with few exceptions, occur the letters or sigles S. C. (Senatus Consultû), it is presumed that the senate had the privilege of striking medals only, the emperors reserving to themselves the right of coining in gold and silver. Some consular families had also the right of coining, and many of the medals which we shall have to examine are among those struck by the nobles of Rome, as the Manlian and Cousidian coins: on this point Riccio has written a very elaborate and interesting volume.

Without entering into the learned discussion which has, for more than three centuries, occupied the researches of medallists, I may at once state that it is generally admitted, that they were the current coins of the day; although some of them, as the medallions for instance, may be assumed unquestionably to have been struck on special occasions, to commemorate an event, for the purpose of distribution as a largess; or, as Suetonius tells us in his "Life of Augustus Cæsar," for private presentation to friends, clients, or followers. We may learn from Erizzo, in his "*Discorso*," a further illustration of the proverb, that "there is nothing new under the sun;" for he says that the Roman boys, at the time of Hadrian, tossed up their half-pence and cried "head or ship," of which tradition our "heads or tails," and "man or woman," is certainly a less refined version. We thence gather, however, that the prow of a vessel would appear to have been the more ordinary device of the reverse of the coppers of that classic period.

It may be observed that the brass medals resist least the injuries of time, exposure, and use; and that the gold and silver are usually the best preserved, the most brilliant, and sharpest. The dates of the Roman coins can be ascertained generally from the legend or inscription round the emperor; but on the coins of the Roman provinces, as Greece, Syria, Egypt, &c., the date is noted by numerals, the commencement of the epoch not being synchronous, from one common period, but each locality having its own special date, commencing, as may be supposed, from the foundation of the particular city. The head of the obverse, and the legend or type of the reverse, are usually, in this class of coins, contained within a marginal engrailment, consisting of a ring of dots, and sometimes of a ring of beads and pearls round the edge; at others, by a raised line or sunk rebate.

Having made these few preliminary remarks to render his future observations the more intelligible, Mr. Donaldson commenced his review of the medallic series of above fifty illustrations exhibited on the walls, by examining the two celebrated solitary architectural medals of Athens,* the one, in brass, showing the Cave of Pan,' ne Acropolis, the colossal bronze statue of Min rva, and the Parthenon; the other, also in brass, with the Theatre of Bacchus† and Acropolitan buildings above it, as the Propylea and Parthenon. These appear to be the only purely Greek coins which remain with representations of buildings on them. He next described the Roman coins of temples struck during the reigns of the succeeding emperors, and which displayed temples with surrounding courts and other accompaniments, as the remarkable arrangement of the Temple of Antoninus and Faustina in the Roman Forum, so peculiar with the inclosure in front. One coin showed Marcellus carrying the *spolia opima*, and about to place them in the Fane of Feretrian Jove in the Capitol, which is represented as a small plain Tuscan edifice, exactly coinciding with the description of ancient authors.

In most of the porticoes the central intercolumniation was widened, in order to allow the representation of the statue in the *cella*. In other instances the lecturer imagined, that although numismatists called all columnar edifices temples, yet that certain indications suggested the idea of some being intended to represent the canopy, or *baldachino*, or *ciborio*, as it is called by the Italians, erected over the statues of the deity, as the Roman Catholics do, over the high altar, statues of the Virgin, or shrine of a saint. He alluded to several authorities in confirmation of the hypothesis, and suggested whether the word *tholus*, as cited in Facciolati, might not be the Latin term for such a canopy. *Tholus*, as derived from the Greek, has always been considered to mean a dome, but possibly these canopies might usually have been surmounted by a domical roof, like that on several of the medals. Facciolati quotes a passage Varro (apud Non, c. 6; n. 2):—"*Et pater divum tirsuleum fulmen igni ferido actutum mittat in tholum Macelli.*" A critic, imagining that no slaughter-house (*macellum*) could have a dome, suggests a correction in the reading by substituting *tholum Marcelli*, the temple of Marcellus. A coin, however, gives the elevation of a Macellum Augusti with a dome, proving that the suggested correction would have been a corruption of the text, and the value of the coin to indicate the purity of the original reading. Mr. Donaldson then illustrated by medals several circular temples, to Mars Ultor, Augustus, Juno Martialis, and Apollo. A small silver coin gives an elevation of the temple to Venus on Mount Eryx, in Sicily, and a bronze medal of Caracalla makes us acquainted with a remarkable edifice of Paphian Venus, in Cyprus, with turrets in the centre: between these is a recess, within which stands the conical-shaped stone, under which form she was there worshipped. At the side are alcoves with doves over them, and in front is a large *piscinæ*. Mr. Donaldson considers this to represent a portion of the Paphian Bower, rather than the temple to Venus, whose altars daily smoked with the sacrifice of one hundred male animals. He next described a circular and domed temple of Melicertes at Corinth, where he was worshipped under the name of Palæmon, and where the Isthmian games were instituted in his honour.

Passing over to Syria, many coins of the Roman emperors were exhibited with temples and statue canopies at the ancient towns of Emisa, Biblus, Tripolis, Antiochia, &c. which he on the coast along the east end of the Mediterranean, near Tyre, Sidon, Beyrout, and Baalbec; and each of which presented for observation some peculiar architectural feature. The conical-shaped stone, already alluded to as at Cyprus, also forms a prominent object of worship on the coast; and one of Tripolis represented the Syrian Venus Astarte, the Ashtoreth of the Sidonians. A medal of Emisa shows a six-columned portico with a huge aerolite, in front of which is a noble eagle, proving that the thunderer was here worshipped under the same form as Jupiter Ammon in Egypt. There were also coins, with the types of temples or canopies, to the Ephesian Diana and Samian Juno, whose priests seemed to carry on a rival worship, the statues of their goddesses being similar in arrangement, costume, and accompaniments. The last medal alluded to was a brass one of large size, struck by Nero, bearing a representation of a Janus surrounded by the legend, "PACE . PER. TERRA . MARIQVE . PARTA . IANVM. CLVSIT," to commemorate his supposed triumphs. The masonry of the walls, the windows, the sculptured friezes, the festoon over the door, and the door itself, with its panels, knockers, handles, and knobs, are represented with remarkable clearness and fidelity.

Having arrived at this concluding illustration of the first and most important division of his subjects, Mr. Donaldson begged permission to reserve the description of the other medals till a future evening, should the members be disposed to pursue the consideration of the topic. The other buildings would be the secular ones. He regretted that he had been obliged to run the risk of prolixity by the enumeration of the peculiarities of each type, and that he had not been able to render it more acceptable by such graceful allusions as those which throw a charm over the elegant essay of Addison on the like subject. But the gravity of the topic demanded serious attention, and, in addressing a professional body, it was necessary to adhere strictly to the learned authorities which he had to quote.

The medals already alluded to were illustrated by twenty-seven large drawings, and a like number of illustrations of other medals of columns, busts, bridges, arches, circi, amphitheatres, and such buildings, were exhibited at the same time, showing the series of edifices which still remain to be considered.

In the discussion which followed,

Mr. Hamilton, Hon. Fellow, observed, that the valuable remarks of Mr. Donaldson appeared to suggest to his mind a strong probability that the supposed elevation of the *baldachino* as the ancient *tholus* was correct. It was strengthened by reference to the remains of some other temples, besides those which Mr. Donaldson had mentioned, and which were also surrounded by semicircular courts;

* Although of the Roman period, neither of the Athenian coins bears the portrait of an emperor. Mr. Burgon states that, so great was the respect borne by the conquerors to the genius of the conquered, Athens was always considered by the Romans, in regard to many of its privileges, as if possessed of autonomous power, and her coins always bore the head of Minerva (Ἀθηνᾶ).

† This was originally in possession of W. R. Hamilton, esq. Honorary Fellow of the Institute of British Architects, who presented it to Lord Aberdeen, Honorary Fellow, whose researches into Grecian architecture and antiquities are so well known and appreciated: subsequently it reached the British Museum.

although these were represented on the medals as having angular sides. The court in front of St. Peter's was probably derived from the same source.

Mr. Lockyer, having been for many years a collector and student of this class of antiquities, begged to offer a few observations. Mr. Donaldson's paper was almost perfect, but he might, perhaps, be excused if he brought before the meeting one or two trifling omissions. The earliest medals that gentleman had referred to were the two struck at Athens, which, in fact, were the only specimens of the Greek period he had cited at all. [Mr. Donaldson explained that they were of the Roman period.] There were, however, others of earlier date. There was one in particular, struck in the fifteenth century, B.C. which was exceedingly interesting, as it bore upon the reverse a plan of the city of Messina, in Sicily. That city was anciently called Zancle, from the peculiar shape of its harbour, which was then, as now, enclosed by a narrow strip of land taking somewhat the form of a sickle; from which cause the ancient Syrian Greek name for that instrument ξαγκλον (Zanklon) was given to the town. Upon some very ancient coins bearing the name of this city, there was impressed a plan or representation of the harbour, with the adjacent buildings. One, in the British Museum, showed the harbour and several square buildings. Other coins represented the gardens of the Hesperides, which were presumed to be situated near Mount Atlas, in Africa. These, however, were almost the only types in the whole Greek series representing any thing at all approaching to architectural structures; and it was an interesting inquiry, to what cause this scarcity of architectural representations in the Greek series, which extended to 20,000 types, should be ascribed; more especially as the Greeks excelled so much in architecture. Possibly the reason might be found in the fact that their coins were, more or less, dedicated to the Deity, the types being peculiarly religious. They bore the head of a deity, or some myth connected with the city in which they were coined; but nothing that directly commemorated the people, or the place and its edifices. Until the time of Alexander the Great, the portrait of the sovereign was not impressed on coins, and only one of his reign was so distinguished. Subsequently that custom became more frequent; but until his time, the forms and images on coins were essentially religious. With regard to Mr. Donaldson's idea that the *baldachino*, and not the entire temple, was intended to be represented on many Roman coins, he (Mr. Lockyer) perfectly concurred in it. It explained many difficulties, which could not be otherwise accounted for. It was probably a conventional form, which was sent round to the different minters and die-founders throughout the empire, as a representation of a shrine or baldachino surmounting the figure of the God; and it was varied to a great extent even in coins of the same type. The correctness of Mr. Donaldson's opinion was more especially shown in the representations which he had referred to of the Temple of Diana at Ephesus; because it would appear, from the Acts of the Apostles, that the makers of the shrines were the persons who raised the outcry against St. Paul. These particular specimens were undoubtedly of Asiatic workmanship, although they had Roman characters upon them. Mr. Donaldson was equally correct in his reference to the representation of the Temple of Mars Ultor on the coins struck by Augustus, which there could be no doubt were executed to commemorate the restoration of the standards, which had been taken from Crassus by the Parthians seventy years before. Augustus considered that the great event of his life, and his coins presented numberless types allusive to it.

Mr. Fergusson, in reference to one of the illustrations of Mr. Donaldson's paper—that of the Paphian Venus—drew attention to a print in his own Illustrations of Indian Architecture, representing a building, if he might so call it, and forming part of a structure of the same class, being a gateway of the Tope at Sanchi, in India. This gateway was singularly like the delineation on the coin referred to, especially in the construction, in the crescents and turrets surrounding it, &c.

Mr. Hobler, visitor, said that Mr. Donaldson had referred to a coin in which a figure was represented seated under an alcove, from which wreaths were suspended. He (Mr. Hobler) had a coin in which the alcove was not supported by columns but by dolphins, with their heads downwards, and their tails forming a sort of capital. The figure held in her hands a pair of shears. One of the coins of Marcus Aurelius, referred to by Mr. Donaldson, represented a figure of Mercury, and was remarkable as the only coin on which the word "religion" occurred, the words being "RELIG. AVG." This coin, which was struck in the sixth year of Aurelius, bore, upon the pediment of the portico, the figures of a cock, a ram, a purse, a tortoise, and a caduceus, all emblems referring to Mercury. The figure of the god held a caduceus in his hand, and on specimens in good preservation the wings upon his cap and his heels might also be perceived. The coins representing the Temple of Juno Martiali were always in brass; whilst those representing the Temple of Mars Ultor were in silver; and he quite concurred in what had been said as to the latter commemorating the recovery of the standards. On some of the coins of Augustus, a Parthian was represented presenting a standard to that emperor. Mr. Donaldson would doubtless refer to the coins of bridges, ports, &c. on a future occasion; but he (Mr. Hobler) might perhaps be allowed to refresh his memory as to some of them. Of the port of Ostia, there were three or four different views—one showing warehouses all round it, others with detached warehouses, some with the pharos and some without, but generally with the pharos in front of the harbour. There were also representations of the bridge of Trajan and the arch of Galba, which was composed of four arches surmounted by elephants, and approached by steps, which went inside the arches. Mr. Donaldson had referred to one representation of the Temple of Janus, and he should be happy to place another in his possession. There were different representations of this temple or prison—for it was both—in gold and silver: that of Mr. Donaldson was in brass, and showed it on a larger scale.

NOTES ON FRENCH BUILDINGS,

PRINCIPALLY ECCLESIASTICAL.*

ANGERS.—The town of Angers, the capital of the ancient province of Anjou, has been a place of great importance, and is still a flourishing city. Its appearance and style of architecture differ much from those we have been examining. This arises principally from the nature of the building materials. The rich-coloured white stone of the centre and north is not met with here. The buildings of ancient date are built with a dark-coloured slaty stone, which gives them a very sombre cast. The old dwellings are principally timber framed. The aspect of many of the streets strongly resembles Chester, but the enrichments of the barge boards and window framing are on the whole richer and more elaborate, and the buildings of earlier date and purer style. One house at the corner of an open square near the cathedral is especially worthy of notice. It is in the usual style of wood framing; but at the projecting corner is an angle turret, supported on a corbel, under which is carved a tree with spreading foliage, which formerly shaded the figures of Adam and Eve. The twisted columns which form the facings of the main timbers are carved with figures in high relief, centaurs, men in armour, figures playing musical instruments, &c.

The cathedral of St. Maurice is similar in character internally to that of Poitiers, and of about the same date—the middle or latter part of the twelfth century. In this style, which is very peculiar, side aisles seem not to have been much affected, the object, apparently, having been to cover as wide a space as possible in a single span. The Cathedral of Angers consists of nave, choir, and transepts without aisles. Large blank arches are carried up in the side walls in each bay, as if side aisles had been intended, but not executed. In the transepts, these arches are mere slender ribs, forming arched panels. Above these panels and arches there runs round the interior of the building a large cornice supported by a corbel table of grotesque sculpture, very well carved. The top of this cornice being recessed back, forms a kind of triforium gallery. The ends of the transepts have rose windows of thirteenth century character. The other windows are coupled, some semicircular-headed, and others pointed. The east end is apsidal. The west front is of good design and workmanship, principally of the thirteenth century. The centre doorway is richly sculptured with three orders of statues and canopies carried round the archivolt, with a sculptured tympanum and statuary in the jaumbs. The two western towers are of the elongated Early Pointed form, with long shafts and arches forming panels. Above the third stage the towers are dissimilar, though both are crowned with spires, with spirets at the angles, of later date than the substructure. Between the two towers, almost forming the whole into a solid mass, rises a square tower in the centre, diminishing to an octagon, and covered with a small cupola. This structure is of Italian character, and dates from 1540, to which period it is probable the spires may be referred. Below the commencement of the centre tower are eight statues of men in armour, with canopies and pedestals, no doubt of the same date. The whole is well executed, though not Gothic in feeling or style.

The rich portal bears marks of polychromic decoration, the background having been blue, the draperies green and gold. The figure in the tympanum is the Saviour surrounded by the emblems of the four evangelists.

The cathedral, at the time of my visit, was undergoing a careful repair and restoration. The *Musée*, a building in the Latest Pointed style, was also under repair. It has a curious cloister and winding staircase.

The castle, a massive structure of early date, with its seventeen towers and curtain-walls, on an isolated rock, resembles much the Edwardian castles in Wales, especially Conway. It appears to have been less interfered with than most of the French "*chateaux forts*," in any attempts at modernization.

The tower of St. Aubin, in the higher part of the town, is a lofty structure, square below, breaking into an octagon above, with flat buttresses terminating in octagonal turrets and spirets. The apertures have pointed arches with Norman details. Its date is probably the latter part of the twelfth or the beginning of the thirteenth century. The church is destroyed. The monastery of St. Aubin formerly occupied the site of the present prefecture, a modern building, erected, it is said, by the Benedictines in the seventeenth century. The modern court-yard and cloisters appear to occupy the same site as the ancient. The inner wall of the western cloister consists of a series of arcades in the richest Romanesque or Norman style, covered with sculpture of the most elaborate character, and partially ornamented with paintings. The state of preservation is perfect, the façade having been walled up and plastered over for a long period.

The detail consists of arches and sub-arches partly pierced and partly blank; the capitals, bases, mouldings, and some of the archivolts richly sculptured with runic knots, dragons' heads, birds, and reptiles. The fascias of one pair of arches are painted in a very ancient style, with the Adoration of the Magi, the Slaughter of the Innocents, &c. bearing much resemblance in drawing to the figures on the Bayeux tapestry, with a representation of a castle in one part. The sculptures also bear marks of having been painted in colours.

The churches of St. Serge and St. John much resemble each other in character, being both late twelfth-century erections, with the domical vaulting and other peculiarities before alluded to. St. Serge is rather complicated in plan with a sort of double transept, forming five aisles in one part, giving great lightness to the interior, the choir being separated from its aisles by very light slender columns. The main arches and the vaulting are pointed. Some of the window arches are round. The exterior of both churches is very plain. Besides the timber-framed houses above alluded to, there are some fine stone-built mediæval mansions. In the Rue Basse de Figuier there is a fine specimen of the Early Renaissance, with Italian details, but large mullioned windows. In the Rue du Cornet a stone-fronted house, bearing the date of 1557, exhibits some elaborate scroll-work.

The suburb of Doutre, on the right bank of the river Maine, possesses a number of very ancient and interesting buildings.

The church of the Holy Trinity in the Doutre suburb is of early twelfth-century date. The east end terminates in three apses to the choir and aisles. The tower is placed at the extreme east end, adjoining the curve of the apses. This tower is square; the faces formed into panels by shafts running up to a bold cornice, breaking off into an octagon above. This octagonal portion has similar shafts and panels. The windows are round-headed, with long, slender shafts, splays, and mouldings.

The interior has the domical vaulting, similar

* See p. 34, *ante*.

in character to the cathedral, but probably of a little earlier date.

Near the suburb of Doutre a very large building is in progress, designed as a public hospital for the district. A new bridge has recently been built with stone piers and camber arches in carpentry, and new streets are in course of being laid out.

Bourges.—The city of Bourges, the chief town of the ancient province of Berri, is old and interesting, but presents few indications of modern improvement. Its streets are narrow, steep, and tortuous. Most of the houses of ancient date are timber-framed, with great similarity in the designs of the fronts. Much of the ancient fortifications is destroyed, and the ramparts converted into public walks; but some of the bastions and walls yet remain, presenting unmistakeable indications of Roman work.

There are a few ancient stone mansions, but only two of which are worthy of notice. One, which is now the Caserne de Gend'armerie, is of fifteenth-century work, built with brick, and stone facings. It is set back in a court-yard, forming three sides of a quadrangle, with mullioned windows, projecting angle turrets, and rich dormers. The screen wall fronting the street is ornamented with two very pretty turrets or watch towers, one octangular, the other circular, with high-pitched conical roofs.

The other edifice is now the Hôtel de Ville. Originally it was built for the private residence of Jacques Cœur, the goldsmith, who occupied, in France, in the fifteenth century, the post which George Heriot filled in Scotland at the end of the sixteenth. It is of the fifteenth century architecture, but much more elaborate and ornamental than the specimen just described. The front to the street has a fine portal and tower. The apartments are carried round an inner quadrangle, in which variety and contrast appear to have been the great objects aimed at in the design. The façades are broken by small towers, each of which differs from its neighbours in height, diameter, and form. The façades differ from each other in height, fenestration, and arrangement. On the whole, with some rather bizarre conceits, the effect is fine. The masonry is beautifully and carefully executed: the profusion of carving, balustrades, and canopies gives a rich crispness to the plainer parts: the detail is well studied and carried out. The chapel is richly groined, but its effect is destroyed by the insertion of a modern floor, dividing it into two stories. This and the building previously alluded to have much in common with several of the Scotch castles delineated in Mr. Billings's beautiful work. The close connection between Scotland and France in the fourteenth, fifteenth, and sixteenth centuries led to the nearer approximation of the domestic architecture of the two countries than with that of England.

The cathedral of St. Etienne is a massive and noble building of the early thirteenth century architecture. In its arrangements and plan it presents several striking peculiarities. There are no transepts; the perspective extending in an unbroken line from west to east, the choir being merely a compartment railed off in the centre aisle. In breadth there are five aisles, besides projecting chapels on both sides. The centre aisle is 117 feet high, the two inner aisles 65 feet, with triforium and clerestory to each. The east end is apsidal, the aisles continued round. The arch piers are circular on plan, with attached slender shafts. The west window is fine early geometrical in six lights, with large rose in the head. There is a considerable quantity of fine original stained glass in the windows. The great height of the centre aisle, the gradation exhibited by the double clerestory, and the long drawn perspective of the four ranges of piers, impart a peculiar character of grandeur to this edifice. Externally, the west front is somewhat complicated, but very rich in early carving. There are five portals, with bas-reliefs in the tympana, and six receding ranges of statues and canopies in each.

The west front is flanked by two lofty towers, with buttresses of great projection. The boldness of the projections and the deep shadow of the recesses of the portals fully maintain the grand and noble character of the interior.

There is a lofty and well-lighted crypt underneath the choir, accessible from the church, in which are some good monuments. The piers are clustered, with foliaged capitals.

Blois.—The principal antiquarian attraction of the city of Blois is its magnificent chateau, the residence for centuries of the French monarchs and portions of their family. Huge and grotesque, it looms over the town from the elevated rock on which it stands, like a stranded wreck from the stormy days of ages gone by. Its architecture exhibits samples of every period of mediæval construction. The lower portions have the grim aspect of the old Norman castle; whilst additions have been made to it from time to time in all styles down to the seventeenth century. Internally the buildings surround a large court. The east side, on which is the entrance, is occupied by brick buildings with stone facings, broken by towers with high conical roofs. These were erected by Louis XII. in the fifteenth century, and resemble the style of the buildings in Bourges, already alluded to. The north side are stone buildings erected by Francis I. The design consists of heavy enriched cornices and dormers, with Italian pilasters, strings, and carved mouldings. There is a very elaborate octagonal open tower or lantern, inclosing a stone stair winding round a newel. This projects in the middle of the façade, carrying statuary figures in niches in the piers, and heavy elaborately carved balustrade.

The general effect is rich, but heavy, and somewhat clumsy. As far as my memory can be relied on, there is considerable resemblance in character to the grotesque building in Stirling Castle, erected by James I. of Scotland. The street architecture does not differ materially from that of Bourges, the same general prevalence of timber framing interspersed with a few stone mansions of greater pretension. One of the latter, the Hôtel d'Alluye, of the date of the middle of the sixteenth century, has an arcaded gallery or cloister round an inner court.

The cathedral is small, with an Italian tower at the north-west angle. This was designed by Mansard in the latter part of the seventeenth century, and is a pleasing composition, having two ranges of Corinthian columns with arches between. The summit is crowned with a lantern and cupola. The body of the church is fourteenth century, but much altered.

St. Nicholas's is a cross church, the transepts without aisles, the intersection domed over with ribs and arches, probably an open lantern originally; the east end apsidal, with a lady chapel extending eastward, rather a rare instance of the kind. This church is for the most part of twelfth-century work. The building has been much dilapidated, but is now undergoing restoration. The centre tower has a very high-pitched hipped roof covered with small slates, out of which rises an octagonal turret crowned with lofty octagonal slender spire, the whole covered also with very small slates. The design is simple, but on the whole effective.

The Hôtel Dieu, fronting the river, has recently been restored. It is a large and commodious building forming a centre and wings in the plain Italian style, with very lofty roof and heavy dormers.* J. A. Picton.

EFFECT OF SMOKE IN THE DESTRUCTION OF ARCHITECTURE.

On reading the article under the above heading in a recent number (p. 59), I certainly entertain an opinion somewhat different from the statements therein mentioned; and feel some hesitation in commenting upon observations made at "a civil banquet," which, in all probability, were not made with the most distant idea of publication. But as you have considered the rev. gentleman's remarks worthy of insertion in your journal, I beg to offer, with every sentiment of respect to the Rev. Wm. Vernon Harcourt, a few facts bearing upon the subject.

I am aware of the generally received opinion that an atmosphere charged with smoke and gaseous exhalation, arising from imperfect combustion, facilitates the decay of stone; and in large cities or manufacturing towns, if the buildings exhibit a deplorable state of decay, the coal which is used for fuel is said to be the chief cause of the mischief. There may be a small amount of truth in the idea; but if we investigate a few facts it will be evident that such cause and effect are very considerably overrated. In most cases it is much easier to propose a theory than to prove an assertion, and he who can suggest the most ingenious speculation upon a subject that is much required will be sure to meet with numerous advocates.

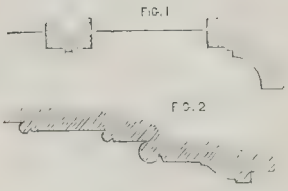
In York, in London, and in other cities, as well as in localities far removed from smoky towns, we find examples of beautiful buildings in various stages of decay: some, although erected many centuries, are still nearly perfect: others of recent date, are fast moudering away, as if climate or situation and local circumstances had no influence whatever over their decay or preservation. It is lamentably true, that not only the exterior masonry of the Minster, but of many other churches in York, is generally in an extremely decomposed state: in some instances, all architectural detail is obliterated; but the failure must not be attributed to smoke, or other impurities of the atmosphere: the chief cause is owing to stone of a very inferior quality having been used in their construction. The rev. gentleman need not have gone ont of the City of York to find an example of a building, many centuries old, and yet at this time in a very fair state of preservation. It is probably 400 years since St. Margaret's church was erected: the east front is quite exposed, and yet in good condition: the porch has been re-constructed: it is of Norman date, highly enriched, and is at this time in tolerably fair condition. St. Denis's church has also a Norman doorway, ornamented with zigzag, &c.: the columns are gone, but the other parts which remain are in good condition for their age. But the most remarkable instance of the durability of stone in the City of York, is the Roman Multangular Tower, built with very small squarely-dressed stones, thereby presenting numerous sharp angles, which have been exposed to all the usual atmospheric influences probably a thousand years longer than most of the churches in the neighbourhood: nevertheless, it is much less decayed than St. Mary's Abbey, which is within a hundred yards of it. All these buildings are constructed with Magnesian limestone, no doubt from some of the quarries in the vicinity; but certainly of very different qualities as far as regards their duration, although mineralogically and chemically apparently the same. Mr. Vernon Harcourt has mentioned the condition of the masonry and carving of his parish church, distant but seven miles from York, as an evidence of the cause of decay in city architecture. He states that it is of the same stone as parts of York Minster, which have perished, whereas in his country church (Bolton Percy) the tracery and carvings are as sharp and fresh as when it was built, 400 years ago. With all due deference to that gentleman's opinion of its being the same kind of stone, I have very strong doubts upon that subject. Two blocks of stone may appear to a general observer to be precisely similar substances: their component parts may chemically and mineralogically be exactly the same: but it is well known that the same elements, uniting in the same proportions, do not necessarily generate the same body; and also that two mineral substances from the same neighbourhood may so precisely resemble each other in appearance, as to deceive the most experienced eye, and yet, on subjecting them to accurate tests, they may prove to be essentially different; and hence, if exposed to the same atmospheric influences, the one might decompose or disintegrate centuries before the other.

It often occurs that different beds in the same quarry possess characters essentially different: some will decay much sooner than others, when exposed to the weather. The uppermost end of long blocks of Portland stone is invariably much more durable than the end which was situated downwards in the quarry. In fact, if the blocks are 8 or 9 feet long, however well the upper end may stand the weather, the lower portion of the same block is almost sure to decay very rapidly, if much exposed. Here, then, is an instance of distinct qualities in different parts of one block of stone.

* To be continued.

HOUSE FRONT AT PERUGIA.







We will now return to the smoke, and examine two of the buildings in that city where soot and imperfect combustion abound more than anywhere else in the whole world. St. Paul's Cathedral, London, was finished about 150 years since. Nobody will doubt its being subjected to all the impurities of an atmosphere ully saturated with smoke; yet the building is generally in good condition: the carvings of fruit, flowers, and other ornaments, are throughout nearly as perfect as when first executed, more especially those on the north and east fronts, although they are all very much blackened. The Ionic entrance to Hyde-park, adjoining Apsley House, has been built about twenty-seven years, with a material (Portland stone) which many persons might designate the same as that of St. Paul's: it is situated in a much purer atmosphere, and one that is certainly less contaminated with smoke than that which envelopes our metropolitan cathedral; nevertheless, the park entrance is constructed with stone of so perishable a nature that it is now in the most deplorable state of decay, although considerably removed from the influence of city smoke.

Many other instances might be adduced in the universities of Oxford and Cambridge; in the cities of Edinburgh and Bristol; also in the "*land of tall chimneys*" surrounding busy Manchester: in all these districts you may find edifices of various dates, in all stages of decay, entirely independent of smoke.

C. H. SMITH.

JAMAICA COPPER.—Private letters from Jamaica, it is reported, give encouraging accounts of the prospects of copper mining in that island.

HOUSE FRONT AT PERUGIA.

OF all the once-famed mediæval republics of Central Italy, none perhaps bear stronger traces of their ancient grandeur than the picturesque old tower of Perugia. The subject of our illustration is from the Piazza del Duomo, a view of which is given in Gally Knight's "Ecclesiastical Architecture of Italy." On one side of this Piazza is the never completed cathedral, opposite to which is the town-hall, one of the finest Gothic buildings in Italy. In the centre of the pavement is an elegant and richly sculptured fountain, of the thirteenth century, the work of John, of Pisa; and at one end of the *place* is the curious house, represented in the engraving. This is built entirely of yellow and red marble. Of the latter material are the cornice, window tracery, and colonnettes, the doorway, the steps, and the flat strips at the ground story. The construction of the window tracery is extremely characteristic: every circle is a separate ring of marble. The very classic taste in which the door architrave (Fig. 2) is modelled, and the peculiar squareness of the window mouldings (Fig. 1), are also worthy of notice. Fig. 3 shows the string course.

ALFRED BAILEY.

ARCHITECTURAL MEETINGS, LONDON.—At the Institute of British Architects on the 7th of February, a Paper will be read "On the Principle which governs the Proportion and Curves of the Parthenon of Athens; with a few Observations on the Application of Æsthetic Science to Architecture generally," by Mr. D. R. Hay. At the Architectural Association, on Friday, February 11th, a Paper will be read by Mr. E. L. Garbett, on "Our choice between Three Possible Modes of Right Architecture."

THE TOWER ARMORIES.

ABSENCE from town prevented my seeing and replying to the remarks in your journal of the 8th of January, on "Our National Armoury (Armory) at the Tower," so early as I could have wished; but I shall always very gladly lend my humble aid for the detection of imposture and the exposure of impostors. That there are many forgeries foisted on the public—"imitations," your correspondent blandly terms them—is admitted on all hands; and that the forgery-shops of Paris and Vienna are especially prolific, is also matter of notoriety. Your correspondent distinguishes several of these continental falsifiers, but discovers that they manufacture their wares "not for fraud" (oh no!) but for purposes of pageantry; dubbing this practitioner "a clever foreign artist," another, "his ingenious rival," and so on: in short, your correspondent's sympathies are all for the foreign forgers, and all his abuse for English "authorities." For my own part (and since my name has been dragged into the discussion, you must be content to hear my opinion), I would have revived, for the benefit of all foreign forgers and all English agents of foreign forgers, a good old English practice, whose usefulness would soon be manifest: I would have the ears of such rascals nailed to the pillory by the common hangman. So much for the general question; now for particular charges.

Your correspondent intimates that a so-called "Winged Burgonet of the sixteenth century," lately added to the Tower collection, is an "imitation;" and he asks if a letter has been written to the "respectable manufacturer" (!!!) and an answer received "from Vienna," touching its pedigree. Further on in the same paragraph,

however, your correspondent throws a doubt on his own insinuendo he speaks of the helmet "*if* actually spurious." I have made inquiries about this Burgonet, and find that it was purchased for the Tower collection from Mr. Falcke, of Oxford-street, and Mr. Falcke states that he procured it at Florence. As to the "curator of the national collection" applying to *any* foreign armour-forger for evidence against his own imposture, the infantine simplicity of such an idea is truly refreshing; but the notion of that gentleman writing to Vienna for particulars of a suspicious helmet bought at Florence, has a wildness of eccentricity peculiarly its own. More reasonable seems the question: if your correspondent doubted the helmet being "actually spurious," why did not *he*, who seems to have such a delightful familiarity with all the leading foreign forgery-shops, write to ascertain the fact before he ventured on so grave an accusation as that contained in his letter? As he justly observes, his "doubt could have been dispelled in a week by a letter from Vienna." A word to the high-minded "Herr Obermeyer," or a breath to the ingenious "Grangier of Paris," would have made all clear and comfortable. As to the spuriousness or genuineness of the Burgonet in question, that is a point to be settled between your correspondent and Mr. Falcke. I may be permitted, however, to say that the helmet (which I never saw till after it was purchased for the Tower) has nothing in common with "the fine suits worn in *La Juive*," as your correspondent intimates: it is a most skilful example of *repoussé* work, and carefully finished throughout. If there is any point of suspicious work about it, let your correspondent point it out. The idea of this writer, that the Tower authorities should purchase wholesale the fine suits from *La Juive*, is extremely brilliant, but, I fear, not practicable. *La Juive*, indeed! they have enough to do in the Tower to look after the *Jews* that present themselves, without extending their practice to the *Jewesses*.

Your anonymous friend goes on to say:—"Where an article is only presumed to be as early as the sixteenth century, it might easily have an authenticated pedigree." Not so easy as he imagines. For instance, the other day there was purchased for the Tower armories an elaborately embossed helmet of this very century—the one exhibited last year at a conversazione at Lord Londesborough's; but even this, though an article of much greater mark than the "Winged Burgonet," was altogether without "an authenticated pedigree." Perhaps your correspondent may be able to furnish us with one?

"I have the authority of an excellent antiquary," continues your correspondent, "for stating that he himself publicly sold an Anelace as the manufacture of that celebrated impostor San Quirico [what! another forgery acquaintance!], and which has, notwithstanding its avowed character, been recently added to the Tower collection, and paraded as one of its rarest curiosities." The honour of this transaction I leave to be adjusted by your correspondent, the "excellent antiquary," and Mister San Quirico. Meantime I take leave to report that the charge of "parading" at the Tower is so far from true, that neither the storekeeper there, nor the armory-keeper, even know to what weapon your anonymous friend alludes.

Charitably admitting the readiness of the Tower "authorities" to purchase forgeries, your correspondent laments that all the good things go abroad, or fall into private hands.

"A helmet of the twelfth century has gone to Warwick Castle." This helmet is said to have been found at Eynsford Castle, in Kent, "about six years ago;" but I have the authority of the occupant of Eynsford Castle, who has lived there *upwards of a quarter of a century*, for stating that no such thing has been found there during his time. Perhaps your informant will ascertain for us whence this article really did come.

"A vizored Basinet, with camail appendant, will shortly be on its road to Paris." This, though curious, is a made-up affair, the Basinet being of one period and the vizor of another; neither, I believe, of the time of Edward III. as named by your correspondent.

Further, your correspondent reproaches the Tower authorities for "not blushing to exhibit to the public a patched-up figure in Indian mail as a Norman crusader." By authority of the Board of Ordnance two descriptions of the armories are published in the Tower, one for the use of foreigners, the other in the vernacular. At page 74 of the English book we read: "The centre (of the platform) is occupied by an equestrian figure which has long borne the name of 'The Norman Crusader.' It is, however, an Asiatic suit," &c. &c.

At page 26 of the French guide-book we have—"Dans ces groupes se trouve la figure équestre qu'on montrait autrefois pour celle d'un chef dans l'armée des croisées. L'armure est Asiatique."

Whose province it is "to blush" I leave your readers to determine.

To the accusation of your correspondent, that the authorities wilfully mislead the public by affixing to various suits names of persons to whom they never belonged, I beg to say that the guide-books above mentioned are most explicit on this point also. It is hardly worth while quoting them.

Besides the charges, general and particular, already noticed, there is one which we are left to *infer* from your correspondent's paper, namely, that the Tower authorities neglect to make proper inquiries into the authenticity of the articles they purchase. Many pages of your journal might be filled with proofs of the contrary; but let one or two instances suffice. A short time ago a helmet was brought to the Tower by Mr. Grimshaw, dealer in antiquities, and stated by him in very circumstantial detail to have been procured from a church in Berkshire. Reference was immediately made to various topographical works, but neither in the views nor the descriptions of the church was there the least appearance of the relic in question. I then (at my own cost, by-the-bye) went down into Berkshire, carefully examined the church, and catechised the "oldest inhabitants." As the result of my labours, I found that the whole tale was a fabrication from beginning to end.

Here is another instance of similar *supineness*. A few months back a Basinet was purchased for the Tower from Mr. Pratt, of Bond-street, which was said to have been procured from Fersfield Church, in Norfolk—the identical headpiece worn by Sir Robert Du Bois, whose tomb is in that church. Of course the high standing of Mr. Pratt precluded the possibility of a doubt as to the exactness of all these facts: it was therefore simply in order to make as complete as possible the official document which becomes the historical record of the transaction, that search was made for some local account of the relic. Remembering that Blomefield, the historian of Norfolk, was rector of this very church of Fersfield, and that he had given a most particular description of its contents, his pages were first consulted—not a word of the Basinet. Next I turned to Stothard's "Monuments," where he has figured the effigy of Du Bois; then to his "Memoirs," where he particularly recounts the adventures and discoveries of his archæological tour—not a word of the Basinet. I then, at great labour, examined the various M.S. collections relating to Norfolk in the British Museum—Powell, Suckling, Le Neve, &c.; still not a trace of the Basinet. Next I wrote to my friend, the secretary of the Norfolk Archæological Society, requesting the help of the Norfolk antiquaries—no news of the Basinet. Lastly, I received the following letter, addressed to the secretary of the Norfolk society, by the present incumbent of Fersfield:—

"Fersfield Rectory, August 23, 1852.

"Sir,—In reply to your letter of the 13th inst. I have to state that, as far as I can discover, no one in this parish ever remembers to have seen any armour at all in the church.

"The tomb of Sir Robert du Bois has been recently restored by the Duke of Norfolk: it bears the date of 1311: there is not the slightest vestige of any ironwork on which the Basinet might have been supported. There is a full description of the tomb in "Blomefield's History of Norfolk," vol. i. page 69. No mention is made of any armour.

"Yours, obediently,

"H. Harrod, esq. "George W. Darby."

I trust, Sir, that the above instances will be enough to show your readers that there is not quite so much drowsiness at the Tower as some of them might have been led to imagine.

I must again repeat that, in so far as your correspondent's exertions are directed to the exposure of fraud, nothing can be more praiseworthy; let him go on and prosper; let all collectors give him a helping hand; let all buyers positively reject every article that is brought before them without an "authenticated pedigree." This will soon put a stop to the consignment of "Herr Obermeyer's" forgeries to the English market. As to the Tower, the process is perfectly simple. The Board of Ordnance have luckily an officer especially appointed to look after delinquents and to bring them to justice. Let the Ordnance solicitor be instructed to proceed at once against all vendors of spurious articles; and let this plan *be also retrospective*. What! shall the poor wretch who raises sixpence by a forgery in block tin be transported for life, while the fellow who raises a hundred guineas by a forgery in iron is allowed to walk off unpunished?

Your correspondent will, of course, find it necessary to answer, with exactness, the objections raised in this letter against various points of his communication. He must not slur over the questions at issue and fly off to new matter of a vague and general nature. He has plenty of facts before him; let him clear up those before he starts any new topic; and let him give us his real name,—truth requires no ambush. It is scarcely worth one's while to contend with champions who fight from behind hedges. One might find oneself engaged in a bootless discussion with the proprietor of some rival curiosity shop, or some disappointed importer of Lutetian relics, or (who knows?) even with the redoubtable Herr Obermeyer himself.

Office of Ordnance. J. Hewitt.

EVIDENCE IN "INDIAN ART" OF A KNOWLEDGE, AT SOME TIME, OF "THE SOURCE," "THE LAWS," AND "THE RELATIONS" OF PARTICULAR CURVED FORMS.

The discovery of the fact that the "cardioid" may be projected from curved sections of cones, intersected with a "sphere," has opened out a most extensive and easily-comprehended field for observation, and directed to simple rules for obtaining and applying a host of results—true curves, in great variety.

While from an intersection of a sphere with a cone of any apex angle, the exact cardioid of mathematicians* may always be projected from each line of such intersection, there are also several other lines varying much in form, which may be as readily obtained.

The cardioid, *linked* with one particular example of a "flame-form" (flamoid?) accompanies this. This flame-line may be considered to be an intermediate shape of this character of figure. Although a simple continuous line, the lower part is very nearly, if not identically, a semicircle.

From cones of a less apex angle, the flame-line will be more "prolate," and with any greater apex angle, more "oblate:" the variations of this character range from the figure of the example, between a vertical right line and a horizontal one; the broadest part of the flame being always at one-fourth of the height, whatever the height may be.

This particular cardioid can be generated by motion in at least four distinctly different ways, by which its close relation to any different characters of curves is indicated.

The motion to which I shall now refer is the reciprocal of the "common trammel" motion. The knowledge of the latter is possibly most ancient, for I have never been able to find any date for its discovery.

All descriptions of this motion are exact copies of each other, which, however, gives a very limited notion of the means which may be used.

* I had discovered several other "cardioids" by the motions of my instruments, but the cone can most clearly, and with facility, be made to exhibit thousands of varieties of cardioids, with easy rules for obtaining and applying them,—of which there is no evidence that mathematicians, architects, artists, or artizans have at present any knowledge.

The knowledge that the reciprocal of this motion will produce a circle, or a part of the motion an arc of a circle, may possibly and probably be as ancient, but hitherto I have never met with any antique evidence that this cardioid in any way, or in all its varieties, can be generated by the same motion, or was at all known or applied in art by the ancients.

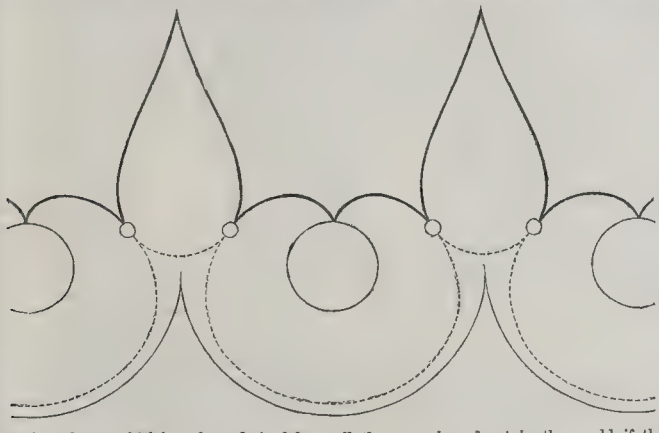
In the "Supplementary Report," "Reports of Juries, Exhibition, 1851," examples of "Indian art" are given, which contain a variety of evidence of a geometrical source for the peculiarity of form introduced.

I will now only refer to a part of the forms in the example from the "ivory inlays" of the "gun-stocks." (Plate 2, figs. 1 and 3, and 2 and 4.)

Figs. 2 and 4 give evidence of a knowledge of the "cuspidated cardioid," and of the "circle" generated by the same motion in its correct position.

Figs. 1 and 3 give evidence of the same, and also of the relation of the cuspidated cardioid with the cuspidated flame-line, by these being linked together by the small circles. This gives further evidence that the relations of both to a cone and to a particular apex-angled cone, must have been ascertained by the originators, whoever they were, of these peculiarities of form, thus composed, and now found in "Indian art."

If you will have the goodness to transfer into your pages so much of this "ivory inlay" of the Indian "gun-stock," indicated by the accompanying tracing, and also introduce, as large as may be convenient, a correct reduction



from these forms, which have been derived from like carved intersections of a cone, then possibly some of your readers may agree with me in this opinion. The sphere for the intersection from which the cardioid was projected being double the diameter of the sphere which gave the curved intersection, from which the flame-line was derived; a cardioid projected from this last intersection would be just half the scale of the example given; the apex angle of the cone in both cases being the same.

The cardioids, as given at the two ends of this composition with the two circles, were submitted, in 1850, to the School of Design as elements of form to be introduced in art.

Here the circle indicates a knowledge of another motion, by which this particular cardioid is produced. Any point in the course of the larger circle, while it is rolling on the smaller circle, will describe that figure.

Any variety in size of a cardioid may be determined from the cones of the same apex angle, by varying the diameter of the sphere of intersection.

Whether the forms on the "gun-stock" are more accurate than the lithograph I have no means of knowing; but I think, had the "source" and "laws" of these characters of lines been known, the artist would have given a closer approximation to truth in the representations.

It is, I submit, but an excuse for "*ill-drawn forms*," at any time to represent "Nature" imperfect,—marred by blight, or in any way crippled or broken. Nature looks best when perfect.

Composing designs with true geometrical curved forms to imitate Nature is suggested as more likely to give truth and distinctness of character than by any attempt to conventionalise Nature without a knowledge of true geometrical forms.

But before compositions can be thus made geometrically, the true sources, the laws, variations, and limits of character of geometrical curves, must be known by students of design to a much greater extent than at present.

In the examples of Indian art given in the report referred to, there is a multitude of evidence of a vast amount of knowledge of geometrical curved lines, by the first introducers of such a variety of form in art. But from all the examples of art in the world, if they could be procured, the geometrical sources of variety could never be discovered. That is only to be done by working in the fields or mines of geometry; and, when forms are thus ascertained, comparing them with the best corresponding examples found in art.

In this way the sources of the "Greek Volute," "Waves," "Cymatium," "Waterline," "Honeysuckles," the "Conchoids," the "Ellipse," the "Hyperbola," the "Parabola," &c. &c. and now this evidence of the geometrical sources of Indian art have been determined.

Without an extensive knowledge (which they most easily may have) of these vast contents of the geometrical treasure-house of true, beautiful, delicate, and characteristic forms, it is most respectfully submitted that neither architects nor artists have the required means of judging or reasoning on the subject; nor artizans the knowledge of the true rules to guide the mind, eye, and hand in the application.

I would suffer the confirmed in prejudice, who are at present the leaders in every effort to advance art, to go on their way undisturbed, and wait the results of another fifteen years, although at so great a cost, were it not thought, that it must be evident when named, that very much of the large amount expended in purchasing examples* of art, is taken from the means of paying artists and artizans for producing works at home on true principles, if they had, at comparatively a most trifling cost, the requisite knowledge placed before them and were encouraged to do as those who have gone before them did.

Where, for example, did the ancient Greeks go to obtain objects of art?

Did Pythagoras take cargoes of objects of art from "Phœnicia, Egypt, or Chaldæa," to Greece?

No! he took the "*Key* for finding all harmonious proportions in painting, sculpture, architecture, music," &c.; and the Greeks, by simply, but no doubt constantly and earnestly, opening and searching, determined facts, and then made applications in art, which have astonished the world even to the present day.

Go and do likewise! Those who think that they can, by free hand-drawing, without a knowledge of the laws, obtain true gradations of lines or proportions, may try to draw the varieties between the cardioid with its cusp turned inwards, and having no point of contrary flexure, and the flame-form with its outward cast, and with six or eight distinct points of change in curvature,—whether the flame-form be "prolate" or "oblate," to say nothing of more than twenty other gradations between the different lines that may be obtained from one curve and a cone. Then comparing their productions with the facts, probably they will be surprised.

JOSEPH JOPLING.

* Probably there is now in an inaccessible position, and therefore useless, a large store of objects of art which have been obtained at a large cost. If that had been expended in extending practical geometrical knowledge, it would have neither been lost nor obscured. An impulse would have been given to art and construction.

PROVINCIAL NEWS.

Harwich.—The estimated cost of the construction of the proposed docks, pier, and other works here, including the purchase of property and contingencies, is 100,000*l.* It is proposed to construct these docks on a large tract of waste or mud lands, between Harwich and Ray Island.

Colchester.—The opening of the new British School-rooms, erected by Dissenters of this town, took place on Friday in last week. The building, which is reared on the site of the old school-rooms, in Priory-street, is of red brick, and approximates to the Elizabethan style of architecture. The boys' room, on the ground-floor, is 44 feet in length, 26 feet in width, and 18 feet in height, with class-rooms, and will accommodate 200 pupils. The girls' apartment, above, is of same size, with three class-rooms, having moveable partitions. Two smaller rooms, with galleries, are for the accommodation of 100 infants. Mr. Barnes, of Ipswich, was the architect, and Messrs. Franklin and Start, of Colchester, were the builders.

Heyford.—Kirtlington church, in the Bicester deanery, was reopened on 21st ult. after undergoing considerable repairs. The tower has been rebuilt by Mr. Castle, of Oxford: it is placed between the nave and the chancel, and consists of three stories, in the upper one of which are the bell-chamber windows, round-headed, with three pilasters in the splays on either side: the effect, though unusual, is said to be in harmony with the Norman arches of the interior of the tower. The square pews have all been replaced by low uniform seating of stained deal. The west window has been filled with stained glass. The font is of sculptured Caen stone. Two galleries have disappeared,—one from the west end, and another from the north aisle. Texts from Scripture, in red and black characters of old English type, are placed on metallic scrolls about the walls of the church. The reading-desk is so contrived that the officiating clergyman, in praying, turns to the north, and has his back to many of the people. The parish-clerk, says a contemporary, in noticing the reopening of this church, sits "behind the south door, where he is distant 30 feet or more from the reading-desk, and nearly twice as far from the communion-table, a position where the laws of sound must render it difficult to him to keep proper time in making the responses, and where all consultation with the minister, during singing or any other part of the service, is out of the question." The organ is now at the west end of the north aisle.

Elsecar.—The *Stafford Advertiser* states that on two or three recent occasions the inmates of a house at Elsecar have been alarmed by an explosive crack, which went off in a flame of fire. The cause of this was traced to have proceeded from an escape of fire-damp, which came up the grate under the house fire-place. It is supposed to have found its way from one of the coal mines contiguous to the house.

Liverpool.—A partial opening of the new Corn Exchange here took place on Tuesday week. The arches which gave way recently have been rebuilt upon a different plan. The portion now in occupation is less than one-half of the entire site, which will extend forward to Brunswick-street. The elevation to Brunswick-street will be of stone, having a frontage of 37 yards, and will form one of the largest and loftiest façades in the town. The front portion will be occupied

as ranges of commercial offices, with a large central vestibule and entrance into the Corn Exchange. The Exchange is divided into three avenues, lighted from above, with an iron roof and wood floor.

Lower Tranmere.—According to the *Liverpool Journal*, the Wesleyan Methodist Chapel, in Queen-street, Lower Tranmere, has been enlarged by the front being brought level with the road. Three new galleries and a vestry-room have been added, and new pews constructed throughout the chapel, which has now accommodation for 400 persons. The building has been redecorated, the whole by Mr. Hogarth, of Tranmere.

Preston.—The area of the Corn Exchange is about to be covered with a glass roof, on the ridge and furrow principle, to consist of twelve bays of about 10 feet 6 inches each. The glass will be strong rough plate, of which about 6,500 square feet will be required, in sheets 5 feet 6 inches by 14 inches. The height from the floor to the top of the roof will be about 37 feet. The enclosed area, measuring from the inner walls on the lower story, will be about 132 feet long by an average width of 64 feet. The estimated cost was 1,200*l.* The works are being executed from the designs and under the superintendence of Mr. J. P. Park, of the firm of Park, Son, and Garlick.

Bolton.—A Free Public Library and Museum have now been secured here. The library already contains 2,878 volumes, and 2,000 more have been ordered. At a working-class meeting, it was recently resolved to use exertions to obtain further subscriptions in aid of the new institution.

Otley.—In the course of the last two years a number of houses have been erected here, and improvements made. Amongst these may be noticed the bank and buildings connected with it in Kirkgate; a number of houses at the top of Westgate; and a Catholic church and priest's house in Bridge-street. The parish church has also been improved and beautified within and without.

Leeds.—In excavating for the sewerage here, a valuable bed of ironstone has been discovered in Kirkgate, one of the principal streets of the town. What it is proposed to do with it, or whether any use can be made of the discovery, we have not ascertained.

Gateshead.—The Belgian plan of having locked letter-boxes in the streets, according to the *Gateshead Observer*, is to be tried in this town,—a plan not yet tried in Britain, though lately adopted, if we mistake not, at St. Heliers, in Jersey.

Alderley.—The consecration of the church of St. Philip, recently erected at Alderley, took place on Wednesday, the 19th ult. The district in which this church is erected forms part of the parish of Wilmslow, in the township of Chorley. The ground on which the church is erected, at a short distance from the Alderley Railway Station, was given by the late Sir Thomas de Trafford, and is about an acre in extent. The church occupies 5,625 superficial square yards, the remainder of the ground being inclosed by railings, and set apart for a churchyard or area. It is not intended, however, to use this ground as a burial-place. The church is in the Flowing Middle Pointed style. The plan consists of a nave, chancel, north aisle, organ-chamber to north of chancel, sacristy or revestry on north-east of same, and porch in south-side of nave. The nave is four bays in length, and is divided from north aisle by an arcade, having circular columns, with moulded caps and bases and splayed arches; and the wood moulding to the arches finishes on corbel heads representing the four Evangelists and the patron saint. The nave is, constructionally, separated from the chancel by a lofty arch, the wood mould to which, on the western side, is supported on heads. The chancel is further separated from nave by a light open screen, with doors. The east window, which is of four bays, surmounted with flamboyant tracery, is filled with stained glass. The Crucifixion, Entombment, Resurrection, and Ascension of our Lord, are at the lower parts of each bay, and are surmounted with lofty gabled canopies, which blend with coloured geometrical forms in the grounds above. The side chancel window is also filled with stained glass. Warrington, of London, was the artist. The seats are low and open, and all face the east. Externally, the church is of simple character and detail: it has a bell-turret at the west end, surmounted with a gilt metal cross, and supported on a projecting buttress. The church is built from the designs, and erected under the superintendance, of Mr. Crowther, of Manchester, architect. The total expense of erecting the church and endowing it is about 3,500*l.* The organ, tesselated pavement, stained glass windows, &c. were gifts.

Barnard Castle.—The new water-works and main drainage of this town are now completed. They have been carried out by the local Board of Health, from whose report it appears that, as recommended by the General Board, they have rejected the water of the Tees, which flows at the foot of the town, and have sought a supply of purer and softer water six miles off, where they have found an unfailing source, not exceeding three degrees of hardness, clear and sparkling. This water is conveyed by an eduction pipe of earthenware of 9 inches in diameter, to an eminence about a mile from the town, where it is discharged into a covered reservoir, and thence brought in iron pipes of 7 inches internal diameter. The mains and sub-mains of the sewerage works are of tubular impermeable earthenware, of diameters varying from 6 to 15 inches, jointed with cement and imbedded in puddle. The total cost for a cottage tenement for the whole of the works of water service, drainage, and water-closet, in substitution of the privy and cesspool, is 2¼d. per week; but the rates have been so arranged, that of this 2¼d. per week only about 1¼d. will be paid by the tenant. The cost of draining the town with brick sewers upon the old system would not have been less, it is said, than 4,000*l.* on the lowest estimate. The cost of the application of the Act was 116*l.*; whereas the cost of an Act of Parliament would not have been less than 2,000*l.* Already the inhabitants have availed themselves of the water supply almost universally; but the Local Board have still to complete the connection of the house drains with the public sewers in many of the houses; to abolish numerous privies and cesspools; to provide convenient and safe receptacles for house-refuse; and to devise and carry into effect the means of its periodical and quick removal, as well as for its profitable application to agricultural purposes. The Local Board, however, consider that they have now laid the foundation for a thorough sanitary improvement of the town. The population of Barnard Castle is little more than 5,000.

Arbroath.—Upwards of fifty of the merchants in this place who have plate glass in the windows of their shops, have formed a society for mutually defraying the damage sustained by accident. Arbroath, according to the local *Guide*, can now boast of having nearly eighty shops fitted up with plate-glass fronts.

RAILWAY MATTERS.

Damage by Rain.—The damage done to the London and North-Western line by the rains, it is said, will cost nearly a million of money. One of the directors of the South-Western Company has stated that an order has been signed by the board for the reparation of damages to an extent of nearly 1,000*l.* a mile on their line.

Landslip on Scottish Central.—A landslip has taken place on this railway, near a station called Forteviot, within a few miles of Perth. The river Earn here passes by a conduit under the line, and from the melting of snow on the adjacent mountains, the flood came down in such force and pressure against the railway embankment that about 40 yards of it gave way, leaving a complete gap in the line.

Cost of South Wales Mineral Line.—The expense estimated by Mr. Brunel for constructing the South Wales Mineral line from the New Docks at Britonferry to Glyncorrwg, the Avon, Maesteg, and Llynvi Valley, with power to arrange with the South Wales and other companies, is 130,000*l.*

Railway Amalgamation in France and England.—A proposal to amalgamate the Centre, Paris and Lyons, and Lyons to Mediterranean lines of France, has, according to the *Moniteur*, been refused by the emperor. In allusion to this circumstance *Herapath* says—"Whatever we on this side of the water may say of the French emperor, he certainly possesses sound notions of the useful and beneficial for his country, and has courage to carry them out. He is neither to be blinded nor cajoled into measures which he perceives would be inimical to the interests of his subjects. Would that we could say the same of our English Government. 'Regarding the interests of commerce and the public,' says the *Moniteur*, 'he would not authorize so great a concentration of the means of transport in the hands of a single company.' This is precisely the doctrine we have always held in our English railways. We have always been afraid of putting into the hands of a body, practically of irresponsible men (for such they are when acting in bodies), too much power. We would prefer entrusting it in the hands of a single individual to entrusting it in the hands of a board, however honourable the members of it may be in their individual capacity. All experience has shown that consideration and feeling, and, in too many instances, integrity, have not a locality in boards. They will do things collectively which either of the members singly would scorn and scout. Then, of course, one should be cautious how we trust boards with power, and most certainly how power is increased in their hands."

Chairs.—Mr. Robert Griffiths, of Newport, Kentucky, has patented an improved machine for making wrought-iron chairs, consisting of a combination of arrangements rendering the machine capable of adjustment for cutting and turning the clips of varied forms and sizes, to fit the several patterns of rails in use.

Peril of the American President, and Death of his Son.—By the breaking of an axle on a train in which General Pearce and his wife and only son were travelling from Boston to Concord, New Hampshire, on the 7th ult. the train was thrown off the line, and precipitated down an embankment, where it was overturned, when the son of General Pearce was killed by his side, a rock fracturing his skull, and dashing out his brains. Shocking as such an accident is, the public safety in the States' railways will probably for the future be still more carefully looked to in consequence than heretofore.

THE BOARD OF HEALTH AND PLANS OF TOWNS.

It is stated in the *Builder* of Saturday last, "that Mr. R. Stephenson having expressed a conviction that the detailed plans of towns required by the Central Board of Health prior to giving their sanction to the improvements proposed from time to time by Local Boards, involve a very unnecessary expenditure of money, the Central Board had eventually modified their requirements in this respect." Will you allow me to state that this is an error. The General Board have not had the least occasion to modify any requirements as to surveys. The fact is, Mr. Stephenson's letter was written in ignorance of what were the requirements of the Board, for the point to which he raised objections never formed part of their practice. The great majority of sanctions *have* been granted *before* the preparation of *detailed* plans. There are some very strong facts as to the importance of these surveys in laying out the *complete subsidiary* works, but into these I will not enter.

Mr. Stephenson cannot have gone into the merits of the question: if he had, he would not have offered such opposition. Beta.

THE WELLINGTON FUNERAL CAR.

In answer to a printed paper of "questions," submitted to us, "to be answered for public satisfaction," we are able to say, that the car is being completed under the directions of Messrs. Banting. It required to be wholly refitted, in order to be preserved; and "its final resting-place" is to be at the Tower of London, among the other national relics, where, doubtless, in due time, some very amusing stories will be told of it by our friend the "beef-eater." Its appropriation was decided by the Lord Chamberlain.

THE STATE PRISON, TOWER OF LONDON.



PRISONERS' MARKINGS.

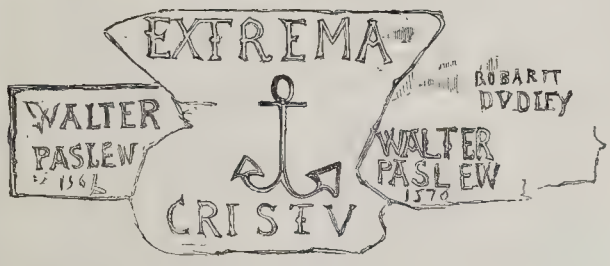


Fig. 2.



Fig. 1.

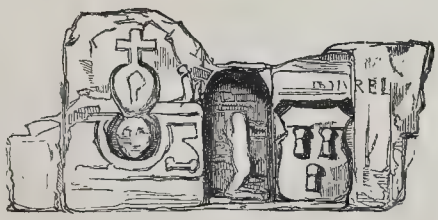


Fig. 3.

RESTORATION OF THE STATE PRISON IN THE TOWER.

"Nigel proceeded to amuse himself with the melancholy task of deciphering the names, mottoes, verses, and hieroglyphics with which his predecessors in captivity had covered the walls of their prison-house. There he saw the names of many a forgotten sufferer mingled with others which will continue in remembrance until English history shall perish. There was the pious effusion of the devout Catholic, poured forth on the eve of his sealing his profession at Tyburn, mingled with those of the firm Protestant about to feed the fires of Smithfield. There the slender hand of the unfortunate Jane Grey, whose fate was to draw tears from succeeding generations, might be contrasted with the bolder touch of the bear and ragged staff, the proud emblem of the proud Dudleys. It was like the roll of the prophet, a record of lamentation and mourning, and yet not unmixed with brief interjections of resignation, and sentences expressive of the firmest resolution."—*Sir Walter Scott's "Fortunes of Nigel."*

The chamber thus described, and two others in the Beauchamp Tower, have for some years been used by the officers of the garrison, and were in consequence comparatively inaccessible to the public, and to suit this place for the above purpose several alterations were made: the partly underground room was turned into a kitchen; the windows altered; and the upper rooms *refreshed* from time to time with coatings of paint, which had to a great extent obscured the carvings. In making our way to this most interesting portion of the Tower, from the west entrance, it is with feelings of regret that we look around and witness the want of attention to picturesque effect and fitness of style in the architecture which has supplied the place of the original buildings. We do not advocate the preservation of buildings which have become too ruinous for an important purpose, but think that in a place figuring in such an important manner in the history of the country as the Tower of London, they ought to be carefully considered, and such portions as can safely be preserved regarded with the greatest care; that when necessary to rebuild them, they should be re-erected as much as possible in the original style; and that places of historical interest should be left open as freely as possible to the

inspection of the public, who are every day becoming more interested in such matters.

On first visiting the Tower, now several years ago, no part of that ancient structure created so great an impression as the view seen through the crossed railings of Traitors' Gate. The tide was rolling into its gloomy archway, and, independently of any other association, the appearance of the place was grand and impressive: besides viewing it as a spot where most important scenes of English history have occurred, upon the steps under this gloomy gate personages of various eminence have passed never to return to the outward world: upon these steps, in a pelting storm, the Princess Elizabeth sat down, and, refusing to move, declared that "she was no traitor." We never, after our first visit, went to the Tower without spending a few minutes at this gate, thinking of the past. For some years, however, the railings through which we had a view of this interesting place have been planked over and hidden from the sight. This was done by the military authorities of the Tower, in order to form the place into a bath for the soldiers of the garrison: after a very short trial the plan, we are told, was abandoned, *yet the screen has never been removed*, and so the public are deprived of the view of this place without any useful purpose: it is a fact to be lamented, that places of interest, such as the Tower, have hitherto been treated with little care or taste by military engineers.

Having very deeply regretted this, it was with no small pleasure that we learned that the Beauchamp Tower was in course of restoration under the direction of Mr. Salvin, who, we hope, will do his best to restore the whole building, interior and exterior, to its proper appearance. This is a movement in the right direction; and we trust that the same good taste which directed this will cause the immediate removal of the covering of Traitors' Gate; and that when the national records are removed to their new house, the beautiful and comparatively perfect portions of the interior of the White Tower will be carefully looked after, and thrown open to the public.

The Beauchamp Tower is not known in history until about the reign of Henry VIII. and is covered in many parts, as may be seen by reference to the engraving we now give, with brief and often sad memorials of numerous prisoners. To these we will not at present particularly refer,* as our readers will before long have an opportunity of inspecting them. We may, however, mention, that every fragment of paint has been carefully removed, and that most of the inscriptions are beautifully perfect. Even the places where the imprisoned workmen have sharpened their tools may now be distinctly seen.

In the course of the work some recesses have been discovered, in one of which is a rude carving of the crucifixion (Fig. 1), and on another part of the wall the inscription James Gilmore, 1569, and Thomas Talbot, 1562.

The inscription engraved, in which is an anchor (Fig. 2), has also been brought to light. On one part of this stone is carved in full, Robartt Dudley, probably a relative of the Dudley who was executed with Lady Jane Grey: this stone was in the lower chamber. The initials R. D. with an oak-sprig and acorns, are cut on the wall of the room above.

The stone which forms the subject of the other engraving (Fig. 3) was found built into the adjoining house, and has evidently been removed from the state prison. There are at present two stones similar in style to this in the Beauchamp Tower, which bear upon them the inscription Peveril. The newly-found stone consists of a carving of a cross inserted in a heart; at bottom, within a circle, a death's-head; and at each side a bone. In a niche adjoining is a figure kneeling; next a shield, on which are three wheat-sheafs (the armorial bearings of the Peverils of Derbyshire);—above this shield has been the word Peveril,—the three last letters only remain. It has been let into the wall of the prison.

The careful observation made by Sir Walter Scott at the time of his visit to the Tower, is evident in the novels of the "Fortunes of Nigel" and "Peveril of the Peak." In the "Fortunes of Nigel," a place of concealment or "*lug*" is mentioned as having been built by order of James I. in the Beauchamp Tower in order to listen to the conversation of the prisoners; and although no evidence of the "lug" is visible at present, there is in a chamber above the gateway of the "Bloody Tower" a closet which overlooks the principal room, reached by a particular staircase, which could scarce have been used for any other purpose.

The window on the left side of the engraving is a new one. We followed the "Beef-eater" through the national collection, and intended to add here a few remarks, but we have already given as much space to the subject, including Mr. Hewitt's letter in another page, as we can spare in the present number.

* Some notices appeared in a former volume.

INTELLIGENCE OF IRISH WORKS.

One of the largest conventual establishments in Ireland has been completed at Cabra, in the county Dublin. An extensive pile of building, *now* finished, constitutes the last of a series of additions made within the last five years. The new buildings comprehend a chapel, with choir, ambulatories, twenty-four cells, refectory, &c. The plan of chapel consists of a nave, with lateral aisles separated from same by a range of Ionic pilasters (with arches between them), resting on pedestals, and carrying an unbroken entablature, whence springs a semi-circular ceiling, panelled. At the extremity is a great arch, resting on grouped pilasters, and opening into the sanctuary. The aisles are terminated by niches, and the nave by an apse, with a spherical ceiling, decorated with crimson and gold, and having in the centre the Hebrew symbol of the Creator. In the apse, stands the great altar, which we are informed was procured at a considerable expense. To the right of the sanctuary, the great arch opens into the choir, and is partitioned into smaller compartments by trellis work. The Lady Chapel is placed to the left of sanctuary, and contains a deeply-recessed niche, into which the application of "daylight" reflectors has proved valuable. From the grouped pilasters of the sanctuary springs a hemispherical pendentive dome, pierced by the four great arches, and surmounted by a smaller dome, having at its termination a spherical light of stained glass. The choir contains about sixty stalls. The principal feature of the entrance front is a large Venetian window with Ionic decorations. An Italian campanile has been introduced into the new buildings. Mr. Burke is the architect.

We are informed that the new court-house at Mountrath, in the Queen's county, is finished. The accommodation contained therein is more extensive than those (generally speaking) through the country. It is stated that the inhabitants of the locality find that the arrangements, which have been designed under difficulties arising from limited space, answer the required purposes satisfactorily. Mr. Campbell superintended the execution of the works.

One hundred and three miles of railway, consisting generally of portions of "*trunk*" lines and junctions, have been opened in Ireland within the last twelve months. The year 1853 promises to develop a much greater length of railways for public traffic. The project of the Galway and Belfast junction line has been taken up spiritedly, and all who are aware of its necessary importance wish for its realization. The Limerick and Foynes, and Limerick, Ennis, and Killaloe Junction lines, with many others both projected and in progress, are likely to establish railway traffic in Ireland on a good footing.

The old building in George-street, Cork (burned in 1840), and used formerly as a theatre, has been nearly rebuilt, and completely fitted out internally.

The new church erected at Birr under the auspices of the Rev. Michael Crotty, has been opened for divine service.

A new weaving-factory is being fitted up in Galway.

The intended Roman Catholic Church of St. Saviour, in Dominick-street, Dublin, will be commenced immediately. Proposals for the execution of the works have been sent in. The building will comprehend the ordinary arrangements of nave, aisles, chancel, side chapels, choir, &c. It is about being erected by the Dominican Friars, as their present church in Great Denmark-street has been found too small to accommodate the congregation of the locality. The style of architecture is Gothic, designed by Mr. J. J. M'Carthy, architect, and the expense, we believe, is likely to be about 8,000*l*.

A number of workmen are engaged at preserving one of the large stone buttresses of the new wooden bridge, fish-market, Galway, which was so much injured during the late heavy currents, that apprehensions of its destruction were entertained. Mr. Roberts, C.E. states that the object can be effected satisfactorily.

The new church at Bective, county Meath, has been opened for divine service. A glebe-house in connection therewith was erected at the expense of Mr. R. Bolton.

The Roman Catholic Church at Glan, near Oughterard (the foundation of which we noticed as being laid last summer) has been blown down.

The town commissioners of Sligo have been discussing the desirability of building a dry dock for shipping, and the harbour commissioners have taken up the subject.

The new parish church in course of erection at Longhouse, near Cashel, is progressing. It is stated that for more than a century there has not been a church in this neighbourhood.

After some delay, arising from legal proceedings, operations for the erection of the "Monster Mart," in Sackville-street, Dublin, have been recommenced.

SEWAGE QUESTION.

There is not a little misconception on this question. Permit me to ask upon whom rests the real responsibility for all the defective and deficient sewage of this great town? Certainly not upon the Metropolitan Commissioners of Sewers, for they are not provided with funds to undertake one two-hundred-and-fiftieth part of the necessary works. If this matter be of vital importance, how strangely remiss have been the Government, as a body, for having permitted matters to have existed for so long a time, in so discreditable and so disgraceful a condition. Enough, and more than enough, has already been advanced, to have shown them the pressing urgency of this question; and why have they not placed the requisite funds, or the means of acquiring the requisite funds, in the hands of the Commissioners? The total abolition of all cesspools, even where communicating with drains, should be rigidly insisted upon, and proper flushing by water supply had.

Surely an expenditure on this account would have been "most wise, just, and beneficial," and would have contrasted strangely with the needless, unprofitable, and wasteful expenditure incurred by our Caffre and Burmese wars. S.

ARCHITECT-SHAMS.

In "E. L. G.'s" paper on the "Question of Shams," there stands out one question, puerile enough to be sure, but refreshing from its simplicity and *naïveté*, and amusing from the tone of triumph with which it is announced.

Our hero is going to checkmate us all with a single pawn,—to whisper in the ears of the public the awful disclosure which must blast our reputation for ever, and strike us out from the category of honest men.

What is this terrible phantom? Well, like other ghosts, it comes in a "questionable shape:" and with your leave, sir, I will answer it, when, perhaps, as is often the case with ghosts, its terrors will vanish.

"In receiving," says our author, "the five per cent. commission on the whole cost of a building, does this include the graining?" To this I reply—Yes. "Then, what are you paid for?" I reply again—For seeing that the said graining is what it pretends to be—a representation of the wood to be imitated; that it is not charged at an exorbitant price; and, finally, that it receives two good coats of varnish.

I am not aware that anything further is involved; but I think this is quite enough to entitle me to receive a shilling for every pound's worth of the aforesaid graining.

Now, I have no wish to enter upon the vexed question of the propriety of thus imitating beautiful woods; but I submit that adopting such a practice does not fairly expose a man to the same sort of denunciation as would be appropriately applied to the utterer of counterfeit coin. I also declare, without fear of contradiction, that, however it may be with wood, there is a "rough grain" in the animal man which is greatly improved by the varnish, or polish, or gloss, or whatever you may like to call it, of good manners and refinement of language; and if "E. L. G." would condescend to adopt some of these, however so stern a moralist as himself might repudiate it as a "sham," the public would much prefer the counterfeit to the original. E.

OLD LAMPS BETTER THAN NEW.

IN scores of shop windows you may now see a new lamp, which is called "The Moderator." It is formed on singularly unsound principles; and for that reason, perhaps, appears to have met the fancy of the "educated" public. The massive stand, proper, of the lamp is hoisted up on to a little tazza, or dumb waiter, supported on a single thin stem, 8 or 9 inches high. In some a playful boy, strong in the arm, holds up a delicate flower, and upon this, in a *natural* sort of way, stands the massive pedestal of the lamp, apparently waiting its time to fall to the ground. Guests at a dinner-table so lighted must be kept in a constant state of excitement, viewing the *oil* of Damocles above their heads. The arrangement is as bad in effect as it is unsound in principle; yet, nevertheless, it has caught the British public, and is spreading far and wide. While others are bowing to the "genius of the lamp," we are anxious to give it a rub, or we shall presently see Doric columns held up from the ground on a stick of firewood. The department of practical art should stick one up in their gallery of denouncements.

FALL OF ROTHERHAM MECHANICS' INSTITUTE.

A NEW building in course of erection for the Mechanics' Institute at Rotherham was lately reduced to a ruinous state by the fall of the north wall, killing one man and injuring two others in its fall.

From an investigation into the probable cause of the fall it appears that while blame is incidentally attached by the jury on the inquest to the architect, and by the jury and more than one architect chiefly to the contractors, the primary cause may be traced to the building committee, who seem to have preferred dabbling in the duties of a clerk of works themselves to employing one, as strongly recommended by the architect. One of the committee, in pursuance of these duties, had shortly before drawn the architect's attention to a defective beam, which the architect accordingly examined and ordered to be strengthened by means of an arch of brick. The reason why he did not order it to be removed and replaced did not transpire, but the jury blamed him on this account as well as for allowing the mason to build the walls with inferior materials and to proceed too rapidly with the north wall, from which causes and the wet weather the wall had fallen.

Mr. Hadfield, of Sheffield, architect, had been requested to inspect the building and report to the coroner and jury, which he did in concurrence with his partner, Mr. Weightman, and the following is the substance of their report:—

"That in our opinion there is no material constructional defect in the plans, and that the specification has been carefully drawn up. That in our opinion the causes of the accident are:—1st. An improper deviation from the plans and specification, whereby the beam over the recess in the gable end wall was so much reduced in strength as to be (combined with the causes stated below) much too weak for the purpose. 2nd. The specification provides that there shall be at least one through-stone in every superficial yard of wall, and that river sand shall be used for the mortar, neither of which important and necessary provisions appears to have been properly attended to. These walls were to be grouted; and this also has been omitted. 3rd. The unprecedented and continual wetness of the season, whereby the wall became so saturated with water as to ooze out in various places; and when in this condition it was raised 6 feet higher in the two days immediately preceding the accident,—placing upon it an additional weight of thirty tons! which it was certainly not in a condition to bear; and this, in our opinion, was the immediate cause of the accident. We cannot close our report without stating that the architect informs us he had reported to the committee the first-mentioned deviation from the plans, and strongly urged the appointment of a clerk of works; and we cannot help expressing our regret that this very proper suggestion was not attended to."

The architect of the building, Mr. William Blackmoor, of Rotherham, in his evidence, said—

"I made frequent complaints to Mr. Dobb (the contractor), through his foreman, Mr. Chas. Morris, as to the through stones, and the quality of the lime. He stated that they were doing it according to the specifications. In some instances I succeeded in getting more through-stones. A single through left out in the wall in some particular place would cause the wall to bulge. I complained of the inner walls being rubble instead of coarse stone, every two feet, as per specification."

METROPOLITAN COMMISSION OF SEWERS.

DIFFERENCE OF OPINION.

ACCORDING to the newspapers, at a meeting, the other day, of the Commission, some discussion took place in reference to the drainage of Cheyne-walk, Chelsea.

Major Dawson intimated it as his opinion that it would not be advisable to permit any change in the drainage until the great plan of main sewage was supplied to the whole of the metropolis.

Mr. Hosking gave it as his opinion, that the scheme alluded to would never be carried out. From the experience he had been enabled, through a long study of the subject, to bring to bear upon this question, he was perfectly satisfied, he said, that such would be the case. The traffic which would be caused even by the removal of the earth, in case the scheme was carried out, would block up the main thoroughfares of the metropolis; besides which, there were so many other objections to the plan proposed, that he might safely be permitted to call it altogether objectionable.

Major Dawson rejoined, that he did not think it to be altogether right that any individual commissioner should question that which had been settled by reference to a general committee of that Court. The scheme which that committee had proposed they had believed to be a sound scheme: it was considered by them to be practically easy, but there was a difficulty in their obtaining the requisite funds to carry it out; nor, indeed, could they do so until the reports of their consulting engineers, Sir W. Cubitt and Mr. Robert Stephenson, could be obtained.

Mr. Hosking reiterated his opinion as to the impracticability of the scheme, which he represented as being an imposition upon the ratepayers at large.

Major Dawson warmly repudiated this language. He could not allow the statement, "that the scheme in question was an imposition upon the ratepayers," to go forth to the public without contradiction. The plan was in progress, and the opinions of the chief engineers would be given to the public shortly.

The Chairman (Mr. Jebb) warmly supported the opinions of the gallant major, at the same time expressing his disapprobation of the course pursued by some of the commissioners in introducing matters quite irrelevant to the business at that time before the Court. Some correspondents, we may here add, complain bitterly of the resolution passed by the Commission on on 20th ulto., that instead of competition being invited by advertisement, the principal contracting firms alone should be asked to offer for these works.

LIVERPOOL ART-UNION.—The drawing for prizes took place at the Exhibition-rooms, Old Post-office-place, on Thursday in last week, under the presidency of the mayor, Mr. S. Holme, who stated that 378 persons had subscribed, making the sum of 396*l.* 18*s.*; and there were twenty-five prizes, varying in amount from 50*l.* down to 5*l.* Mr. R. Grindley, Toxteth-park, got the 50*l.* prize, and the Earl of Sefton the 30*l.* one.

NEW CHURCHES.

MELBURY ABBEY, DORSETSHIRE.

ON St. Thomas's-day, the new church at this place, lately erected at the sole cost of Sir Richard Plumptre Glyn, bart. was consecrated by the Bishop of Salisbury. The plan of the building is irregular, consisting of nave, 58 feet by 18 feet; with south aisle; chancel, 26 feet by 16 feet; transept, 40 feet by 18 feet; tower at south-west angle; and south porch. The style is Late Decorated. The east and west window of chancel and nave, and north and south of transept, are three-light windows, with flowing tracery; the windows of nave, two-light, with square tracery; those of aisle, square-headed; chancel divided into two bays by buttresses of two stages canopied. The tower is in three divisions, battlemented with angle-buttresses, pinnacled at south-east corner; an octagonal turret, with staircase, entered from porch, each side finishing with a straight-sided canopy, surmounted by a spirelet terminating with a vane. The church is built of stone from the neighbourhood, with Bath stone dressings. Internally, the aisle is separated from the nave by an arcade of three arches, springing from octagonal columns, with labels over them. The roof of nave is arched, and braced with hammer-beams, cornice of flowing tracery, pierced. The roof of chancel is polygonal, in square panels. Seats are low, open, with *fleur-de-lys* ends. The font is in baptistery, under tower, octagonal, with rich tracery at the sides. The pulpit of oak, on stone pedestal, wrought-iron hand-rail, painted and gilt. Litany-desk open, with standards. The chancel is tiled with Minton's tiles. There are stalls on either side for the choristers. The vestry is separated from the chancel by a screen. The windows of chancel filled with stained glass, by Willement: east, centre light, "Crucifixion;" north light, "Presentation in Temple;" south light, "Resurrection." A ten-light window in south side contains figures of St. Peter and St. Paul; a single-light window, the same side, of St. John the Baptist; and a single-light window in north side, Sir Richard Glyn's shield—arg. an eagle displayed, sa. on a quarry ground, with mottoes interspersed.

The carving throughout has been executed by Mr. Boulton. The group of singing angels on each side of the chancel arch are worthy of remark. The cost of the building and fittings was about 4,000*l.*

Mr. G. Evans, of Wimborne Minster, was the architect; and Mr. Mondey, of Dorchester, the contractor.

THE ANTIQUITIES OF IRELAND.

IN our recent tour we brought under general notice, to many for the first time, several valuable architectural remains and curiosities hitherto known only in their more immediate localities, and we are glad to have opportunities of adding particulars from the stores of others who have recently visited the quiet nooks and obscure corners of so interesting a country. Such an opportunity just now presents itself in an article contained in a well-known Irish monthly magazine, which, for the last twenty years, with profit to its readers as well as to its publishers, has been regularly published at Dublin,—namely, "The Dublin University Magazine,"* in the number of which for January we find an interesting article on "Clonmacnoise, Clare, and Arran," to which we should like to refer our antiquarian readers, and from which we shall quote a few passages.

Clonmacnoise is a collection of ruins of a cathedral, round towers, tombstones, &c., in the midst of a bog, on the verdant banks of the Shannon.

"The most conspicuous objects among the ruins, are the two round towers; and the greater of these, or O'Rourk's tower, may be said to be the most remarkable building of its kind, both as being the largest and the only one the date of which is known with absolute accuracy; for, as recorded in the Annals, it was finished by the Abbot O'Malone, for King Turlough O'Connor, in A.D. 1127. The other, the tower of Temple Fineen, is evidently and unquestion-

* M'Glashan, 50, Upper Sackville-street, Dublin; Orr and Co. London and Liverpool; and Menzies, Edinburgh.

ably of contemporaneous date with the church to which it is annexed. The age of the church is doubtful. The remaining decorations of the chancel-arch may be of any date, from the ninth to the twelfth century; but, in the absence of direct evidence, these speculations from style are necessarily very uncertain. But of whatever age the church may be, of the same age is the tower; its stones being recessed, and adapted to the slope of the chancel roof, and so carefully jointed into the work of the wall, that, in some instances, the same block forms portion, at one end, of the flat surface of the church wall, and, at the other, of the curved surface of the round tower. The masonry of both parts of the building is of remarkable excellence."

On the coast of Clare is a notable formation of clay-slate, which is easily obtained in great slabs. This facility "has led to some peculiarities in the modes of burial characteristic of the cemeteries of this district. The whole surface of the churchyard is flagged over, several layers of these flat covering-stones being often laid and piled on one another where many interments have taken place; and, again, the ease and security with which a vault can be roofed in with a few of these broad, massy slabs, has led to the erection of great numbers of little chapel-like burying vaults. Thus the old church of Kilmurry Ibrickane, about midway between Kilkee and the cliffs of Moher, appears, at a little distance, to be surrounded by a multitude of lateral chapels, which, on nearer examination, turn out to be burial-vaults of the neighbouring families, roofed in for the most part with not more than four, in some cases with no more than two, of these great flagstones."

The Isles of Arran, visited by the writer of the article under notice, are not those between the Scottish coast and that of Ireland, but those on the western or Atlantic coast of Ireland itself. They contain some interesting remains, among which is a semi-cyclopean fortress, named Dunconor, of which a full account is given. On Arran More too are the remains of a number of strong stone fortresses perched on rocky summits, and doubtless dwelt in of old by powerful and respectable pirates of the main.

MANCHESTER PLASTERERS *versus* LONDON PLASTERERS.

Having seen some remarks in the *Builder*, page 28, *ante*, respecting a difference existing between the plasterers of Manchester, I am desirous of offering a few remarks respecting the plasterers of London,—not as may be supposed condemning either, but as far as my poor abilities will serve, to promote their interests, in urging architects or their employers, whoever they may be, to insist on having a superior description of work executed than that at present performed, which is not only very discreditable to the trade, but also to those who have the management of the same. It will be understood that I am speaking of it as a whole: there are exceptions where work is done well, but these are very few, and I fear, alas, that those few diminish. I am myself a plasterer, and having at various times filled the position of master, foreman, and journeyman, I have had ample opportunities afforded of witnessing the different characteristics of the above branch, and I certainly must confess that, providing the plasterers' work at Manchester is executed in the same manner as it is here, I am not the least surprised at the architects of that locality acting in the manner described; in fact, it is highly creditable to them that they should do so. As I animadverted pretty freely on the system of "Task Work," as adopted by London builders, in No. 348, Vol. 7, of the *Builder*, I will now only make a few brief remarks on the subject before us, (viz., that of ornamentation),—although, in fact, the whole system wants entirely renewing, and unless the architects look more fully into the system it will never be better.

I will ask any reasonable person if it be possible for architects to have, I will not say superior, that is totally out of the question, but decent work done when it is chiefly executed by boys, and not boys that have been entirely brought up to it, but boys that are probably serving the hawk one day, and sent into the casting-shop the next.

I am not now referring to task-masters in particular, but to builders as well, and I am sorry to say, to some of the largest and most influential. I am acquainted with one of those gentlemen that would allow none but boys to execute the casting; and I have seen in the same firm overgrown hawk-boys sent into the shop for outside casting; and what was the consequence? It was this,—the expense of material wasted would have been more than amply sufficient to have paid the extra expense of having experienced mechanics to have executed the work; and not only that, but, when executed, it would have been creditable to those concerned, whereas in that instance it was only fit for rubbish for the roads.

Now, this is not the only evil, but a much greater exists, in running ornament, bedmoulds, friezes, &c. &c. The moulds of the same being generally made of wax, require a deal of care in order to keep them straight, and which in many cases is a difficulty to an experienced workman, much more so with, as is generally the case, careless, indifferent boys. The consequence is, that when required for fixing, there is scarcely found a straight piece of cast work in the whole; and in that case it is utterly impossible for a mechanic, however clever, and however straight the moulding may be run, to fix it straight, and therefore when left for finished it resembles, instead of a straight line, a series of not very beautiful and not very easy curves, and come to add the different thicknesses of whitewash on the same, it then becomes a mass of something, but of what, it is almost hard to tell, unless it be that of rubbish. It cannot, in any sense of the term, be described as ornament, but ornament it is termed; and it is this so-called ornament that offends the eye in almost every London house you may have occasion to enter. But in many cases where the ornament is well executed it is often entirely spoiled by the fixing. I can firmly assert that there are but few to be met with that are capable of fixing it straight and clean. It only requires a little amount of care and thought, but the generality of men are such that they will not trouble about that little. Their chief thought and care is Saturday night. The stuff is plastered on the cast at random, and if it should happen to come straight, well and good,—if not, it must go, and the excuse is, the casts are crooked; and as regards the stopping, another very important feature, I might say much against it, but I fear I am trespassing too much on your pages.

After stating the above facts,—facts which cannot be denied by experienced and practical men, especially by those who have the care of men, I would most earnestly urge and beg of the architects of London, or all those whom it may concern, to examine well their plasterers' work, not on the ground, as is very frequently the case, but on the scaffold, where they are able to see it; and not only the ornamental but also the plain, which is nearly as bad, and I should not be the least surprised to see them before long imitating their Manchester brethren, or if not it will at least be the means of reforming the present system, —a system which is disgraceful in itself and ruinous to the trade at large. A London Plasterer.

MASTERS AND MEN—TRADE QUESTIONS.

At the Greenwich Police Court recently, Mr. Mortimer appeared before Mr. Traill to a summons issued in name of James Henry Tupper, one of his workmen.

It appeared, says our informant, that the complainant had been in the employ of Mr. Mortimer fixing joiners' work, and making seven days per week; but one of Mr. Mortimer's houses having narrowly escaped being destroyed by fire, apparently through inadvertance or want of care on the part of the joiners, Mr. Mortimer gave directions that the men employed in fixing should for the present be allowed to make their six days' time only. Thereupon, thirteen of the men struck, and the complainant with some others left their work at nine o'clock. The wages due to the men being tendered, Tupper, to whom six shillings were due up to nine o'clock, demanded to be paid until ten o'clock, being 6s. 6d.; having, in the mean time, employed himself grinding his tools.

Hence the summons, Tupper demanding the hour for discharging himself and setting himself to grinding his tools.

Mr. Traill said that if a man established a custom, and caused it to be followed through his establishment, such custom was not binding on other employers: to be allowed as customary, a practice must be so far generally observed as to have no dissentients. In reply to Mr. Traill, Mr. Mortimer said he employed his men by the day, at what they were worth, but they were paid by the hour. Mr. Traill said he had been engaged upwards of twenty years in defining the law of labour, and was still unable to arrive at the point. Twenty years ago it was the custom when a man had entered the service of an employer, that it should be for a year; then it reached only for a month; afterwards for a week; but now, it appears, not a day, but the smallest division of the hour was necessary to state the period of the man's service. The master said it was his practice to pay his men for every quarter of an hour they worked for him; and his worship told the complainant that as Mr. Mortimer had not withheld the wages due to him, and as the complainant could not, by himself or his witnesses, prove that it was an established custom at the yard or works of the defendant to allow time to men grinding their tools preparatory to leaving his employ,—he, the complainant, had not established his case. The Master paid the 6s. which he had before tendered, and applied to the court to be allowed for loss of his time.

Mr. Traill said the complainant had no right to take out a summons, and that the case had no business to be brought before him. He had been engaged for more than half an hour in arriving at the merits of the case, and he inquired how it was that matters of such trivial import could not be arranged between the employer and employed.

Mr. Mortimer, in reply, said that he reluctantly appeared before his worship, but having done what was fair between himself and his workmen, he considered he had cause to complain of being drawn from his business. The fact was, the workmen of Greenwich and Lewisham and the neighbourhood entertained so high an opinion of their own merits, that they thought their employers were bound, whether they had earned their money or not, to comply with all their demands, and to pay them equal to first-rate London men.

Miscellanea.

The Reaping-machines.—Our attention has been directed to the *Scientific American* of the 13th November last, in which is an article by Mr. C. H. McCormick, on the question of the origin and peculiarities of the reaping-machines. Having taken some interest in this question, and advanced Mr. Bell's claims, at the same time expressing our surprise that his invention should have been allowed by the Highland Agricultural Society of Scotland to remain so long in abeyance after they had recognised its merits by a premium of 50*l.*—we now, in fairness, give the substance of Mr. McCormick's communication, all the more especially that his form of the reaping-machine appears to date so long back as the year 1831, although he does not attempt to claim priority, but only independence, of invention in reference to our Scottish fellow-countryman Bell's. From a letter in a previous impression of the *Scientific American*, it would appear to be admitted in America that so far back as 1834, the Scottish reaping-machine was imported into America; but Mr. McCormick states that "The following is from the report of the Committee on Patents of the Senate of the United States, reported March 30th, 1852:—'That testimony was thereupon taken, in compliance with the order of the Board; and by the proof submitted on the part of said McCormick, it appeared conclusively that he invented his machine, and first practically and publicly tested its operation, in the harvest of 1831;' and that 'from the exhibits referred to your committee, it appears that his [Hussey's] machine was first constructed and operated in 1833.' (See Exhibit 17.)" If Bell's be "a useful operating machine at all," remarks Mr. McCormick, but which he contests,—"that this useful invention should have been permitted to enjoy the Rip Van Winkle sleep in the hands of its inventor until brought forward at the Great Exhibition of All Nations by an American, Englishmen and Scotchmen ought to take shame to themselves." As to this, however, although we have ourselves, as remarked, expressed surprise on account of it, we now think it is but a fair question to ask Mr. McCormick, whether his own machine has been reaping the crops of the reclining slopes of Sleepy Hollow ever since 1831,—at least until a comparatively recent date before the Great Exhibition; or rather did not its renown originate with Englishmen, in England, and in 1851? The communication of Mr. McCormick concludes with the following comparison of the respective peculiarities of Bell's machine and his own:—"The leading difference in the principles of Mr. Bell's machine and mine are, first,—Bell's cuts with a series of shears (some 14 inches in length), which, to operate, require all the accuracy and exactness of fit in the cutting edges of shears used for other purposes, as is generally understood, and which is not attainable in a reaping-machine. In my machine, the cutting is done by the simplest, as well as most effective and durable of all cutting edges for reaping—the sickle. In Mr. Bell's machine, the grain is gathered by a reel on a moving apron, or canvass, designed to discharge it regularly in swath, and which it is not pretended will answer the purpose at all in lodged grain. In mine, the grain is gathered by a reel on an immoveable platform, where it is collected into sheaves, and then deposited at the side of the machine by a man, with a rake, riding upon it. Bell's machine is propelled before the horses, while mine is drawn behind them. Thus it will be seen that my reaper, in its plan and principles of operation, is essentially and entirely different from that of Mr. Bell of Scotland."

Gas.—The Plymouth Gas Company have entered to arrangements for concentrating their works tirely at Sutton-road, and getting rid of their pro-rty at Stonehouse.——The managers of the Burnley as-light Company have made a further reduction of l. per 1,000 feet of gas, and also lowered the charges r the use of meters. The price of gas (4s. 6d. per 000 feet) supplied to the inhabitants of Burnley, is ported, not very accurately, we think, to be less an in any town in Lancashire or Yorkshire. The s company can well afford to lower the price of s, as the shareholders, it appears, have been re-iving dividends at the rate of 30 per cent. on the riginal shares. An attempt has been lately made by e Improvement Commissioners to purchase the orks, but the gas company refuse to treat.——At Whitehaven a new gas consumers' company is being rmed, and upwards of 800 shares have now been bscribed for. They propose to sell their gas at s. 6d. per 1,000 cubic feet, and calculate on a return f 7½ to 10 per cent. profit. A Whitehaven paper emarks, that "to convince the present gas company who first sold their gas at 10s. per 1,000 cubic feet, nd then reduced it to 8s. afterwards to 6s. and finally o 4s. below which they asserted it could not be re-nced, though they now offer it themselves at 3s. 4d.!) hat gas can be supplied at 2s. 6d. the new company ill readily enter into a contract to supply the present ompany with gas at that price, as soon as their orks are in operation, which will now be with the east possible delay. The present company cannot ell get upon the wrong side of the leaf by taking a upply of gas at 2s. 6d. if they can find consumers who will take it off their hands at 3s. 4d.——The rice of gas at Gatehouse is 12s. 6d., and of late here have been heavy complaints of the bad quality f the gas supplied even at that long price. The novement in favour of cheap and good gas appears o have taken root in Gatehouse. Better even to have cheap and bad gas than dear and bad. The grand pretence of the upholders of high prices is, that with cheapness there must necessarily be badness of the article supplied,—thus quietly insinuating that the dear gas must necessarily be good. The Gatehouse corollary on this very logical principle is by no means an isolated one.——If a report of an experiment performed lately with hydro-carbon gas at Carrickfergus be correct, our anticipations of immense increase in yield from coal are likely to be generally fulfilled. The experiment was conducted in the presence of Dr. Andrews, Vice-President, Queen's-college Belfast, and Dr. Ritchie, by Mr. Barlow, late manager of the Belfast Gas Works. The results, as at present ascertained, are reported to be—that, in a period of four and a half hours, there had been extracted 755 feet of gas from 56lbs. of coal and the necessary admixture of water. This is at the rate of 30,200 cubic feet for a ton. The ordinary produce by the common method, and with ordinary coking coal, is 8,090 cubic feet only to the ton weight; so that it is evident, considering canal coal to be even greatly higher in price than it really is beyond ordinary coal, there is a vast saving in its use. It was also ascertained from the experiment that the gas was manufactured at the rate of 16d. per thousand feet. The price at which ordinary coking coal gas is supplied to consumers in Belfast at present is 5s. per thousand feet. But it is practicable to increase the yield by the hydro-carbon process even still farther; for, by the use of a second water retort, Mr. Barlow would have been enabled, it is said, to produce 60,000 cubic feet to the ton in the same period and from the same quantity of coal, making the price per thousand feet as low as 8d.

The Grantham Institution's Soiree.—A gathering of all classes in Grantham and its vicinity took place in the Exchange Hall (Lord Yarborough in the chair), on 20th ult. when about 1,100 persons met for mutual enjoyment. The hall was decorated for the occasion, and the refreshments were interspersed with music, vocal and instrumental. The meeting was addressed by Lord Yarborough, Lord Montague William Graham, Lord Worsley, Sir Montague J. Cholmeley, bart. and other gentlemen.

The Dome of Sta. Sophia.—In your paper of the 29th ult. you mention that Mr. Donaldson informed the Institute of British Architects that he had received a communication from Signor Fossati, at Constantinople, respecting the precise dimensions of the diameter of the dome of Sta. Sophia, which was stated to be 106 feet 7·557 English inches. As I have had an opportunity of measuring the dome myself, I beg to forward you the result of these measurements, and regret that they do not correspond more nearly with those of Signor Fossati:—

	Ft.	in.
Diameter of dome	101	8½
Distance between north and south walls at base supporting the dome	108	3½

W. Granville.

The Lecturing System at Home and Abroad.—The example set in this country by men such as the Earl of Carlisle, and his peers, has evidently reacted on the American States, where the earl's name is now a host in point of influence; and although there are few or no titled men there to lecture, we observe that the lecturing system, which some years since had fallen into a state of collapse, is reviving, and official, reverend, and other gentlemen are vieing with each other in their endeavours to enlighten their fellow countrymen by lecturing them on various useful subjects. The titles of some of the lectures will sound a little *outré* in this country, at least in connection with the *title* of the lecturer: thus we have the *Rev.* Mr. Osgood lecturing on "Luck and Pluck,"—a striking antithesis, which it is said he "resolutely handled." Apart from a little literary artifice, stretching of titles, and high seasoning in detail, however, much good must result from the revival of the lecturing system in able hands. With ourselves, too, this system continues to flourish. We are ever and anon recording some noble effort of Lord Carlisle, either in lecturing or in mere extemporaneous address of interest and brilliancy scarcely beneath his more elaborate efforts, and this very week we shall have occasion to note a new instance of his public spirit. The list of lordly lecturers, too, has recently been enforced by Lord John Russell in Leeds, Lord Goderich in London, and the Duke of Argyle, in Scotland. Other men of note are following these examples,—Mr. Samuel Warren, Q.C. at Hull, on the Intellectual Development of the Age itself; and Mr. Tufnell, M.P. who is to lecture at Stonehouse on Eastern Travel and Superstition, and at Devonport on another subject not yet announced.

Architectural Students.—About twelve months since we admitted some remarks concerning the student of the Royal Academy who was nonsuited in the competition for the silver medal for drawings of Bow Church. By way of sequel we are asked to notice, that in the succeeding season that same student was the successful candidate. The following is copied from the inscription in an architectural work presented in addition to the medal:—"The Medal offered by the Royal Academy of Arts in 1852, for the best drawings from actual measurement of the cloisters of Westminster Abbey, was, on the 10th of December, in the same year, awarded to Mr. R. Norman Shaw;" when the president spoke as follows:—"Mr. Richard Norman Shaw, in presenting to you this medal, I am authorised to say that the drawings for which it is awarded have elicited the unqualified commendation of your judges; and the Academy, to mark its sense of your exertions, have resolved to present to you, in addition to the medal, some standard work on architecture, suitably inscribed, as a more than ordinary testimonial of the approbation of the Academy, and as a special record of your present success."

Institution of Mechanical Engineers.—The sixth anniversary meeting of this institution was held on Wednesday in last week, at Birmingham. The president, Mr. R. Stephenson, occupied the chair. The report of the council congratulated the meeting on the advancement and increasing efficiency of the institution. The number of members for the last year was 204. The accounts show a considerable balance in favour of the institution. Reference was made to the receipt of a considerable number of works on engineering subjects, and to the present of several valuable busts. The annual election of officers of the institution then took place. Mr. Robert Stephenson was re-elected president. Messrs. Beyer, Fairbairn, M'Connell, Penn, Slate, and Whitworth were elected vice-presidents. Messrs. Blackwell, Clift, Fothergill, Peacock, and Scott Russell were elected members of council. Several new members of the institution were also elected. The first paper read and discussed was "On an Improved Railway Chair," by Mr. John McConochie, of Wednesbury.

Alloa Fire-Clay.—I observe in the last number of your valuable journal, in an article quoted from the *Worcester Herald*, an analysis of the Stourbridge fire-clay, together with several important details connected with the manufacture and consumption of the Stourbridge fire-goods; and I trust that a similar analysis of a competing article, new in this market, will not be unacceptable to some portion of your readers. Analysis of the Alloa Fire-clay, made by Dr. Fyfe, F.R.S.E. lecturer on chemistry:—

Moisture	3·62
Silica	54·61
Alumina	35·34
Lime	0·99
Magnesia	0·68
Peroxide of iron	4·76
	100·00

T.

*** The Alloa fire-bricks have a good character for furnaces.—Ed.

Llangollen Slate.—At a late meeting of the Architectural Institute of Scotland, Mr. W. G. Smith produced and exhibited specimens of slates and slabs—the latter in various stages of polish—from the quarries of the Denbighshire Slate Company and the works of the Llangollen Slab Company. He stated that the quarries were situated near Llangollen, in the eastern extremity of that range of stratified rocks termed by Professor Sedgwick the Cambrian Group, which is composed for the most part of clay slate, and extends from the western coast of Carnarvonshire into Denbighshire. He referred to the equality in texture and the substantial form of the specimens exhibited as proving that the slate is fitted for a stormy and moist climate like that of Scotland. The slabs are applicable to a great variety of purposes, and are valuable, he said, from their economy, durability, cleanliness, imperviousness to damp and to the attacks of vermin, and also from their non-liability to expansion or contraction by heat or cold. They are peculiarly adapted for stable fittings, such as mangers, corn chests, paving, and stall divisions, as well for the reasons already stated as on account of their cleanliness, their not communicating disease, and from their being a preventive to sucking or crib-biting in horses; and they are suitable for soft as well as for dry food. They are well adapted also for baths, cisterns, scullery-boxes, kitchen-table tops, and shelving (where coolness is required, as in dairies), &c. and for lobby flooring, lobby-table tops, basin-stand tops, chimney-pieces, stairs, skirting, church-clock dials (from not being affected by the changes of the atmosphere), and various other purposes. When examined by an ordinary microscope, the slab is found to be finely granular and porous in appearance. It is much more easily worked than any marble, and when slightly oiled assumes a black hue. The slabs from these quarries are of a uniformly pure *unspotted* dark slate grey.

Cabs.—The suggestion in your last number about cab fares at one shilling for any distance within a certain circle is well worth attention, and would assuredly pay the proprietors while it pleased the public, who are now so disgusted. That circle, too, might radiate from Charing-cross and just embrace all the railway stations. But some difficulty might arise about luggage unless the 6d. was on every outside package as well as on every passenger beyond two who should only pay one shilling. The present fourpenny and eightpenny fares are such a premium for imposition that I wonder the commissioners are not ashamed of it. Who ever pays it? Indeed, there was a wager lately made that out of twenty fares there should not be five that were not extortions, and the bet was won, for even in the shortest distance possible one shilling was invariably asked, and great abuse followed the payment of only 8d. Is any further comment requisite?—Pad.

Architects and Builders.—A very honest, worthy man, a builder, comes into my office this morning, and says, "I am very sorry, Mr. O. that I cannot pay your account as agreed, but (pulling out a letter) here is the cause." It is the architect's reply to an inquiry from the owner of a house my customer has built, why he does not pass the work and give him the authority to pay. The architect says he has been much engaged over some very large works in the country, which have kept him from town some months; but he hopes in a week or two to meet the builder, of which he will give him previous notice. Now, in the contract for this building was a clause, that if it was not finished by a certain date, the contractor was to forfeit 10*l.* per week. The house was finished by the time: it is inhabited; and yet the builder is kept out of nearly 100*l.* which he ought to have received months ago; and, said he, "it hurts my credit," a sentence which speaks volumes. Surely there should be a remedy for this.—O.

The Queen's Station at Windsor.—A miniature station for royal use has been erected at the extremity of the South-Western terminus, in Datchet-lane, immediately opposite the entrance to the Slopes of Windsor Castle. As described by the *Windsor Express*, the entrance is through a portico, ornamented with carvings in stone by Mr. Thomas. Folding-doors lead to a vestibule, measuring 28 feet by 19 feet, and about 20 feet high, with a groined roof, and lighted by a gas chandelier. The walls are hung with gold-paper corresponding in pattern with the cornices. The vestibule communicates by a small door directly with the platform. To the left, after entering the vestibule from the front, is the Queen's waiting-room, with folding-doors. Its ceiling is an arched dome, ornamented with gold and crimson bosses, and having suspended the gem chandelier, patented by Hancocks and Rixon, of Charing-cross. A bay window looks out upon the lawn: it is composed of oak, carved, and is glazed with plate-glass. Adjoining the waiting-room is a small dressing-room. The whole, it is said, is richly furnished and decorated.

How Houses are Built.—I am induced to write to you for some information touching the duties of district surveyors, from the fact of a party-wall (near Pentonville Prison), on which the bricklayers were engaged putting on the chimney-pots, falling with a crash which resounded through the whole neighbourhood, on last Friday afternoon; and this is the *second* time it has occurred. Surely there must be something very wrong in the buildings I refer to. There is a row of sixteen or seventeen houses in the rear of the street where this accident occurred, the walls of which are hollow, and filled in with brick rubbish. A friend of mine watched them for a quarter of an hour filling up with rubbish. It is high time something was done to put a stop to such unprincipled doings.—R. L. O.

Stonemasons' Strike at Ashton.—The operative masons here have struck against sub-contracting and piece-work, which, they say, breeds much mischief in the trade, and greatly interferes with their interests.

Cost of New Buildings at Maynooth.—The new buildings recently authorised to be erected at Maynooth (R. C.) College are now complete, but most of the fitments are in an unfinished state. The late Mr. Pugin furnished the designs. The original contract was 23,500*l.*; for drains and excavations, 1,775*l.*; extra works, 834*l.*; incidents, 25*l.*; besides another sum of 5,728*l.* granted for alterations, &c. and maintenance of the apartments of officers, chapels, &c.

Lecture on Locks and Latches.—On Tuesday in last week a lecture on locks and latches was delivered, as one of a course of "Bilston lectures," in the school-room of St. Mary's Church, at Bilston, by Mr. J. Chubb, of Wolverhampton and London. The lecture comprised some interesting remarks on the history of locks and latches, in which the principle of an Egyptian lock, a principle 4,000 years old, and nearly identical with one of Chinese formation, was declared to be, after all, the true and radical principle of safety,—"namely, that of several separate independent and moveable detainers of the bolt, each being lifted to its proper place by corresponding projections or parts of the key. The lecturer gave some particulars as to the manufacture and statistics of locks and keys. This branch of manufacture, he observed, "is carried on principally at Wolverhampton and the adjacent towns in Staffordshire, as well as in Birmingham and in London, and gives employment to thousands of persons. Besides the home consumption, a large export trade is also carried on; and it is gratifying to know that the use of the best locks, on which a great amount of labour is expended, is increasing, whilst greater attention has lately been paid to the style and character of the ornamental part of both locks and keys."

The Liverpool Waterworks at Rivington Pike.—There are three contracts, numbered respectively 3, 4, and 5. No. 5, or Horwich contract, extends from Horwich to Knowsley, about two miles, and includes the main works. It is let to Messrs. Scott and Knowell, for about 65,000*l.* No. 4, the Anglesark, or Knowsley contract, is let to Messrs. Miller and Lawton for about 22,000*l.* No. 3, or Roddlesworth contract, I believe, to Mr. Isherwood for 20,800*l.* Or, taking them altogether, the contracts amount in round numbers to about 107,800*l.* But to this must be added the "extra" work, upon which the present dispute is grounded, which has caused Mr. Hawksley to hold what he calls a "court of arbitration," in which he is himself the judge. This, it is surmised, *may* be covered by a further outlay of about 15,000*l.* Undoubtedly, when finished, the Pike will be a very fine lake, or, rather, a series of lakes. In all, 650 acres of land have been purchased, at enormous prices, and there will be a water surface of at least 400 acres. The Horwich-pool will run shallow to a level with the bottom of Knowsley-bank, so that the Knowsley-pool will be considerably higher than it. There will be a goitre, or canal, 4½ miles long, between Knowsley-pool and Roddlesworth, the head of the reservoirs, and into the latter will be collected the water from the hills in the neighbourhood of Darwen. The nearest end of the Pike will be 25 miles from this town.—*Liverpool Journal.*

The Exhibition Building at Dublin.—It has been found necessary to enlarge this building, as applications have already been received to three times the amount provided for. The space which the enlargement will give is equal to 65,000 superficial feet of flooring, 30,000 feet of wall space—making a total of 185,000 feet of floor and counter space, and 117,000 of hanging space. Mr. Fairbairn, of Manchester, has contracted for the supply of engine and shafting for the driving of the machinery, and, as the works are progressing rapidly, there is no fear of the opening at the specified time—5th May. The internal arrangements are under the superintendence of Mr. R. A. Thompson, a gentleman who held a responsible position in the Exhibition of 1851.

Condition of Rotherhithe.—No one can read your journal without being pleased and satisfied with the efforts made by you to benefit the interests of every community your voice or pen can reach; and great has been your success in every quarter, from the highest to the lowest grade in our population. There is one locality which opportunity has not yet been afforded you to visit and explore,—that is Rotherhithe. A more neglected and sunken, damaged, and wasting interest,—public, parochial, or private,—there is not from Chelsea to Woolwich, of which you would learn on a visit to its neighbourhood; and when this favour shall occur, you shall not need or lack information.—H. G.

Discoveries in Egypt.—The *Daily News* mentions the discovery of a buried city in Egypt, named Sackareh, about five hours' journey from Cairo, near the first cataract. The head of a sphinx appearing above the ground, a French gentleman laid open a long-buried street, 1,600 yards in length, which contained thirty-eight granite sarcophagi, each of which weighed about sixty-eight tons, and which had evidently held the ashes of sacred animals. The French gentleman has got a grant of the spot from the Egyptian pacha, and has exhumed great quantities of curiosities, many of which have to be kept buried in sand to preserve them from perishing. At Alexandria, just above the square, and near the Greek church, there has been laid open the foundation of what is believed to be the once famous Alexandrian Library, destroyed by the Caliph Omar.

Workmen's Claims.—In an article on concert between masters and men, the *Leader*, speaking of a request on the part of the workmen in the coal and iron trades for an advance in wages, says,—"The trade reports, in some degree, describe that which is a novelty: 'The workmen have grounded their requests upon the sound and improved condition of the trade, and having preferred their solicitations in a temperate manner, they have been courteously listened to.' Both sides have gained by this quiet arrangement: the business of the employer has not been interrupted, and the workman has attained his wish. The working classes are too apt to imagine that a respectful and temperate manner will be regarded as a mark of servility on their part, and they assert their independence by a threatful and offensive demeanour. If they would reflect a little, they would observe that amongst the employing class themselves, a certain respectful courtesy is expected and given; and they would observe that between man and man, in whatsoever class, a hasty and menacing style always provokes a disposition to retort and to refuse. Many of the demands of the working classes have been foiled by the manner in which they have been put forward. Again, the working classes have sometimes pushed their demands, simply because there was an emergency, without regard to the soundness, or the profitable character of the trade then carried on. It is possible, in unfavourable seasons, to have an alternation of loss and of hasty profit, which may place the employer at the mercy of his hands, although in the long run his books will show a scanty profit. When the working man takes advantage of that awkward state of things, it is he who appears as the hard and exacting barginer. It has sometimes been so. In the present instance, however, it cannot be said that the working classes in any branch of trade have been impatient."

TENDERS

For the new offices, London-bridge, for the London, Brighton, and South Coast Railway:—

William Hill	£20,100	0	0
Locke and Nesham	19,600	0	0
H. and C. and R. O. Holland	18,993	0	0
John Kelk	18,800	0	0
Robt. Bushby	18,000	0	0
Geo. Furness	17,900	0	0
J. and C. Rigby	17,400	0	0
Geo. Myers	16,510	0	0
Jas. Little and Son	16,500	0	0
Howard and Son	16,500	0	0
Lucas, Brothers	15,923	0	0
H. J. and T. W. Piper	15,515	0	0
John Jay (accepted)	13,932	0	0

TO CORRESPONDENTS.

"*Steam Superseded—Motive Power.*"—Several letters on this subject will be considered next week.

Erratum.—We are asked to say that J. W. Hoare, in the list of gentlemen admitted, as students in architecture, to the Royal Academy, should be Thomas W. Hern.

"W. E." "W. C." (declined with thanks), "F. F." (ditto), "G H." (ditto), "Z.," "E. B." "C. C," "G. B.," "C. B.," "C. C. N.," "Quack," "A Lady," "E. M.," "S. O. F." (thanks), "M. A. A.," "A Subscriber," "A. P.," "C. H. M.," "R. W.," "B. C." (too late for interference to be useful), "Fair Play," "One in the Palace," "G. R. C.," "A. B.," "A. C. C. C. M." (plasterer's wax), "E. H. M." (they shall be returned).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the Editor, and *not* to the Publisher.

ADVERTISEMENTS.

JOINERS.—WANTED, two or three good JOINERS.—Apply to Mr. J. F. MATTHEWS, Architect and Surveyor, Reigate, Surrey.

A SURVEYOR and AUCTIONEER in the Midland Counties, requires a YOUNG MAN as ASSISTANT. As the situation will be permanent, terms must be according. Good references, and security for 100*l.* will be necessary.—Address, W. R. care of Mr Southam, Saw Mills, Gillingham-street, Pimlico.

TO BUILDERS' CLERKS.

WANTED, in a large town in the country, a person fully competent, and that has had practice in taking out quantities, making estimates, measuring work, and making working drawings, and who understands the general routine of a builder's office.—Address, Z. B. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, a respectable, industrious, middle-aged MAN, to reside at and conduct the working of an extensive Granite Quarry, in South Devon; he must be a man of experience and with high testimonials.—Apply by letter to A. B. Granite, Office of "The Builder," 1, York street, Covent-garden.

WANTED, a PLASTERER as FOREMAN, used to Keene's and Parian Cement. None others need apply. Wages, 6*s.* a day.—Address, with references, A. B. 97, Gloucester-street, Queen-square, Bloomsbury.

WANTED, a JUNIOR CLERK and BOOK-KEEPER. One accustomed to builders' accounts, or keeping men's time, will be preferred. Salary, one guinea per week.—Apply in own handwriting, to Messrs. SYLVESTER and CO. 96, Great Russell street, Bloomsbury.

TO WHITESMITHS.

WANTED, immediately, a WHITESMITH, of active and sober habits, who has a thorough knowledge of his trade, and has had experience in heating greenhouses, with hot-water apparatus.—Apply by letter to FLINT (Brothers), Ironmongers, Margate.

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WANTED, by a Man who thoroughly understands the Plumbing and Glazing department, a SITUATION. Satisfactory reasons will be given for leaving his late employer, for whom he has worked upwards of eleven years.—Address to C. H. 188, Union-street, Borough.

TO TIMBER MERCHANTS AND SAW MILL PROPRIETORS.

WANTED, by the Advertiser, who has been all his life engaged in the timber trade, and has had considerable experience in extensive saw mills, a SITUATION as MANAGER in London or elsewhere, in one or both of the above capacities. References can be given.—Address, A. B care of Mr. Cooke, 71, Southgate-street, Gloucester. N.B. Would have no objection to contract for the working of mills.

TO TIMBER MERCHANTS.

A YOUNG MAN, who has a thorough knowledge of the timber trade, and a connection amongst country builders, having lived twelve years in his present situation as collecting clerk, wishes to obtain a SITUATION as CLERK or COLLECTING CLERK. Only a moderate salary required.—Address, S. J. care of Mr. Chappell's, 386, Strand.

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A YOUNG GENTLEMAN with considerable experience as a civil and mining engineer, both in the field and as a draughtsman, and who has had the management of heavy tunnels and other railway works, is just out of employment, and is desirous to be RE-ENGAGED; he has no objection to go abroad; the most satisfactory references will be given.—Apply, by letter, to C. F. Mr. Clifford's, 5, Inner Temple-lane.

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THE Advertiser, who has served nearly seven years under a Civil Engineer, is desirous of obtaining work at his own Office, as DRAUGHTSMAN to the profession. Every description of maps and plans, bridge, station, and other drawings commenced with civil engineering executed; fair and working drawings prepared from engineers' notes and rough sketches; sections plotted; bills of quantities and specifications drawn out; earth-work calculated, &c. &c. Satisfactory reference can be given.—Address, Mr. T. D. WELSH, 5, Charley-place, Church-street, Kennington.

A N active person, aged 30, wants a SITUATION, either in an Office, or to take charge of the work out. Is well acquainted with practical building; a good draughtsman and designer of villas, &c.; can set out work, measure, estimate, &c.—Address, terms, &c. A. B. Mr. Dalley's, Grocer, Link Marsh, Great Malvern, Worcester.

TO BUILDERS AND ACCOUNTANTS.

THE Advertiser, who has a partial knowledge of Book-keeping, taking out Quantities, and Estimating, is desirous of IMPROVEMENT under a competent person.—Address to H. G. 19, Basinghall-street, City, stating terms, &c.

TO ARCHITECTS AND CIVIL ENGINEERS.

AN experienced and well-qualified CLERK of WORKS (aged thirty-five), who has just completed his engagement at a nobleman's mansion, and has been for several years so employed on important works, is now open to an ENGAGEMENT. Can give unexceptionable references to architects for periods of two and five years' service.—Address, A. A. A. at No. 40, Cambridge terrace, Hyde-park.

TO MASTER CARPENTERS AND BUILDERS.

THE Friends of a respectable Youth, aged seventeen, wish to apprentice him as IN or OUT-DOOR APPRENTICE to the trade. A small premium will be given. Direct to A. B 14, Upper Seymour-street, Euston-square.

EVENING EMPLOYMENT WANTED, by an Architect's Assistant, to COPY or TRACE Working, Detail, or Finished DRAWINGS, or to copy Specifications.—Address, N. S. G. at Tichbourne's Library, 26, Paddington-street, Marylebone.

AS CLERK or TIME-KEEPER.—WANTED, by a Young Man, a SITUATION in a Railway Contractor's or Builder's Office. Has been engaged for the last two years in a similar situation. Satisfactory references can be given.—Address by letter, prepaid, to W. G. BENNETT, Pollard's-row, Bethnal-green-road.

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PATENT DATED 9TH DAY OF OCTOBER, 1852.

CLARK AND CO.'S
NEW PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS,
AND
IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.



The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section.

A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected together, and can be ROLLED EITHER WAY, greatly facilitating their application.

C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the laths to split, and combining the lightness of wood shutters with the durability and appearance of iron.

CLARK and CO. have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwelling-houses, thereby saving a large item in their cost (the fixing), and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the whole can be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.



IMPROVED DRAWN BRASS SASH-BARS AND STALL-BOARD PLATES.

PROSPECTUSES, ENGRAVINGS, AND TESTIMONIALS FORWARDED, ON APPLICATION TO

CLARK AND CO. ENGINEERS,

PATENT SHUTTER WORKS, 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 98, Regent-street, and his Steam-works, 138, Old-street. These shutters have fully the one out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to gentlemen whose mansions are fitted herewith, and numerous large establishments where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

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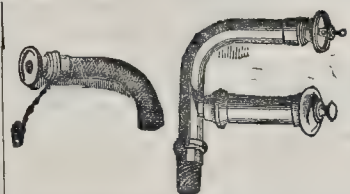
Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride is most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body, by which terms the power of covering surface well and extensively, is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 80 to 100, that is, 80 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable.

The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

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IMPROVED TELEKOUPHONON

FOR SPEAKING-PIPES.

By means of this invention speaking-pipes may be rendered more generally available for Public Buildings, Club Houses, Noblemen's Mansions, City Warehouses, Offices, &c.&c. It consists of a whistle-mouthpiece of ivory, wood, or metal, with an indicator attached, by means of which, in case of two or more speaking-tubes being carried into one room, the mouthpiece from which a whistle proceeds is readily ascertained.

The newly-registered invention also embraces a plan (as shown in the right-hand figure annexed) to supersede the necessity of blowing into a speaking-pipe when the whistle at the further end is required to be sounded.

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CROGGON'S PATENT ASPHALTE ROOFING FELT, has been extensively used and pronounced efficient, and particularly applicable for warm climates.

1st. It is a non-conductor.—2nd. It is portable, being packed in rolls, and not liable to damage in carriage.—3rd. It effects a saving of half the timber usually required.—4th. It can be easily applied by any unpractised person.—5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.—6th. Under slate, metal, or tiles, it is a most effective non-conductor.

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Samples, testimonials, and full instructions, on application to CROGGON and CO. 2, DOWGATE-HILL, LONDON.

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ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridges, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 123 (having been at first No. 111).

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Tables of rates and forms of proposal may be had free on application at the Society's Offices, 126, Bishopsgate-street (corner of Cornhill), London. WILLIAM COOK, Agent.

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By order, EDWARD N. STEPHENSON, Clerk and Solicitor to the Trustees.

NOTE.—The Trustees meet on the second Wednesday in every month, to consider such applications for loans as have been sent in one clear week at the least before the first day of the month.—The sureties must be unexceptionable.

MONEY and BUILDING LAND.—Parties requiring BUILDING LAND and ADVANCES of MONEY, are requested to apply to Messrs. HALE, Surveyors and Land Agents, 183, Piccadilly. Respectable references are required.

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PATENT LIQUID CEMENT for the fronts of houses, for beauty pre-eminent, giving the appearance of fine cut stone, and only one-eighth the cost of Oil Paint. In coats of 1, 2, and 3 cwt. at 8s. 12s. and 21s. each.

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C. R. M. TALBOT, Chairman.

The transfer-books will be closed on and after the 12th instant, and will not be re-opened until after the said Half-Yearly Ordinary Meeting on the 25th instant.

By order, FRED. G. SAUNDERS, Secretary.

South Wales Railway Office, 16, Eastbourne-terrace, London, Feb 1, 1853.

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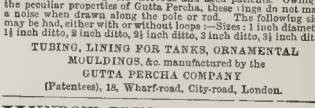
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The Builder.

ATURDAY, FEBRUARY 12, 1853.

THE proceedings at the Tower are indefensible: a great change is required, and we trust that the remarks which have appeared in our columns will have the effect bringing this about *immediately*. The stir t the communications in question have pro-ed out of doors has been much greater than ld have been anticipated, and shows that a siderable section of the public feel an interest the proper arrangement, careful completion, truthful and intelligent exhibition of the ional collection of arms and armour at the wer. It ought to be, could be, and must be, de the finest collection in the world,—an inent means of instruction and improvement, tead of being, as it now is, a deceptive how," mystifying those who know nothing out it, and exasperating those who do. A siderable sum of money is paid every year visitors (the disposition of which we should glad to learn), and if more were needed it uld be readily provided. There should be at e head of the establishment a man possessing mplete knowledge of his subject: there may even now for anything we know to the con-ry, but in that case we should be obliged to tend either that he is rendered powerless by cumstances, or that he does not give proper ention to his duties. The letter of our cor-spondent "A." (p. 20), would of itself suffice prove the case. Out of the Tower, but one inion as to the celebrated "Winged Burgonet" ems to have been entertained by those who st understood ancient armour, and that is, the opinion expressed by our corre-ondent "A."

The following letter on the subject, which has en addressed to us by Lord Londesborough, nds further to confirm it. His Lordship thus rites:—

"As a collector, and, therefore, one of 'the dignant British public,' I feel bound to ex-ess to you my sense of the obligation which u have conferred upon unwary purchasers by awing public attention in the *Builder* to e numerous forgeries of ancient arms and mour.

The 'Winged Burgonet' that has been pur-ased for the collection at the Tower, and pre-med to be a forgery, was brought to me during st summer by the elder Mr. Zimmerman, the aler in Old Bond-street: the price he asked as 25*l*. The general appearance of the Burgonet,' added to its being brought to me ith an 'Anelace' that was an evident forgery y San Quirico, induced me to hesitate in the archase. Mr. Zimmerman did not insist that it as genuine, but left it with me for further ex-nination, and to show some friends whom I con-dered far better judges than myself. Upon y showing the 'Burgonet' to the individual hom I consider the best judge of armour in ondon, he declared it to be a most undoubted orgery, and I returned it to Mr. Zimmerman. Not very long afterwards I recognised it in the ack room of Mr. Falcke's shop in Oxford-reet, and I pointed it out to my brother (Lord onyngham), who was with me, as a specimen f the forger's skill. "LONDESBOROUGH."

Unless we are gravely misinformed, there is *fac-simile* of this "Winged Burgonet," *equally enuine*, now in the shop of a well-known aler.

Let the knowledge of the authorities at the ower be as good as it can be, we are quite ady to admit, they may sometimes be deceived: ie imitations are sometimes so perfect that only a practical worker in metal could venture to decide upon them with safety. We do maintain, however, that when the helmet in question was "pronounced a modern fabrication, partly modelled from a specimen in the Ambras collection at Vienna, and one of a score of the same pattern, manufactured by a clever foreign artist, not privately for fraud, but publicly for sale, for theatrical and other pageantry," they were bound to satisfy themselves that the report was unfounded. Mr. Hewitt says, in his letter to us (p. 85), "as to the spuriousness or genuineness of the Burgonet in question, that is a point to be settled between your correspondent and Mr. Falcke." We cannot admit this for an instant, nor will the public. The duty rests with the authorities at the Tower.

There is another helmet in the national collection, which a credible informant tells us was offered for sale in Paris not long ago at *a large price*, not as a genuine helmet, but as a very fine specimen of modern skill and art.

Mr. Hewitt, as it seems to us (and we say it without meaning any disrespect), has not answered our correspondent's charges; indeed, to a certain extent he admits their correctness. "A." however, has forwarded his own reply, which may as well come in here as elsewhere.

He thus expresses himself:—

"Mr. Hewitt has fired a tremendous peal of ordnance in answer to the reports in the *Builder* concerning the armoury at the Tower. Why Mr. Hewitt should have lost his temper with me, I cannot conceive. I did not "drag his name into the discussion;" and although he was the gentleman who exhibited the Winged Burgonet to the Archæological Institute, I gave *him* the opportunity of escape, by admitting freely that "in the present state of art, imitations of antiquities can be produced so perfect in form and colour as to puzzle exceedingly acute antiquaries." Here was a compliment Mr. Hewitt might have applied to himself. The charge, not against him, but against the persons, whoever they may be, authorised to purchase armour for the national collection, was, that they had made a purchase indiscreetly. Have they done so or not? It cannot affect Mr. Hewitt. He declares that he "never saw" the helmet "till after it was purchased for the Tower." Nobody ever said he did; but, without taking up your time or space, I will briefly say, that if he wishes to test the genuineness of it, there is, or was a few days ago, another Winged Burgonet identical in pattern and material in the possession of the same dealer—another "most skilful specimen of *repoussé* work," which might be added to the Tower collection at probably a lower price than that which was paid for its fellow. It is no doubt equally genuine. How many more may, some day or other, turn up "at Florence," or elsewhere, to be added to the Tower collection, I am not at present prepared to say.

With respect to the anelace, or dagger, fabricated by San Quirico, I quoted the exact words of the gentleman who sold it. I use the epithet gentleman advisedly. I am yet to learn that there is any dishonour in openly disposing of a forgery *as a forgery*. If Mr. Hewitt possessed a copy of any painting by an old master, and sold it as a copy, would he consider that dishonourable? It is in the assertion of falsehood or the suppression of fact that dishonour exists, in my opinion. I am not going to drag my informant's name into the discussion; but he is well known and highly respected, and can afford to smile with me at the questionable taste and English of Mr. Hewitt's "forgery acquaintance," and I shall therefore leave him to enlighten "the store-keeper and the armoury-keeper," if he think proper to do so. He may possibly point out another thing or two in the armoury which they know nothing about.

With Mr. Hewitt's opinions on other specimens of ancient armour I have nothing to do. They are merely opinions, and, like my own, may be right or wrong. I presume he will not quarrel with me for differing with him on some points at issue between himself and other antiquaries of perhaps equal authority. Neither am I bound to find pedigrees for all the children of other people's adoption, any more than for those of Mr. Hewitt's: I only repeat, that persons entrusted to buy for a national collection should do their best, which I maintain they did not do in the case of the Burgonet. Mr. Hewitt, it appears, has done so on some occasions, without being so entrusted; at his own cost, too! Hardly fair of the Tower authorities! The "advice gratis" of such an antiquary as Mr. Hewitt is surely enough to accept, without leaving him money out of pocket.

There is one point upon which I find I have made a mistake, and I hasten to correct it. I should not have said the authorities "*do* not blush to exhibit to the public a patched-up figure in Indian mail as a Norman crusader of the time of Edward I." I should have said "*did* not," for Mr. Hewitt, quoting his guide-books, proves that they *have* blushed; and now informs us that the equestrian figure "*has long borne the name* of the Norman Crusader. It is, however, an Asiatic suit." *Too* long, I should say, for I have heard it called so by the exhibitor since the publication of the guide-books quoted, which, be it remembered, everybody does not buy, and that brings me to the last point I have to notice in Mr. Hewitt's letter. In the guide-book published *after* the re-arrangement of the horse armory by Sir Samuel, then Dr. Meyrick, this identical figure is *not* called a Norman Crusader; but "Edward I. King of England, A.D. 1272," and is described thus:—"The armour of the figure consists of the hauberk and its sleeves of mail; the hood and chausses of the same material; and on the body is the surcoat, emblazoned with the Royal arms before and behind. This monarch is represented in the act of sheathing his sword." This description (No. 1) is followed by those of twenty other mounted effigies, beginning with Henry VI. of England, and to the information that "to the left of the spectator is a crimson banner, which in letters of gold on both sides expresses *the name, rank, and date of existence of the personage on its left*," is appended this foot-note: "The date in every case is correct; but as only ten suits can positively be identified, these are marked thus (*)." Now, Sir, you perceive that even the old guide-book was "*most explicit*" on this point: but is not this exactly the absurdity I complained of? It is notorious that Dr. Meyrick was compelled by the persons then in authority to make this compromise with historical fact. But do not the banners still hang beside the suits with the names of Henry VI. Edward IV. Henry VII. Edward Clinton, Earl of Lincoln, "Edward VI." "Francis Hastings, Earl of Huntingdon," "Sir Henry Lea," "Robert Devereux, Earl of Essex," "James I. King of England," "Sir Horace Vere," "Thomas Howard, Earl of Arundel," "George Villiers, Duke of Buckingham," and "Thomas Woodstock, Earl of Stafford?" and does not the "*explicit*" warning in the later guide-books, so amusingly insisted upon by Mr. Hewitt, *corroborate* my assertion, that "there is indeed a guide to the armoury, published and sold by authority, in the Tower, which tells you you are *not to believe what is written up!*" I asked, then, if absurdity could be carried farther? I am sorry that Mr. Hewitt, blinded by passion, should have supplied me with evidence that it can. *I* am not in a passion. I have not descended to abuse any individual. I stand by no means alone in my unshaken opinion of want of proper judgment and discretion in those who have the authority to expend money collected from the public for the instruction of that public. I charge no officer with dishonesty, but I do contend there is "extraordinary caprice" in selection and absurdity in exhibition. They "strain at gnats and swallow camels." Had I mentioned Mr. Hewitt's name, as that indiscreet "Beef-eater" did (poor fellow! I trust he will not be discovered, for I can sympathise with his feelings), I should have mentioned it with the courtesy due to him as a gentleman and an antiquary, however I might have thought him mistaken. When he exhibited the Burgonet, he believed in it. He does still. I do not. Where is the offence? He might not then have known it was suspected. If he had, it would have been safer, perhaps, to have alluded to the circumstance; and very probably he did so, though it

might not have been thought necessary to print what he said *in extenso*.

I *think* I have heard that Mr. Hewitt has felt and expressed himself strongly as to the necessity of a reform at the Tower in this department, and by his own account he has taken some trouble in the matter, has been at some expense, has saved the authorities from committing some sad blunders, and appears to be absolutely beset by "forgery acquaintance;" but as he speaks of *charity*, let me entreat him to exercise it towards those clever foreign artists he is so angry with me for complimenting. As far as I have been able to learn, the armour made by the two persons I have named is *not* fabricated for fraud; but for the express purposes I have mentioned, and I do not believe that either of those respectable manufacturers would palm off one of their imitations as genuine. What others do, into whose hands they fall, is another affair. I will go further. I will say that I should have no objection to see, in our national armoury, even "the Winged Burgonet," if bought at its real worth and *labelled* (not described in guide-books, which you may not buy, or by a warder who knows nothing about it), but labelled as a model from such or such an existing specimen, till its place could be supplied by an original one of the same period, as we have casts of the "Venus" or the "Apollo" and other antiquities we are not so happy as to possess. In conclusion, let me have the pleasure of agreeing with Mr. Hewitt on one point at least; the propriety of punishing those who knowingly attempt to dupe either individuals or public bodies. "Fiat justitia ruat cœlum:" and with this old "trial by battle" cry, notwithstanding Mr. Hewitt's polite invitation, I keep the vizor of my helmet closed, and with unshivered lance in rest, remain your anonymous correspondent, "A."

That all parties may have a fair hearing, we append the following letter from Mr. Falcke:—

"In an article headed 'Tower Armories,' in your valuable journal of the 5th inst. I find my name connected with a Burgonet which I sold to the Tower authorities, and in which article Mr. Hewitt, in his vituperation against all agents and dealers, has forgotten to place the onus (if any) in the proper quarter. The facts are simply as follow: the Burgonet in question was some months since consigned to me for sale, and on receiving it I took it to the Tower, and was requested to leave it for inspection, which I did for ten days, at the expiration of which time I was desired to forward a receipt for 20*l.* the price charged. I called personally at the Tower, and was questioned as to its genuineness, and I then distinctly stated that I could give no opinion on the matter, leaving it open for discussion to abler judges than I profess to be. Mr. Hewitt states he did not see it until after it was purchased, and, had he done so, he would not have given an unfavourable opinion of it, as is clearly shown by his having had it engraved in the pages of the *Archæological Journal* for October, 1852, and in which he writes a long and elaborate article on the subject. Your anonymous correspondent intimates that it is spurious, which Mr. Hewitt seems to doubt, therefore the question is to be settled by your correspondent and Mr. Hewitt, and not by your correspondent and myself, as Mr. Hewitt suggests; as in truth I never *gave* any opinion in the matter, and, consequently, should the Burgonet eventually prove false, no blame can be imputed to me. "Edward Falcke."

So much for the Burgonet.

When we went through the collection a few days ago, the "Norman Crusader" was duly exhibited, and with unusual emphasis, and there stood the various equestrian figures, each with a lie above it. Meyrick, when he undertook the arrangement, destroyed a long line of kings, but he was forced to put up names just as false. One part of the collection used to be called the Spanish Armoury, though there was nothing Spanish in it but a collar of torture; but we were gratified, when we asked for it, to hear the explicit beef-eater, who had just been pointing out "the axe that *were* used" on a certain occasion, and the dark hole in the wall "where Sir Walter Raleigh *were* shut up" we don't remember how many years (!), indignantly deny the existence of any such title *now*.

As to the admitted falsifications and misstatements, we do hope that the new Constable of the Tower, acting on the simple commercial axiom that a known error should never be suffered to exist, will give directions for an immediate alteration in this respect, and commit to safe custody any who may refuse to comply, as guilty of high treason against truth, common sense, and progress.

There are other government departments besides the Tower which require looking into, and will have a visit from us before long.

THE ROYAL ACADEMY LECTURES ON ARCHITECTURE.

Professor Cockerell commenced his fourth lecture by enforcing the value and authority of ancient models, as affording the best patterns and illustrations for modern practice. It was not likely, he observed, that in modern times architecture would again assume its ancient splendour and importance; and therefore, as had been said by Wren, the pursuit of this art was rather the study of antiquity than of fancy. The elements of the prevailing forms referred to in the last lecture as the basis of Greek, Roman, and mediæval architecture, should be carefully studied, as indicating the modes and materials in which each of these styles should now be reproduced; and beyond them it might not be possible to speculate. Irrespective, however, of the elements of form—the angular, the circular, and the square—there were other natural and fundamental principles, common to all styles. Amongst these might be mentioned order and distribution; symmetry, proportion, and economy; and to a consideration of these essential principles, as illustrated by ancient and modern practice, the present lecture would be devoted.

The visible *order* in the works of the architect was but the image and result of the natural and moral order everywhere visible in the works of creation. Order was the quality first looked for in every work of art; and in its union with beauty, the superiority, the wisdom, and the taste of the master mind were strikingly displayed. At first sight nothing could appear more remote from nature than the artificial art of architecture. Except in the avenue planted by the hand of man, trees were never found disposed with regularity: rocks and other natural objects were apparently irregular in form and disposition; and, except in organic productions, that order which distinguished all the works of nature was only to be traced by careful study. In architecture, however, this quality was most essential. Its importance had been recognised in all ages, and was exemplified in the arrangement of columns, arches, windows, triglyphs, mutules, and dentils, and the subdivision of buildings into parts and bays. In mediæval works this system of subdivision and series was an essential feature, and it was exemplified also alike in ancient edifices, in the designs of Palladio and Vignola, in the Indian buildings represented in the views of Messrs. Daniell, and especially in the works of Sir C. Wren. In St. Paul's Cathedral, in his works at Winchester, and in the hospitals of Chelsea and Greenwich, that great architect had displayed not only his regard for this principle of order, but the highest artistic and constructive skill. So perfect, indeed, were the elevations of Greenwich Hospital, the arrangement of its colonnades, and indeed its entire composition, that it was surprising that it should be so seldom noticed. A repetition of the same form, whether column, arch, or window, in an architectural composition, was an element of the sublime. Some, however, regarding this source of order as at variance with the principle of variety, had not the courage to adopt it. In the baths of Diocletian and other ancient edifices, the arcade and the colonnade were alternately introduced in the same elevation, with much less effect than would have been produced by either of them alone; and in the Town-hall and the Theatre of Ghent, recently erected [from the designs of *M. Roelandt*], an unpleasant effect arose from the introduction of lofty windows at intervals, in a range of smaller ones. In the front of the National Debt Office in the Old Jewry each alternate arch on the ground-floor rose higher than the others; the effect of order being thereby materially impaired. The designs by Inigo Jones, however, for the Palace at Whitehall, furnished an admirable illustration of the necessary union of order and variety. Order and series, therefore, were amongst the highest elements of architecture; and an irregular and picturesque style, however adapted to domestic buildings, villas, cottages, and lodges, could never produce dignity.

Symmetry might be defined both as balance or parity of parts, and as perfection of proportion. In its first definition it was connected with order and distribution; and certainly a general symmetry of form should never be neglected. In the church of S. Sulpice, at Paris, the two towers presented a symmetry in bulk and quantity one with the other, but not in form. The defence of this variation was, that the use of two towers exactly alike, in any but a cathedral or metropolitan church, was not canonical; but this defence was in itself a confession of error and an apology for it. *Pseudo-symmetry*, or the general appearance of symmetry, with variety in the details, was often seen in Egyptian temples, where the capitals of the columns were greatly diversified, although their general form and arrangement was symmetrical; and it was evident that the Ionic columns of the temple at Ephesus were also varied, because two Greek sculptors were recorded to have introduced figures of the frog and the lizard upon the capitals, as symbols of their own names. Where this license was used with skill, the result was satisfactory and delightful; but it should be so managed as to escape notice on a general inspection. In considering the second sense of symmetry,—perfection of proportion, or commensuration,—Professor Cockerell referred to the application of that principle to the ground plans of buildings, especially those in the mediæval style. Most edifices of this class were found to be arranged iconographically upon the basis of some simple geometrical form; and the system of placing the columns, &c. at the angles of squares of equal size was forcibly illustrated by referring to the plans of Romsey Abbey Church, Milan Cathedral, the chapels of Winchester College, and New College, Oxford, as well as in the church of San Salvatore, at Venice, and other Lombard edifices, in which, whilst the principle was retained, a beautiful effect was produced by the omission of alternate columns. The adoption of this system gave a peculiar charm to mediæval architecture; and the effect produced by the grove of pillars so arranged in Milan Cathedral, was infinitely superior to the arrangement of the Roman basilicas. A French author, either ignorant of, or purposely not alluding to, its existence in mediæval times, had projected this system; but he had erred in suggesting its application to external forms also; because if the external columns were similar in scale and arrangement to those of the interior, the former would suffer in apparent magnitude. Thus the uninitiated were often deceived by the greater apparent size of the columns in the interior of St Paul's, when compared with the lower external order; although, in fact, the size of both was alike. Attempts had been made by Cicognara and others to show the existence of a system of orthographic commensuration, or a regular scale of subdivisions applied to elevations as well as to ground plans, but with imperfect success; and, although it was desirable to know these theories and systems, they should not be too rigidly adopted. Even as applied to ground plans, which they unquestionably were by mediæval architects, there was often some difficulty and variation in the system,—the external walls being sometimes included in the measurement, and in other cases excluded.

Proportion might be considered first, as denoting general harmony; secondly, in connection with fitness and character; and thirdly, as attaining magnitude and dignity. This quality was to be felt rather than described: it was a mystery only possessed by the really gifted artist, and not to be explained by diagrams or

drawings. Inequality, however, might be mentioned as one of its prominent elements. Thus, the superiority of the man, the horse, and the profile of the Apollo, over the monkey, the ass, and the head of a satyr, might be traced to the equality of parts in the latter, and to the subtle inequalities of subdivision and subordination in those of the former; and hence, a graceful inequality and delicate gradation in the component parts of an edifice tended to its perfection of proportion. This quality might be noticed alike in Grecian, Roman, Mediæval, and Saracenic buildings. Secondly, in connection with fitness and character, the proportions of different buildings required to be regulated; and they might be made either short, rugged, and robust,—tall, ornamental, and purely graceful,—or in such a medium as should unite both dignity and grace. Of the majesty of short thick columns and quadrate openings, the church of St. Paul, Covent-garden, was an excellent illustration; and other proofs of it were presented by the excavated temples of India and Egypt. The hall of Buckingham Palace showed the neglect of this principle, slender Corinthian columns being employed, whereas the hall was spacious, but not lofty.

As an illustration of the skill of the mediæval architects in the management of tall and elegant proportions, Professor Cockerell referred especially to a view of the tower of Mechlin Cathedral, with the spire, as originally designed, intended to have been the loftiest building in the world. Lastly, proportion should be studied as giving the idea of magnitude and dignity. The true artist would seek to dignify even the smallest object; and Statius referred to a bronze figure of Hercules, which, although it might be held in the hand, had all the grandeur of a colossal figure. The painter and engraver, within very small limits, were able to convey the idea of immense size and space; and the architect, though his means were more restricted, should aim at the same result.

Besides the principles already mentioned, greatness of conception and of idea, grandeur of distribution, and elegance of form, were necessary to the production of great architectural works. These qualities might be approached by the patient contemplation of nature and art; and if the student should not be enabled to put them into execution, the happiness of his existence would at least be enhanced by their study and observation.

NOTES ON FRENCH BUILDINGS,

PRINCIPALLY ECCLESIASTICAL.*

ORLEANS.—The city of Orleans is not distinguished by antiquarian interest or architectural beauty to the extent which its importance as a town and the stirring events connected with its history might induce one to expect. The leading thoroughfares are modern. The most recently constructed street leading up to the west front of the cathedral is well built and handsome. The houses in the older streets are destitute both of the picturesque effect of the mediæval buildings and of the more finished and regular style of modern architecture. The Mairie, now in course of restoration, is rather a pleasing building of red brick with white stone facings in the Early Renaissance style. The double staircase and carved balustrade leading to the principal entrance is elegant in design. In front is placed the celebrated statue of the Maid of Orleans, executed by the Princess Marie, daughter of Louis Philippe, decidedly the best impersonation of the ideal Joan of Arc which has ever been produced.

The cathedral of Orleans has a singular history. The ancient edifice was destroyed during the wars of the League in the sixteenth century. The present building was commenced by Henry IV. early in the seventeenth century, a period when the appreciation of mediæval architecture is generally supposed to have descended to the lowest point. It has been carried on from time to time at subsequent periods down to the middle of the last century. The result is, on the whole, very much superior to what might have been expected. The plan, general arrangement, and the outlines of the exterior follow the usual model of the larger French cathedrals, viz. the plan a Latin cross with apsidal east end, the west end terminating in three enriched portals with lofty flanking towers. The pyramidal form is well preserved in the buttresses and staging of the towers. The building consequently masses well when seen from a distance. Viewed from any point, there is an air of grandeur about the building which is only partially affected when it comes to be criticised in detail. Much of the richness, when closely examined, appears in bad taste. Heavy horizontal cornices supported by slender columns on pedestals, fantastic parapets, broad flat bands of ornament stuck, as it were, on the walls, and not arising as in genuine Gothic work, out of the construction. These, and other such anomalies, detract much from the purity of what would otherwise be a beautiful work of art. Internally the detail displays a meagreness and insipidity which jars on the eye accustomed to the delicate adjustment of the parts in genuine work. The great size of the clerestory-windows gives a lightness and elegance to the interior, which excuses many defects. On the whole, much merit is due to the architects of the structure. Struggling, as they must have done, in the dark, so to speak—feeling their way without adequate guidance to the great principles of the style they adopted, the marvel is, that they succeeded so well. What might they not have accomplished with the light and knowledge of the present day?

The "*flèche*" or wooden enriched spire at the intersection of the nave and transepts has recently given way, and hangs over to the south in a manner threatening danger to the roof.

At the small town of Etampes, between Orleans and Paris, there is a fine original Norman tower and spire, in beautiful preservation. The tower is square, with ranges of round-headed openings, terminating in four octagonal open-work pinnacles at the corners, and an octagonal spire in the middle.

CHARTRES.—The town of Chartres, though ancient, and presenting a few picturesque remains of antiquity, is not sufficiently remarkable to be worthy of special notice, except on account of its cathedral, deservedly ranked amongst the finest in France. Its great dimensions, its lofty proportions, the grand and severe character of its interior, and the fine effect of its west front, fully bear out its claims to distinction. The earliest part of the present edifice appears to be of late twelfth-century work, from which time until the latter half of the thirteenth century, the building seems to have progressed. The triple portals on the north and south sides are very fine and rich. The dimensions tell with powerful effect, the centre openings being about forty feet high, thirty feet wide, and recessed back about eighteen feet. The effect is produced by ranges of statues, filling the jambs and archivolts with intervening panelling and enriched pedestals.

The west front is bold and aspiring, but severe in its character. The body of the work is late twelfth-century work, with interpolations of later date. The portals are very rich, but the sculptures are lank and meagre in their proportions, very inferior to those of the north and south fronts. The south-west spire is original. The north-west tower and spire from the battlement upward are of the date of 1514. It is peculiarly light and graceful in its design, looking like a coronal of rich tabernacle work. The interior is remarkable for its great height, magnificent proportions, and general completeness. The centre aisle is 112 feet in height: the clerestory windows have geometrical plate tracery, with arcaded triforium below. The choir has double aisles and multangular apsis. The west end and the two transepts have very large rose windows with geometrical plate tracery. These and the other windows are filled with fine stained glass of thirteenth century date, the deep hues of which, though they impart a degree of dimness to the interior, produce a surpassing effect of solemn richness almost approaching to gloomy grandeur. The choir is separated from the aisles by stone screen-work of late fifteenth or early sixteenth century character, though some is of later date. The whole is very rich and beautifully executed. It consists of panelling partly open, flanked by buttresses, with statues and canopies to the height of about 9 feet. Above this there is a flat shelf, divided into compartments by the buttresses, which are carried up to the summit and terminated by angels playing musical instruments. The interspaces are filled in with groups of statuary quite detached and open through, representing scenes in sacred history and domestic life. A groined roof, faced by rich tabernacle work, completes the whole. The style of the sculpture is not unlike that of the Percy shrine at Beverley Minster. The completion of this screen was carried far down into the seventeenth century. It is unique in character and surpassingly beautiful. On the choir side, the screen is masked by marble panelling, in the style of Louis XIII. The wrought-iron gilded gates are beautiful in themselves, but out of keeping with the building.

Between Chartres and Paris occurs the little town of Maintenon, the chateau of which, formerly the residence of the celebrated Madame de Maintenon, is a good specimen of the old French chateau, a combination of plain façades with high-pitched roofs and *lucarnes*, with towers of all shapes, square, octangular, and round, and of every size, from a sentry-box to a donjon keep. The effect of such a combination of forms, mostly of an aspiring character, is pleasing, and perhaps, is best expressed by the term picturesque.

I spent a day at *Amiens* on my return, to enjoy a few hours' gazing at its glorious cathedral. This has been so frequently described as to render its beauties quite familiar to every admirer of mediæval art. Any attempt at description would be unpardonable. Notwithstanding the vast proportions of its interior, its unbroken perspective of 440 feet, and its height of 140 feet under the vaulting, the prevailing character which is conveyed to the mind of the spectator is that of elegance. Gracefulness, lightness, buoyancy, meet the eye everywhere. The large size of the windows and the glazing of the triforium add to this effect. The screen and tabernacle-work of the choir carry this sense of elegance and lightness to its culminating point.

Externally, the aspect of the building is heavier, though very rich. This feeling is redeemed, and the aspiring character fully maintained, by the marvellous beauty and delicacy of the central *flèche* or *chevet* at the intersection of the cross, which shoots up into the sky as an elegant flower rises from its parent stem, embodying within itself the perfection of those elements of design of which the plant presents only the indications.

The possession of noble piles like these, the combined results of the piety, liberality, genius, skill, and taste of ages gone by, entails upon succeeding generations a serious amount of responsibility, in scrupulously preserving them from injury, and handing down their beauties intact and unimpaired to generations yet to come. It is pleasing to find that duty so well performed as in the present instance. The exterior is undergoing careful revision and scrupulous restoration, regardless of expense.

On the whole subject, the architecture of France, both ancient and modern, is worthy of very careful examination by the English student of the art. As it regards the ancient, the examples are more numerous, larger in their dimensions, and more completely carried out in their designs than the average of our English specimens. At the time when Rickman wrote his invaluable work on Gothic architecture, the continent was closed to English travellers. The error was, in consequence unwittingly propagated, that mediæval architecture is only found in its purity and simplicity in this country, the continental architecture being supposed to be invariably debased by a mixture greater or less of Italian design or detail. Accordingly, the term "English," *par excellence*, was complacently adopted as the appellation of the style. This notion, which subsequent observation has found to be altogether erroneous, has been unfortunate in its effects. Whilst our own country has been ransacked in every direction by zealous archæologists, and scarcely a specimen, however poor and worthless, remains unchronicled or unappropriated, a rich profusion of beautiful buildings lies within a few hours' travel, almost unexplored. There are undoubt-

* See p 84, ante.

edly diversities in the French mediæval architecture as compared with our own, but they are rather different adaptations of the same school of art than differences in principles or details. These very diversities in fact become the most instructive studies, showing the infinite combinations and modes of development of which the same leading features are capable. The Perpendicular style, for instance, is unknown in France, at least in its later division. Its place is supplied by the Flamboyant, which I think few will deny is every way more in accordance with the *feeling* of the Gothic period than the rigid lines and endless repetition of panelling, characteristic of the English variety.

The modern architecture of the French school will be found worthy of attentive study, sometimes for the boldness of its construction, sometimes for the excellence of its plan, at other times for the originality of design, and almost always for carefulness of study, whether the result be satisfactory or not. To the true student of art, light is welcome from whatever source it proceeds. Coloured though it may be by the prejudices and peculiarities of the medium through which it passes, yet when combined by the hand of taste and judgment, it imparts to every human work that crowning grace which knowledge and variety of resource alone can give.

J. A. Picton.

ON ORNAMENT AND ARCHITECTURAL BOTANY.*

It is a well-known fact, that if a building be ever so well conceived and skilfully designed in the mass, if it be not also attentively, carefully, and artistically treated in its minor details and ornamentation, the good effect of the whole will be destroyed. On the other hand, if decoration usurp the place of utility and construction—if, as has been said, "we construct ornament rather than ornament construction,"—the position of architecture becomes thoroughly degraded, our buildings only a means of displaying our overcrowded fancies—to be likened to nothing but the huddled together specimens arranged in a plasterer's shop. What, then, can form a more important study than the proper use and nature of ornament? Although in itself secondary to design and construction, yet the whole position of our art depends upon it. There is nothing which adds such grace and beauty to architecture as true ornamentation; nothing which will so raise the standard of architecture and lift it from its present degraded position, if it be properly cultivated. Above all, it *must* be kept in its proper place, which is secondary to design and construction. Design includes ornamentation; and in ornamentation there must be design; but as a work may be perfect without ornamentation, it follows that it is distinct from the design and construction of the building: this precedes its ornamentation, therefore it must hold a secondary place, and should never occupy the principal one.

Now, at the Great Exhibition of 1851, nothing was so glaring as the total reversal of this order: everything had to give place to ornament. Furniture was literally masked and covered by great carved boughs and bouquets of wooden flowers.

Ornament should possess fitness of purpose, and produce harmonious contrasts; be arranged with simplicity and in perfect repose with the general features of the design. It should never be introduced in such abundance as to produce a crowded or overloaded appearance. It should assist the architecture, and not overpower it. In the ornament itself, it should contain beautiful form, pleasing lines, and a sparkling arrangement of light and shade.

I have before now endeavoured to point out the beauty and great variety of form that exist in nature, more especially as exemplified in the forms of leaves. I am not now going again into the infinity of exquisite forms to be found in nature, where

> —— "not a beauty blows,
> And not an opening blossom breathes in vain,"

but intend, as far as I am able, to consider the subject of architectural ornament and foliage itself, and the manner of rendering it from nature.

* Extracted from a paper read at an ordinary meeting of the Architectural Association, January 14.

Taking, then, ornamentation generally into consideration, we find that there are several different kinds, each kind requiring to be treated in a distinct manner: although, perhaps, there can be no definite line drawn between them, yet for the purpose of studying the subject, it will be as well to endeavour to classify them in some kind of order. We have, then, in some cases, ornaments introduced at regular intervals, producing a constant repetition of the same points of light and shade: of this character are ornamented mouldings, as the dog-tooth, ball-flower, and most of the ornamented mouldings in classic architecture. The simple principle is most clearly seen in rows of dentils, but it is often, however, much modified by curvature and alteration of surface. This may be considered, perhaps, the most simple mode of decoration. Another mode is that of enriching plain surfaces; the type of which may be seen in the diaper wall-work of Westminster Abbey, and in the various modes of simply enriching plain surfaces by painted decoration. It consists, in sculpture, of a repetition of the same form, which must be quiet and subdued in character, its purpose being to enrich without detraction from the more prominent parts, or interfering with the flatness of the wall surface. It serves to heighten the effect of the whole: it must be the judicious background to the picture. A third mode is that of enriching plain surfaces, but of much more limited extent than the last. It is also usually bounded by symmetrical and agreeable lines, will admit of much higher relief than the last, still, however, possessing a consistency for flatness, which is the character of the object it is employed to decorate. The same general design may be extended over the whole surface, giving more scope to design in the ornament itself, consequently requiring greater caution in its use. Of this character may be classed spandrils, panels, friezes, bas-reliefs, and the like. The fourth and last division is that of applying bunches or knobs of ornament, for the purpose of terminations or intersections, or letting the outline of the part itself tell against a background, or against the sky, as in the case of bosses, crockets, finials, capitals, statues, vases, &c. These four divisions may be termed—

1st. Enriched mouldings.
2nd. Enriched surfaces.
3rd. Enriched panels or lesser surfaces, and
4th. Enriched separate features.

These four divisions are not, as I have said, always distinct one from the other, but are so sufficiently for the purpose. Having thus slightly noticed the various modes of using foliated ornament, and when we further consider that in all styles, even the most barbarous, where it has been in any way developed, foliation has always possessed great beauty, we may naturally ask for the cause. It has not been by copying one from the other. It has evidently been by going to that inexhaustible source—the fountain head—Nature. Nature, from time immemorial, has supplied the artists of every clime with elegant and graceful forms. That source is inexhaustible; it is now equally open to us as it was to the Greeks, the Romans, or the Goths. There is beauty in every hedge, in every plant,—

> "There's beauty all around our paths, if but our watchful eyes
> Can trace it midst familiar things, and thro' their lowly guise."

We also have a great advantage over the artists of former times, in the facility we have of studying the luxuriant foliage of tropical climates.

I would now say a few words on the conventional and abstract manner of rendering nature for the purpose of ornamentation. It is extremely difficult to lay down any rule to say how far nature should be followed, or how far it should not. One thing, however, is certain,—mere imitations, or exact copies of nature, however beautifully wrought or faithfully represented, will not therefore become architectural ornament. Carving must not look like petrifactions of nature, laid and placed about in the manner you would decorate a triumphal arch with natural branches and flowers. It must be made a *part of* the architecture; there must be thought, artistic arrangement, and design. On the other hand, I must contend that foliage is all the more beautiful, and that we obtain a greater variety of elegant forms, if the *principles* of nature are, to a considerable extent, closely followed. Much must be left to the artist; he must know when to stay his hand in his imitations, and when to launch into conventionalism. Ornament should always be designed for the probable distance from which it will be seen. That which is to be placed near the eye may be delicate and minute in its divisions, but that which is to be placed at a considerable height must be arranged simply, with few parts, having particular regard to distinctness in the masses of light and shade.

In every design for ornament there should be a certain consistency running throughout the whole. If nature be departed from in one portion it should never be too closely followed in another. As the arrangement is usually obliged to be conventional, so the leaves, in which, if I may so describe it, the arrangement is clothed, must also be conventional. We should take the spirit and feeling more than the literal form—the broad and general character, not the minute or insignificant. It should be arranged either in a geometrical manner, or in graceful, flowing lines,—or in a manner combining the two. Nature may be sometimes seen to be very geometric and regular. The house-leek grows with extraordinary regularity. The flower of the woody nightshade is a perfect five-pointed star. The pentagonal form is very exact again in the flower of the major convolvulus. The cruciform character is prettily developed in the insignificant flower of the willow-herb, and in the common single stock. The triangular in the lily and snowdrop; the leaflets of the clover and oxalis, or wood-sorrel. The symmetrical in the mistletoe. It may be seen again in the manner in which leaves grow around a stem. The maple grows with great regularity in a cruciform manner, and probably suggested the design of many a boss centuries ago. I have a distinct recollection at this moment of some beautiful maple-leaf bosses in the groining of the Chapter House of Wells Cathedral, which were arranged in this manner,—four maple leaves issuing from the centre.

In old examples, we constantly find such arrangements, or others of a like nature, taken advantage of. Bosses upon the square, in the Perpendicular period, are very common; as also, in diapers and finials of the Decorated period, where one series of foliage is made to alternate with the next, as foliage always grows in nature. In flowing lines nature also presents a wonderful variety, but in a paper of this kind it is impossible to do more than just touch upon these matters. If, however, it serves to show you the importance, as well as the great charm in the study, my object will have been fully accomplished.

There can be no denying that we are, in the present day, very much behind our forefathers in all the arts of decoration. Even India, a nation which we consider uncivilized, sent carvings to our Great Exhibition of 1851, which ought to put us to shame.

James K. Colling.

MOTIVE POWER.

"STEAM SUPERSEDED."

Since the paragraph headed "Electro-Magnetism as a Motive Power" appeared in our columns of the 1st ult. we have had many requests for more information as to the machine referred to by the writer of the paragraph. It must be well known to many of our readers, that inventors have in general good reasons for refusing to be very explicit in describing new and unpatented inventions. The same reasons must necessarily limit the responsibility of what is alleged as to such inventions to the proprietor himself. We know nothing personally of the invention referred to by our correspondent "H. P." who is a working man. On being urged to be a little more explicit, he writes, as to his electro-magnetic invention,—"I can only with safety say, it differs from all others in this respect, that the currents are always in one direction, acting upon a lever magnet, producing direct rotary motion, requiring neither beam, crank, fly-wheel, pinion, nor piston-rod: there is no momentum to check, or

current to break or change." By inference he makes the following comparison between his own invention and that of Professor Page:—"In Professor Page's engine, which, I believe, is considered one of the most effective and simply-constructed engines, the loss of power in checking and altering the direction of the piston-rod must be very great, it being well understood that time is required for the magnet (the piston-rod in this engine) to receive the magnetism of the coil, and time for it to part with its induced magnetism: hence such engines act with a retarded instead of a constantly accelerated motion."

In a previous communication, pointing out two errors in printing, which originated in the illegibility of his previous manuscript, namely, "cranes" for "cranks," and "steam-compressed air" for "steam or compressed air," he says:—"Perhaps your readers would better understand my meaning if I state that I obtain direct rotary motion, and that the two wheels mentioned are merely for the purpose of regulating the current."

There appears to be a very general impression that electro-magnetic power *will* yet "supersede steam," *in certain cases* where, even though it were otherwise less economical, it would obviate the lumbering adjuncts of steam, or its danger. The *Mechanics' Magazine* of 8th ult. states that "Mr. Thomas Allan, of Edinburgh, the author of several ingenious applications of electricity to philosophical purposes, has succeeded in producing an electro-magnetic machine in which a great amount of power is created at a small cost of materials for the battery." Hitherto, as remarked, "every application that has been put to a practical trial has been at variance either with the laws of electricity or mechanics; and hence a waste of 80 or 90 per cent. of the power used, rendering it impossible on such principles to form an engine on a large scale to act proportionately to a small one. In the plan now proposed by Mr. Allan, that waste is entirely obviated: the whole power of the current and of the battery consumption being applied to the machinery on the direct-action principle, any amount of power and any length of stroke can be obtained."

In connection with this subject, we may here state that the communication signed "R. R." which we inserted on the 22nd ult. under the title "Steam not Superseded," has also brought us a number of subsequent letters, uniformly crating us, as if we were identified in opinion with the writer; whereas, although we believe here is a good deal of truth in what he says, we do not and cannot essentially agree with him in his obstructive denunciations of all attempts to 'supersede steam." "R. R." is correct in saying that "there is a limit to improvement;" but to rest in the belief that we have already reached that limit, implies that we have already examined and exhausted all the powers and possibilities of nature, whereas we know comparatively little about these possibilities and powers as yet. "R. R." speaks of the idea that some "new machine" may "supersede steam." The real question at issue, however, is, whether or not some new power may supersede that of steam. Moreover, he talks of steam having superseded horses, and of Nature remorselessly demanding an equivalent,—that she is not to be tricked out of her *quid pro quo*. Now steam superseded water power, and the power of wind, no less than that of horses; and although horses demanded an equivalent, what equivalent did water power or wind power demand? Nature, in these instances at least, supplied her own equivalent: she raised the water by the power of her own heat, and also set her own wind aworking. No feeding, whether by fuel or by corn, was needed here. The *progress*, then, has not been in this case from that demanded an equivalent to what did not, but the very contrary: man found it convenient to reverse this order of procedure. He sought and found a power which Nature would only yield in return for a *quid pro quo*, and yet in that power he found an advantage beyond that of powers which Nature offered without any such equivalent. It is erroneous, then, to speak of Nature's demand of an equivalent (from man at least) as an unexceptional law; and even though inventors were seeking for a power requiring no equivalent, which cannot be admitted, whatever mere perpetual-motion seekers and machine-mad maniacs may be doing in vain endeavours to "supersede steam" by some "new machine,"—"R. R." is wrong in laying down the dictum so unconditionally that no such power exists. It does exist, as elsewhere ("friction," notwithstanding), in wind and water power, the power of waves in the ocean inclusive,—nay, Faraday has given us a glimpse of such a power in the earth's magnetism, and for all we know a power requiring *from us* no full equivalent may even yet be found in the electric forces by which Nature is pervaded. But, as we have said, inventors really do not seek such a power: they are willing to hand over the equivalent to dame Nature,—out of her own pocket, under the rose,—for all they want is a more convenient, a more profitable, a more safe, or a more easily and simply acquired power than that of steam; and we do think it is highly probable that they will obtain it too.

"H. P." of course, replied to "R. R." and here is the pith of what he says:—"Our steam champion states that to work a magnetic engine would be forty-three times as expensive as steam: he has looked through his magnifying glass while considering this item, besides the unfairness of contrasting the present imperfect magnetic engines with the perfected steam engine. Still, at the end of his article, he reduces the ratio from forty-three times to ten in general practical engines. Now, as by my principle of applying the force, I can avail myself of ten times the working power of present magnetic engines (not by cheating Nature, but by observing and following her more closely), the expense of consumption, upon 'R. R.'s' own showing, would be no more in the one case than the other. But it has already been found that by using tin and muriatic acid a valuable compound is formed, used by calico-printers, dyers, &c.; and foreign chemists will teach us, if our own neglect to do so, that, in generating magnetic force with other materials, compounds alike valuable would be produced, which, being preserved, would become articles of commerce, lessening still further the cost of motive power, while 'R. R.'s' consumed coal would produce only smoke not worth the trouble of collecting. 'R. R.' entirely loses sight of that which is of more importance than economy, the increased amount of public safety, as magnetic engines do not explode; while, in the moment of danger at sea, we have the means of instantaneously producing a light unrivalled for its brilliancy, which neither wind nor wave can extinguish. Nor is it required to freight a vessel with many tons' weight of materials for consumption, besides replenishing abroad at a much dearer rate, as a few gallons of acid and a small quantity of metal will suffice for the longest voyages. Gaining, by this means and the smaller space required for engine, much more room for cargo, there is yet a still further saving in the small cost of keeping a magnetic engine in repair compared with the enormous expense of wear and tear in steam engines, particularly marine engines, to say nothing of the smaller cost of original construction.—H. P."

OXFORD ARCHITECTURAL SOCIETY.

On the 2nd inst. a meeting of the Oxford Architectural Society was held at the Society's room, the Principal of Brasenose College, president, in the chair. Among the presents there was a very valuable edition of Loggan's "Views of Oxford," presented by Mr. F. Symonds.

Mr. E. G. Bruton, architect, then read a paper "On the Causes of the Changes in Detail, and Want of Consistency in Design, apparent in some Examples of Gothic Architecture." The paper, after glancing at the anachronisms which exist between the various details in the admixture of the several styles, proceeded to examine several examples of peculiar forms in the churches of Barnack, Moulton, Polebrook, &c. &c. in North Hants, which peculiarity, it is believed, had arisen from subsequent, although remote, carvings and mouldings, upon previously existing portions of the several buildings, more particularly during the Early Pointed era, and principally upon the massive forms which were very faintly and rudely sculptured by the early Normans. But that such alterations were not confined entirely to that period, the writer believed, and he stated, upon the authority of Professor Willis and Mr. Poole, that the alteration of the Norman nave of Winchester Cathedral by Bishop Edrington, was convincing proof of the same; where much of the Norman ashlar was by him chiselled anew, and where the core of the Norman walls still remains.

Mr. Parker referred to Canterbury Cathedral as illustrating in a remarkable manner the co-existence of several styles.

"ARCHITECTS BY INSPIRATION."

We should half fill our present number if we printed all the letters received under this heading, the large majority of them simply echoing the remarks of "Observer" (p. 70, *ante*). This, however, we decline to do. We have admitted the expression of an opinion very widely entertained, but are not disposed to carry the matter further in its personal application. The general question is another matter. Touching this, we give portions of two communications.

The case of an architect is altogether a different one from that of a manufacturer, who is well known to employ other persons to design the articles he deals in. All the credit he takes to himself is that of engaging the services of efficient assistants. An architect, on the contrary, is supposed to be the actual author of the designs which pass under his name; for although he too has his assistants, they serve him merely in the capacity of amanuenses and transcribers. Such aid is merely manual, and may be had recourse to, not only legitimately, but very beneficially also, inasmuch as relieved from the labour of preparing all his *drawings* with his own hands, the architect is enabled to bestow all the more diligent and careful study upon his *designs*. It is a very different matter when a man merely hands over to others a few vague notions and crude ideas for them to shape out and fill up; he himself being unable to do so. Such way of practising architecture by proxy may be one of the ingenious inventions and contrivances of the present age, but is certainly not particularly honourable.

In merely starting a valuable idea, or roughly hewing out an important scheme, to be carried into execution by others who possess the requisite practical knowledge and ability, there is, doubtless, no inconsiderable merit; and the praise to it may be both fairly claimed and cheerfully awarded.

The discussion of this question is likely to provoke some awkward inquiries on the part of the public. They may ask whether any others officiate as architects by proxy, or whether architectural practice be not, after all, so exceedingly simple, and require so little preparatory study, that it can be taken up at any time by any one who chooses to turn to it. Z.

Did Michelangelo ever receive an hour of regular education as an architect in his life? and yet he contrived to design and execute some very extraordinary works, amongst which is the most wonderfully constructed dome in the world. It surely did not require Inigo Jones twenty-four years of study to produce the beautiful façade at Whitehall, for the greatest portion of his early life was devoted to the painter's art, for which he was originally intended. Vanbrugh, also, in the midst of his dramatic studies, did not require many years to throw out his picturesque creations at Blenheim, Castle Howard, and Seaton Delaval. Sir Christopher Wren, it is well known, also devoted a very great portion of his time to astronomical, and other abstruse scientific pursuits, as well as architecture, and still had sufficient leisure to design and see carried out the most picturesque and harmonious Christian temple in the world, besides numbers of churches and other buildings; and, still further, the present writer is in personal communication with a man who has spent twenty-five years of his life at mechanical and commercial pursuits, and yet has had spare time to write more on architecture than three parts of the architects of the present day, and is enabled to criticise their works down to their most minute details,

be they in the style of the Assyrians, the Egyptians, Greeks, ancient Romans, or moderns; and this particular knowledge has been acquired in the midst of difficulties, and in conjunction with pursuits of the most opposite nature: so it would clearly appear, after all, that it does not require the amount of time that "Observer" imagines to acquire a sufficient knowledge of architecture so as to become eminent in the profession. The whole secret of the matter seems to lie in a very small compass, viz. that if a man possesses strong powers of a high order, to which he adds great industry and an untiring perseverance, he will unquestionably accomplish more in *ten years* than the man of mediocrity will if he were to labour incessantly until doomsday. R. A.

AN ARCHITECT IN SYDNEY.

The following extracts from a letter dated Sydney, Sept. 14, 1852, will interest some of our readers, anxious to know the real state of things in the land of promise:—

I arrived here Friday, July 9th, after a voyage of nearly four months, in perfect health, and not a little tamed. . . . . On July 9th we passed Botany Bay, and entered Port Jackson, dropping anchor at half-past two p.m. A pilot came off to us at Sydney Heads, and from him we learned of the gold fever still raging, and of our having beaten the *Phœnician* and *Asiatic*, both having started before us. . . . . The solicitor-general introduced me to Mr. Mort, the auctioneer, the George Robins of Sydney. I had a long interview with this gentleman, who said his office was more than full, or he would willingly engage me. He then asked me to walk out with him to Mr. Hilley, the architect, from whom I have since received the greatest kindness. Mr. Hilley offered me a berth to superintend some extensive buildings at Port Philip and Moreton Bay; to be a fortnight at each place, and to call at Sydney always on my road, the steamer always stopping there. I was to receive 7*l.* per week, and all my travelling expenses. I, of course, accepted his offer, and was approved of by the directors; but with all our united efforts, neither architect, builder, nor clerk of works can get men to work, now the gold-diggings are at hand. Ask a man to work at 9*s.* per day, he will laugh at you; consequently the works are postponed, and I have turned my attention to something else: I am now embarking in partnership with one of our cuddy passengers in a store at the Bingera gold-diggings, and intend working a claim. From what I hear from all quarters, Bingera will turn out as lucrative as Mount Alexander. At present the roads up the country are impassable, from the overflowing of the rivers. We intend taking the steamer to Morpeth, which leaves Sydney three times a week. Morpeth is about 120 miles from Sydney. The steamer is twelve hours in fair weather performing the passage. Bingera is then about 220 miles from Morpeth. We intend taking a large double and single tent, a couple of good horses, and, if possible, a light cart. There are a few inns on the road, but we intend encamping in the bush, and hobbling our horses for the night. Our stock will chiefly consist of flour, tobacco, tea, sugar, &c. Our goods will be conveyed from Maitland by a dray. The carriage at present from Bingera averages from 15*l.* to 20*l.* per ton. A dray will carry very little over two tons. The team consists of ten bullocks, and they perform the journey in from fourteen to twenty days: all depends upon the roads. The governor has sent the Rev. Mr. Clark, the geologist, to examine the soil, and many hundreds are now waiting the result of his report. It is the general opinion that gold is more or less dispersed in quartz, or in the white clay soil, all over Australia. It is no uncommon thing to see some of the lowest blackguards walking the streets of Sydney soon after their arrival from the diggings with massive gold pins, the heads of quartz stuck in their shirts, and massive gold rings upon their fingers. In very few instances does the gold do the fortunate diggers any good. The greater part of them take to drinking and gambling and soon become ruined, and off they start again. At Port Philip things are frightful. People are knocked down and robbed with perfect impunity in broad daylight, and not a few are murdered and shot. These occurrences are very seldom put in the public papers. People, however, have in a great measure to thank themselves for imprudence in drinking, or want of proper caution. Fire-arms are fetching an immense price: revolving pistols, which in London sell for two guineas, are fetching 10*l.*: Colt's revolvers fetch 30*l.* and now are not to be obtained. Boots are also very dear. Beef sells for 3d. per lb.; mutton, 1½d. per lb. Sydney, indeed, is a singular place: by far the greater part of the population are rogues and swindlers, and carry the very villain in their countenance: not all the water of Port Jackson can wash away the mark of Cain stamped on their foreheads. In Pitt-street stands a dashing chemist's shop, a few years since kept by Tawell, the Quaker, who was transported, made his fortune, returned to England, and was hanged at Aylesbury for murder. We have a race-course and a Hyde Park,—a piece of ground enclosed by an open fence: in the centre is a gravel walk planted with young trees, called by the people, "lovers' walk." The domain is a pretty place, planned and measured by Lady Macquarie with her own hands. The Botanical-gardens are very fine and are always open to the public. Every Tuesday afternoon the band plays in the domain: you may then see the governor mounted on horseback, accompanied by an aidecamp, with an orderly officer, well armed and mounted, following close at his heels. Rows of carriages, contain many of the fair sex, and not a few of them on horseback, to whom the governor is paying the greatest attention. Sir Charles Fitzroy is anything but popular. The quantity of animal food consumed daily is immense:—rump steaks and mutton chops for breakfast; roast beef or mutton for dinner, and steaks for tea. Suppers are seldom or never heard of. Drinking is carried on to an alarming extent: nothing can be done without it. Few can transact any business without a 'nobbler' or 'spider' of brandy. Intoxication is the crying sin of Sydney. Linendrapers are here without number, and sell everything in the shape of slops, and are doing a great deal of business. Drapers' assistants are much wanted. Australia is now wanting working men of all trades. They receive good wages: cabinet-makers get 3*l.* 3*s.* per week.

Professional men of all kinds stand a poor chance unless they bring a large capital to fall back on for two or three years. There are now about forty architects in the colony, and only two or three are really doing anything. We have not a few doctors, lawyers, and parsons: many have been and are now at the diggings. Patrons of the fine arts are very scarce. Some of our buildings are very creditable: many are out of all proportion and offend the eye. The legislative council are about sending to England for a design for a new Post-office: a premium of 500*l.* will be given for the approved design. The public buildings are principally of native stone, which works very well and is very durable. Slates are now sent from England for roofing. Our spring, as it is called, is nearly over: in the winter, geraniums and roses are in full bloom. The dust is an intolerable nuisance at times: thick clouds of fine white dust come sweeping down the streets, which is the signal for all doors and windows to be closed; and should you have the misfortune to be out at the time, you must turn your back and shut your eyes till it passes you, or you will be blinded. Mosquitoes and ants are also great pests. The climate is beautiful: the sky is like that of Italy, and the scenery not to be surpassed. The floods are very bad at the Turon diggings: many are returning. People, I am told, are leaving New Zealand in shoals for the diggings. Auckland is a poor place, and at the present moment nearly deserted: all that have the means to leave do so. We have many ships in our harbour at the present time, and are waiting for hands. I have known instances of sailors receiving 70*l.* for the run home: several men from the *Australian* have deserted: they have advertised for ten able seamen and firemen. The Protestants have a cathedral now building: it having already been in hand fifteen years or more; I will give them another fifty years to complete it: it now stands about twenty feet above the ground line: when I last passed it, only four masons were at work. We have a colonial architect. Sir Thomas Mitchell is the surveyor-general: he is now lying dangerously ill: he was to have gone to England last week by the ship *Roman Emperor*, but was far too ill to be removed: his son started without him. I see some of the London papers which have arrived at Melbourne up to June 10th, give a very exaggerated account about the people leaving for the diggings: they say that merchants' clerks have all left their employers, and that postmen cannot be obtained to carry out letters in Sydney. It is true the postmen and police struck for higher wages: very few of them have started for the diggings, having no money to take them there. Very few merchants' clerks have left for the diggings: vacancies in merchants' offices are very scarce. Female servants are very scarce and impertinent: many ladies are obliged to attend to their own cooking.

Mr. Wallace, the railway engineer, has just told me he has written to England for 500 men, Peto and Rendel to pick them. H.

AS TO THE CONSTRUCTIONAL LAWS OF MEDIÆVAL CHURCH ARCHITECTURE.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The following is a copy of the report of a committee appointed to inquire into Dr. Henszlmann's alleged discovery of the constructional laws of Mediæval Church Architecture:—

The committee appointed by the council of the Institute, on December 6th last, "To examine Dr. Henszlmann's communication of his system, and to report their opinion thereon," entered on the investigation fully impressed with the importance of any discovery which might afford satisfactory leading rules relative to harmonious proportions in architecture; and the committee have to record the evident desire of Dr. Henszlmann to court inquiry, and to afford every possible explanation of his system, which, by most laborious investigation, he has tested both geometrically and algebraically, by applying it to a great number of ancient buildings.*

The committee have to report that Dr. Henszlmann's system gives a scale organically derived from certain simple data, which latter he demonstrated to be generally applicable to the leading proportions of mediæval ecclesiastical buildings, and that he pointed out a number of very remarkable coincidences between the dimensions given by this scale and the actual measurements of existing buildings, many of which were laid before him by the committee, and which he had not before analysed.

These coincidences, in the opinion of the committee, show the importance of pursuing the investigation in connection with other buildings, and they are glad to learn that Dr. Henszlmann proposes to further test his system by applying it to the grand French cathedrals, which, they feel, should be thoroughly analysed, before a decided opinion can be pronounced upon any system relative to the proportion of Gothic architecture. The committee, therefore, specially recommend the investigation of the system to the architects of that country.

The committee cannot speak too highly of the great talent and patience of Dr. Henszlmann, and of the scientific and devoted way in which he is pursuing his inquiry; yet they cannot lose sight of the fact that the subject has occupied and is still occupying, the attention of many other men of science, who have severally brought forward systems which also present remarkable points of coincidence with existing buildings. They feel, therefore, it would be acting prematurely, if they were to do more than acknowledge and record the facts brought before them with

* Dr. Henszlmann laid before the committee drawings and the analyses of the following buildings:—

No. 1. Churches in Central Germany, date from tenth to the second half of the thirteenth century, in *Romanesque* style, with Gothic additions and alterations.
No. 2. Crypts of Churches.
No. 3. Churches and Crypt on the Lower Rhine.
No. 4. Ditto, *Transitional* style.
No. 10. Churches in Germany and Hungary, in the *Gothic* style.
No. 5. Church Towers.
No. 7. English Cathedrals.
No. 11. English Abbey Churches from Mr. Edmund Sharpe's Work).
No. 8. Greek Temples and Monuments, } as an Appendix.
No. 10. Roman Buildings, }

out venturing to express an opinion as to whether the mediæval architects adhered to one uniform system in the proportioning of their works, or admitted more than one, or presuming to decide whether the system discovered by Dr. Henszlmann was, or was not, actually used in the Middle Ages.

(Signed) Charles Barry, R.A.
Benjn. Ferrey.
Geo. Gilbert Scott.
J. J. Scoles, Hon. Sec.
Chas. C. Nelson, Hon. Sec.

THE NEW FOREST AND ITS MANAGEMENT.

That this royal chase, being so large a scope of beautiful scenery and rich land, should be so little known to the travelling portion of the community, is partly owing to its deserted state of waste, and in part because it is an outlying district, having no main roads of conduit to notable places—opposite to the Isle of Wight: very few take that route, Southampton being the direct line; and although Lymington (sending two members to Parliament) ought to be a town of note, there are few populations in England that have remained so stationary, and few market-towns which preserve the primitive traits of the old borough, in the restricted number and aspect of houses, of its High-street, Market-house, with solemn clock, griselled church, olden shops and inns, and sturdy borough reeves. Its port and harbour (which have immense capabilities) are as deep in mud as when the virgin queen moored her pleasure-barge there amidst her loyal lieges. The trade of the place is most certainly less, the parliamentary importance the same; and this privilege to the few is doubtless the cause of retrogradation in the race of commerce, which has founded wealthy populations in other places where none but fishermen and fishing-huts were traceable a hundred years back; for, as in other privileged towns, parliamentary interest and stagnation are its characteristics.

The domain of the forest has now become one of vast importance. Near the most commercial, the most populous, and the most favoured localities, it is about to be rescued from sterility: the ploughshare will subdue the barren tracts, and hundreds of industrious families will replenish them.

At present a parallelogram of about fourteen miles by nine or ten, extending from Romsey to near Fording-bridge; thence near Ringwoosel to Milton; thence, coastwise, to Lyndhurst; and, lastly, by Beaulieu and Brockenhurst to Romsey again; imbibes the rain, absorbs the sunlight, vegetates in furzes or heather, and decomposes again in festering bog, without contributing to the sustenance of an overswollen population, farther than may be wrung from it by the sportsman, or by the common grazier in lean kind and forest ponies.

As stated before, the inclosure is decided on; the land must be converted; and, if sold, the disposal ought to be by *fair auction*. The timber now standing is perhaps worth one full half of the whole region in value. The havoc is begun, and a considerable quantity has been sold the last year. Returns by the *Woods and Forests* indicate an improvement of usufruct from this source; nevertheless, much timber has fallen periodically in our memory, yet no such suitable return was made as *last quarter* of 60,000*l.* to the credit of the exchequer!

On the subject of this return, which, doubtless, comprises the oak fall of several other royal chases (previous to disafforestment), a notion prevails that the proceeds of timber should come under the head of *capital* sunk, and not of yearly profits. 100,000 oaks, which have stood two centuries, and which have come to maturity, are sold off: for 150 years no further crop can renew upon the same soil; and the ground, if sold, being full of stubs, cannot be cultivated without a thorough eradication. Therefore the value must be reduced by at least three-fourths. Thus such sales of timber cannot be properly brought (as in the late quarterly return) to the credit of *income*, but should be set forth as *capital* realized. New Park and other inclosures were, some few years back, pretty well thinned, but neither capital nor income bore evidence of profit to the public. So far, the new management is improving.

The present thriving inclosures should certainly be retained (if not well sold) for naval purposes. The mature timber, if cut, would improve by laying by in the arsenals; or it might be *marked* and reserved by Government. The Park farms and lands would all find their full value,—*four millions* of money not being an excessive valuation for the whole range.

Queen Elizabeth's Lodge might be reserved, with a surrounding park for royal use,—not that it has any pretensions beyond a solid, homely farm-house of the last century; but its situation is better than New Park. The *manager's* box is a much better and more lordly structure than the *royal* box, the latter having little more than traditional respect attached to it.

Great properties, insulated within forest bounds, as well as others bordering thereupon, will give vast trouble to valuers, in adjudicating upon exaggerated claims of almost indefinite rights. There are in all no less than *twelve hundred and fifty-nine* claims put in for recompense in case of inclosure! Of these, the great majority are on the ground of prescriptive user, in turbary, pasture, *timber*, marl, pannage, and other obsolete phrases; many for territory *in extenso!* But the serious claims are not by keyholders and squatters, but by lords of Parliament, lords of manors, bishops, and squires; the Morants, Eyres, Millses, Drummonds, Sir C. Halse (eke a wholesale claimant in Hainhault Forest), Sir G. Elliott, Peacocks, Milford Stanley, Friar, Robinson, and Compton, of the Commoners: of the Lords,—the Earls of Malmsbury, Nelson, and Ilchester, and Bishop of Winchester (followed up by his clerical staff and college), claims in right of thousands of acres, co-extensive with their benefices. Some of these estates were doubtless primarily granted by royal patent or charter: some have grown like weeds in the disorder of waste: all demand, like squatters, in proportion to their inclosures and cribbings; and the difficulty will be only to decide how much ought to be again thrown out to the wastee! But the most extraordinary feature of these claims is, that many are made in right of tenures (manors, lands, and houses) in Wilts, Dorset, and other remote places!

An old maxim of law must occur to the arbiters in adjudication, "*nullum tempus occurrit regi, aut ecclesiæ*," which, being Englished, means, that *there is no act of limitation to alienate or appropriate royal or church property*. Courtesy, and perhaps Parliamentary and other influence, may have its weight here, as in most public (Government) matters!

There are many instances of hundreds of acres with *new fences* and embankments, and some of even thousands! The growth of fence will be a fair indication of the period when appropriation was made, and there are witnesses attainable who could attest the dates.

Many and extensive reaches of rich bottom and alluvial soil would bring large prices: by far the greater part is easily convertible into tillage, and would sell well; and even the most sterile would be better disposed of at any price, seeing how much employment it would give to multitudes, and how happy independence might supersede the furzy or heathery solitude.

Up to this period, the management of the Crown lands has been a disgrace and a scandal. Were the broad acres of our nobility consigned to such stewardship, country-seats and town mansions would present but a scene of beggary, for no insurance-office would be prevailed upon to lend one hundred on rentals all absorbed by agents, treasurers, surveyors, and bailiffs; and if, to retrieve the waste, a young heir or old heritor were to commence a clean sweep of all full-grown timber, for the purpose of paying off incumbrances, an injunction in Chancery would soon arrest the destruction, and discriminate between *lawful income* or usufruct and *waste*; so, if the nation's oaks are to be felled, riding surveyors, of skill and experience, should be appointed; men unconnected with the localities and with the *old standard placemen*; men who ought to visit, inspect, value, and report on the standing oaks and the inclosures, as well as the value and aptitude of the outlying lands: the old rank and file of placemen are too stubborn in old habitudes to acquiesce in the modern quick-drill movements. The old corps of *pensioners* can therefore claim little confidence from the public, which rather looks for economy and honesty to the ministry now at the helm.

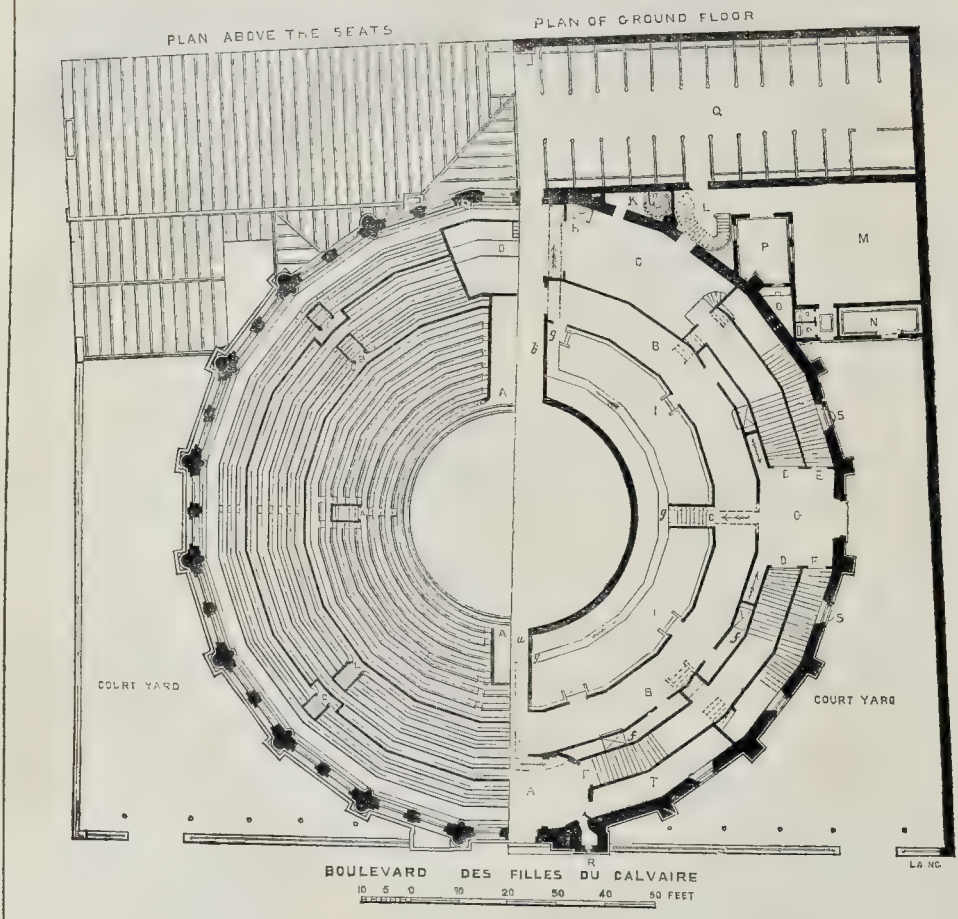
It is clear that the return of a surplus income from the proceeds of full-grown timber, is a dodge and a delusion, the timber being in fact worth as much as the land itself; and it would be easy from such a source to realise 100,000*l.* per annum for some years from the New Forest alone.

Quondam.

REMAINS OF ANTIQUITY AT CUMA.

A friend visiting Naples has sent us some interesting particulars of the opening of a Roman tomb, one among the many which, together with the ruins of a Grecian temple, have been lately discovered at the ancient city of Cuma. A labourer, going to plant trees, struck on stone work, and so it came to light. The king's brother, the Count of Syracuse, on whose estate it was, set men to work, and is still prosecuting the search with interest and eagerness. The writer goes on to say that one hundred men are at work on it, and the affair is making a noise here. Asking leave of the Prince to attend, we were invited to his palace to see what he had of it there, for he had transported to his garden in town parts of the temple, intending to set them up there. The prince is by no means a bad sculptor or bronze caster himself. We saw many of his groups and figures, with the marbles brought from Cuma, consisting of Torsos and figures, columns with capitals and bases of fine white marble, and large pieces of the architrave and frieze of the temple, of elegant design and high merit for workmanship, with part of the inscription remaining.

There were nine columns, capitals and bases all broken, but in large pieces and easily repaired. We saw a great variety of cinerary urns of glass and terra cotta, of elegant forms, some of them 12 inches to 18 inches high; glass ones, with handles beautifully perfect, one-third full of burnt bones: some urns inside an outer one of metal. Numerous small objects, lachrymatories in glass and terra cotta, ivory combs, parts of a flute, Penates, 4 inches high, some beautiful glass saucers of admirable texture, two red, two green, two white, found at head, middle, and feet of skeleton. We saw all these things at his palace, and next day by appointment we met him at the vineyard at Cuma, where the tombs are found, and spent four hours with him overlooking the workmen. After examining the site of the temple, called of Diana,—a statue of the goddess having been found there,—we saw various other ruins of houses, tombs, unshapen large masses of Roman brickwork which lie about the ground, remains of the ancient city of Cuma. After going down into one tomb, in which are columbaria or small niches all round, to hold cinerary urns with the burnt bones,—we took up our station near the scene or more of men who were digging where there was reason to expect a tomb. Experience guiding them, they demolished a tree, and shovelling off the soil, we presently came to stone-work that sounded hollow: this proved to be the mouth of the tomb, and clearing fast away, and picking and breaking through one of the large tufo stones that formed it, we made a hole big enough to creep through. First letting down a candle to see that the air was fit for respiration, in bowled three or four workmen, the prince's attendant—who is a zealous artiquary,—our party of five, including your humble servant and my friend, and eventually the prince himself. Conceive my interest at the moment: we found ourselves in a dry, arched chamber or vault, constructed of solid and large pieces of stone, say 12 feet by 10 feet, an arched doorway of entrance on one side walled up; round the other three sides, partitions of strong stonework, raised above the floor, of length and width to receive the bodies. Raking up the loose sand usually found in such receptacles, and the stucco that had fallen down from the walls and roof, which had been thickly plastered with it, we soon came to human bones, ivory combs (one precisely shaped and made like those in present use), parts of an ivory flute, alabaster



PLAN OF THE NAPOLEON CIRCUS, PARIS.

smelling-bottle, lucernæ, streaked glass and terra cotta buttons, small elegant vases of glass and terra cotta, but no money, though they found in the mouth of one skeleton lately a coin of Diocletian, proving that the tomb was used down to his reign. We had not time, though four hours there, to investigate closely: they have to riddle the sand, &c. for the smaller objects. We came away at four p.m. much delighted at this authentic actual revelation of the funeral vaults of such bygone times,—by-gone, I may say, for Cuma was founded 3,000 years ago, was once larger than Naples, and now there is nothing above ground but vineyards, in which rise bramble-covered mounds hiding Roman brickwork, masses still uncovered, walls, &c. In one of the tombs were found skeletons with waxen heads! The antiquaries are greatly puzzled thereat: no such thing was ever before seen, nor can they give any explanation of it: some say one thing, some another; *secundum morem antiquariorum*. It is thought by many of the learned that they were the bodies of victims to Diocletian's persecution, decapitated for being Christians, and re-capitated, as well as they could be, by their friends after death, and interred in the Pagan family vault. I must repeat my thanks to the prince for his obliging conduct, and say how pleasing it was to hear his opinions of our country and her institutions. "In England," said he "a man is a man."

W. W.

THE NAPOLEON CIRCUS, PARIS.

The account we gave a few weeks ago of the great Circus recently completed in Paris,* having interested many of our readers, we thought it desirable to apply to M. Hittorff, its able architect, for some further particulars. With a promptness and disregard of personal trouble which contrast strongly with the careless grudging aid exhibited on a like application by two or three of our own countrymen whom we could name, M. Hittorff sent us a complete and beautiful set of drawings of his interesting building. From these we have prepared engravings, and we give in our present number plans of the circus, above and below the seats, and an exterior view of the building. In an ensuing number will be given a section, and some of the details at large, with additional particulars.

It must be regarded as a very successful work, fully worthy of the high reputation which M. Hittorff justly enjoys.

The following references will explain the plan:—

A. Entrance-lobby to chief places consisting of the first eight rows, divided into stalls; with
B. Gallery of communication, having four entrances, at *a*, *b*, and *c*.
C. Entrance-lobby for second and third class places.
D. and E. staircases.
G. Apartment for the "properties" required during the evening.
H. Furnace to draw the smoke of the stoves, *f*, along the conduits, *g*.
I. Space under seats for the accessories, &c.
K. Staircase for the musicians.
L. Staircase to the rooms of the riders, formed over half the area of the stables.
M. Harness.
N. O. Urinals, &c.
P. Court.
Q. Stables.
R. S. Pay-places.
T. Cloak-room.

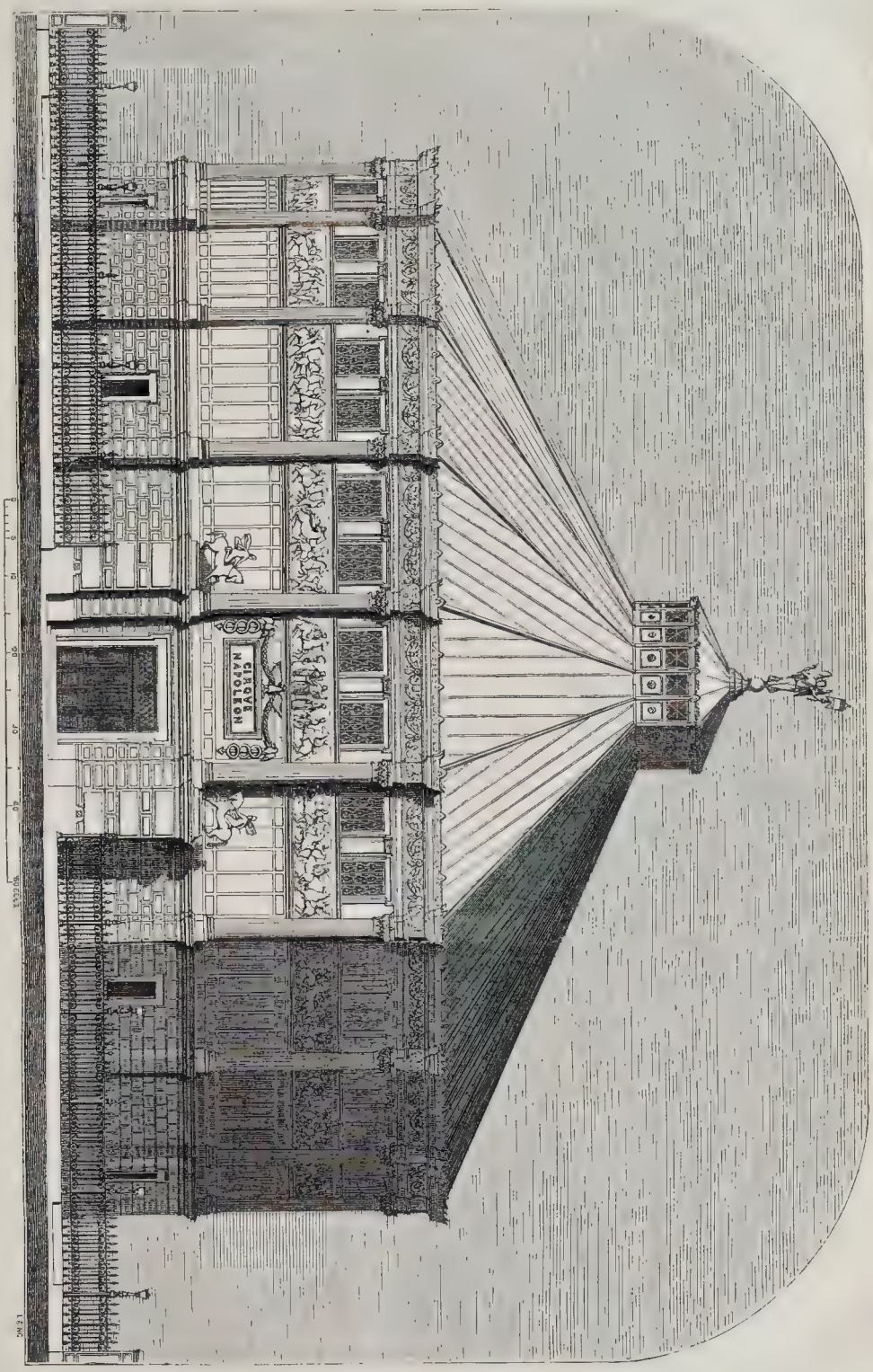
PLAN ABOVE THE SEATS.

A. Access to chief places.
B. Do. to second places.
C. Do. to third places.
D. Orchestra.

N.B. Under the stairs, right and left, are apartments for the guard, police, and administration.

* Vol. X. p. 810.

School of Design for Dudley.—A meeting of the inhabitants for the formation of a School of Design here was held on Thursday in last week, Lord Ward in the chair. The event was considered of so much importance that the bells of St. Thomas's Church rang several peals during the evening. The room was filled to overflow by the most respectable inhabitants of the town and neighbourhood. Appropriate resolutions were unanimously passed, and the formation of a school was enthusiastically determined on.



THE NAPOLEON CIRCUS, PARIS.—M. Hittorff, Architect.

THE CENTRAL SCHOOL OF DESIGN.

WE are told that the necessity of completing, without further delay, the new buildings at Somerset House, now being erected for the Inland Revenue Offices, and of consolidating the public offices on that site, has induced the Government to determine on the immediate removal of the School of Design from Somerset House. Instead of having but one Central School of Art for the whole metropolis, arrangements in concert with local authorities will be made, to carry out the wishes often expressed of establishing district schools in several parts of London. Facilities will thus be created for teaching elementary drawing in any parochial schools which may desire to have it.

The few students in the higher stages of instruction at Somerset House will be removed to Marlborough House, where they will be enabled to participate more largely than at present in the means of education afforded by the museum, library, and other features of the Department of Practical Art.

MUNICH GLASS.

IN the *Ecclesiologist* of the present month is an account of the fourteen stained-glass windows executed at the Royal Glass-painting Works, in Munich, and now in the church of Christchurch, at Kilndown. These are the most important specimens of the Munich glass in this country, and, with all their faults (not few), may be usefully studied. Kilndown is within a few miles of Tunbridge Wells. The progress towards excellence in stained glass is very slow in England.

PROVINCIAL NEWS.

Dunholme.—The church here was opened on 30th ult. The edifice has been restored and decorated, re-pewed, &c. The painted east window in the chancel was presented by the prebendery of Dunholme. The contractors were Messrs. Kirk, Huddlestone, Simpson, Wilson, and Pilkington, all of Lincoln. Mr. Joseph Basker, of Saustborpe, was surveyor of the works.

Ipswich.—The museum having been offered to the town, the mayor appointed the 4th inst. as the day on which the votes of the burgesses were to be taken for or against the proposal. We have not yet heard of the result. Should the burgesses have agreed to accept this gift, which, with the specimens in natural history, includes also the library, the only cost upon them will be an annual borough rate of one halfpenny in the pound.

Rochester and Chatham.—The laying the first stone of the Vines Congregational Church took place on Thursday in last week, by Mr. Challis, jun. in place of the Lord Mayor of London.

Bramdean, &c. Hants.—It is proposed to build a new aisle to the church at Bramdean, in order to increase the accommodation, and at same time to remove the two cumbrous galleries piled on one another at the west end, to repair the whole of the church, throw open the fine old oak roof, and restore the edifice generally. Mr. John Colson, of Winchester, is the architect employed.——New schools are about to be erected at Crofton, near Titchfield, and at Alverstoke, near Gosport, both in Hants, from designs by the same architect. A new school has also just been erected at Tareham under the same architect.

Sandwich.—Some slight repairs having been done to the chancel of St. Peter's Church, the workmen lately came upon a piscina quite perfect: the arch is a trefoil one. On further examination a hagioscope (exactly matching the one on the north side) was discovered on the south side of the chancel, with the remains of the sedilia. It is hoped these architectural antiquities will not be again covered up, as they have, no doubt, been for several centuries.

Weymouth.—No progress is being made with the repair of the esplanade and sea wall, although the equinoctial gales are likely to add to the present ruins.——Complaints having been made that William's contract for rebuilding the quay wall was proceeding in an improper manner, the town-council has appointed Mr. Stone surveyor: he is to have 5 per cent. on the outlay.——The subject of water supply engrosses public attention here. Mr. Bury has reported to the local Board of Health three sources of supply—the Sutton Springs, Radipole, and the Boiling Rock.

Bromsgrove.—A meeting was lately to be held here in order to consider the propriety of erecting a corn-exchange.

Studley.—The new Roman Catholic chapel here was opened on Thursday in week before last by Dr. Ullathorne. The building, which is dedicated to St. Mary, is situated at the entrance of Studley from Alcester: its style is Early English, and it will contain about 450 persons. The site was given by Sir R. Throckmorton, and the cost of the erection defrayed by a legacy of 1,000*l.* from Lady Georgiana Throckmorton, and by public subscription. The architect was Mr. Hansom, of Clifton; the builder, Mr. George Taylor, of Coventry; and Mr. Edward Jenks, of Coughton, was clerk of the works.

Worcester.—Mr. Joseph Stephens, of Worcester, sculptor, has received instructions to take casts of King John's tomb, portions of Prince Arthur's Chapel, and other of the carvings that abound in Worcester Cathedral, which are intended, when finished, to be placed in the new Crystal Palace, at Norwood.

Cardiff.—So extensive is the business of this port getting, that although the Bute estate management is now enlarging or rather building their new docks, more accommodation still will be wanted, and a scheme has been elaborated for the enclosure of the whole of Penarth Bay in a straight line from Penarth Head, or thereabouts, to the west of the Bute Dock entrance, directing the Taff across the Moors to the Ely, and the back surplus water to be carried away by a tunnel through Cogan Pill and open cutting to Sully;—the Taff Vale Railway to be continued, together with the Glamorganshire Canal, and the South Wales Railway, to the New Docks. Accommodation for about five times as many ships as there are in Cardiff at present would thus be obtained; but at the rate of the present increase, all, it is said, would be required in ten years.

Birkenhead.—The chairman of the trustees states that they have entered into a contract with Messrs. M'Cormick and Brassey for the completion of the whole of the outer works and tidal basin of the docks here, according to the plans in their integrity; and that the contract was such, that the trustees could call upon the contractors to complete the whole of the dock works if they thought fit to do so.

Liverpool.—The music-hall, in Bold-street, has been entirely rebuilt and remodelled. The lower part of the building has been appropriated to shops, and the upper story will be used as a music-hall. A little more room will be obtained in the length of the hall than it formerly had, and it will be considerably higher. The roof is arched, and from the platform end of the building columns rise to carry it. The platform is semi-circular, and is connected with retiring-rooms. The interior work is progressing rapidly, and the building may be re-opened early in the summer.——Preparations for the formation of the new public park at Wavertree are being made. A contract had been entered into for the making of the road. When completed, and a division of property made, the work will be immediately proceeded with.

Ashton.—A number of masons and joiners remain on strike in this town. The masters have advertised for men; and the men on strike have issued bills, warning their fellow-workmen not to engage with them.——Upwards of 100 of the bricklayers and other workpeople in the employ of Messrs. Sigley and Sons, had a dinner lately at the Junction Inn, given by Messrs. Nield and Son, cotton manufacturers, and the Messrs. Sigley. The mill belonging to Messrs. Nield had been burned down a few months ago. The bricklayers commenced the re-erection on 5th January, and although the mill is about 220 feet long (twenty-one windows) and 60 feet wide, the workmen, actuated by the laudable desire to see the mill hands again at work, finished the erection [it is hoped efficiently] of two stories and an attic, and partially put on the roof, by 29th January. Mr. Povey contracted for the iron. Mr. Coffey was the bricklayer.

Preston.—The parish church of this town is to be restored, at a cost of from 6,000*l.* to 7,000*l.* under the direction of Mr. Shellard.

Doncaster.—St. James's Hospital stands on a triangular plot of ground, formed by the junction of Cleveland-street with St. Sepulchre-gate, and opposite to the road leading to the new railway bridge. It is a plain building of compressed bricks from Everton. The plinth, string-courses, window-cills, archivolts of the entrance-porch, principal cornice in the tower, and the other dressings, are of cleansed stone, from Bolton-on-Dearne. Over the casualties ward is a fever ward, similar to it, 18 feet square and 12 feet high, both heated with hot water. There is a tower 50 feet high, and accommodation for twenty or twenty-one individuals. The hot-water apparatus has been supplied by Mr. Slater: the general contractor is Mr. Elsworth, both of Doncaster. Mr. Houghton was the architect. The first stone was laid on the 26th of May, 1852, by Dr. Dunn, the founder, and the inauguration took place on the 26th ult.

Guernsey.—It being understood, says the Guernsey *Star*, that parties about to tender for the harbour improvements are doubtful as to the nature of some of the details of the plan as laid down in the specification, the committee has determined on causing to be erected a correct sample of the work required; and Mr. Rendel having been referred to, has despatched to Guernsey one of his staff, Mr. Gullet, who will superintend the construction of the desired specimen.

RAILWAY MATTERS.

Fall of a Bridge.—On the Hereford and Shrewsbury line, near the tunnel at Dinmore-hill, a bridge erected over the Lugg had its piers washed away by the force of the late floods, and has been completely destroyed. A temporary bridge has since been erected, and the other works in the vicinity are in progress.

Bridge over the Tamar.—The contract for a bridge on the Devon and Cornwall line to cross the Tamar has been taken by Mr. C. J. Mare, M.P. for Plymouth. The extent of this bridge has been indicated by the statement that "the two principal spans will be 445 feet from centre to centre of pillars, with a height of 100 feet above high-water mark, and the cost according to tender 175,000*l.*"

Fall of Earth in a Tunnel.—At the Newmarket station of the Newmarket branch line, a tunnel in course of formation has been completely blocked up by falls of earth.

American Line to the Pacific.—The New York correspondent of the *Times* states, that the business world has been startled by the introduction of a Bill into the Senate of the Legislature of the State, conferring corporate privileges on some of the most prominent citizens of New York to organize an association, with a capital of 100,000,000 dollars, for a railway from the Mississippi to the Pacific. It is proposed to complete the survey of the first 600 miles by a year from next April, and within five years from that time to have these 600 miles completed. There is also to be a telegraph line over the route.

Sleeping-berths in Night-trains.—The *Syracuse* (U. S.) *Star* says that the directors of the Syracuse and Binghampton Railway contemplate putting berths in their night-cars.

THE BIRMINGHAM SOCIETY OF ARTISTS.—After a lengthened and prosperous season, the Birmingham Society of Artists closed their exhibition on Monday in last week. Under certain conditions, the prizeholders in the Art-Union were permitted to select two pictures, instead of being confined to one, as heretofore. The titles of some of the chief pictures and names of the artists were:—"Glendalough, Guides on the Look Out," R. Rothwell, 150*l.*; "The Mountain Stream," W. Underhill, 80*l.*; "Defeated Troopers," J. W. Glass, 63*l.*; "On the Coast—Argyleshire," J. C. Ward, 60*l.*; "Old Mortality," A. Fraser, 52*l.* 10*s.*; "The Ford," J. J. Hill, 52*l.* 10*s.*; "Gravel Pits Farm, Surrey," J. Dearman, 52*l.* 10*s.*; "A Sunny Stream," F. H. Henshaw, 50*l.*; "The Cottage Door," W. Underhill, 50*l.* The total sales are sixty, producing 1,478*l.* 12*s.* The sum ballotted for by the Art-Union was 335*l.* The purchases by the prizeholders have exceeded that amount by 206*l.*

CAUTION TO EXCAVATORS.

BURNETT *v.* TODD.

IN Brompton County Court an action was brought to recover 9*l.* 15s. under the following circumstances. The plaintiff is a painter, and the defendant, Mr. George Todd, a builder. From the evidence of the plaintiff and his witnesses it appeared that on the night of the 18th November last, as Burnett was passing along Durham-street, Chelsea, he fell into a drain-hole on the premises of the defendant and dislocated his ribs, and met with other injuries, from which he kept his bed for three weeks. For loss of time, surgeon's bill, and for damage for injury, the present claim arose. In cross-examination, witnesses stated that the road was not a public thoroughfare. There was no light or protection to cause notice of the danger. The hole was nearly in the centre of the road, and was filled up before any one for plaintiff could look at the place. That plaintiff was perfectly sober. That there was one plank near the hole. That there was no footpath, and plaintiff was walking in the middle of the road. That the nearest lamp was too far away to throw a light upon the hole. He shouted for help, and got out himself.

Mr. Roberts said this action was not only of great importance to his client, Mr. Todd, but to the whole of the builders in the kingdom; for if a verdict were given adverse to his client, it would be holding out a strong inducement to persons meeting with an accident to look out for a builder's hole in the neighbourhood and lay the blame to that. His defence was fourfold,—First, that the hole in question was not on their premises; secondly, that it was so protected, that unless the plaintiff had deliberately got over his knees in mud, and over a hoarding, and then removed the planks placed over the pit, he could not have got into the hole; and, thirdly, that he never fell into the hole at all; that he must have been drunk and run his ribs against a lamp-post and taken it for a hole; fourthly, that the hole was on private property, and as such the plaintiff was a trespasser, and had no business there. He should call witnesses to prove that no one had been in the hole, and without going fully into liability, he would urge upon the Court, that if any damages arose, his client was not the party to look to for redress, but the contractor, Mr. Bignell, who made the drain.

Two labourers in the employ of Mr. Bignell, who contracted for the drainage, were then called. Their evidence went to show that, on their leaving work, they properly secured the hole by putlogs and boards; that when they went to work in the morning, the place was in the same state as when they left it, and they could swear no one had been in it; that the hole was under the scaffolding, extending to about 5 feet from the house; that outside the hole there were bricks and road-drift 4 feet high; that plaintiff must, in their opinion, have run against a board fence, and broken his ribs.

Plasterers and other sub-contractors, and their men at work on the building, deposed to the hole being so protected as to make it almost an impossibility to get at it, but admitted there was no lantern to warn people.

Mr. Bignell, bricklayer, said he contracted for the brickwork and drains. He sub-let the earth-work to his son. Mr. Todd had nothing to do with the letting of the contracts. He took the contract from Mr. Bass, defendant's surveyor. The hole was filled up, and properly protected.

Mr. Bass, surveyor to defendant, said he saw the hole the next day: there was mortar 5 feet high, and dirt on each side of it. No one could have got into the hole without first getting into the mortar.

His Honour said it was a very mysterious case. It seemed, by defendant's showing, that it was such a hole as ought to have been covered up for the safety of the public. The defendant's case he thought had been made out too good, for if the witnesses were to be believed, it was impossible that the plaintiff could have got into the hole if he had tried. No other hole appeared to be near; and a disinterested witness proved that the hole was not covered up, as stated by defendant, the next morning. Under these circumstances, he must give a verdict for the plaintiff, with full costs.

RECOVERY OF VALUE OF DRAWINGS AND MODELS.—An architect and surveyor brought an action of trover, in the Court of Exchequer, on 4th inst. against the executor of a late house-decorator at the West-end, for the value of certain drawings and models, which were entrusted to the decorator, Mr. Farris. For the plaintiff it was alleged that these articles were intrusted in the way of business to frame and do other work upon them. For the defendant it was contended that they were received by deceased for the purpose of exhibition, and for plaintiff's benefit, and that not reclaiming them, they had been lost. The jury found a verdict for plaintiff.

Notices of Books.

The Board of Health Officers' Pocket Almanac and Guide for 1853. C. Knight, 90, Fleet-street. 1853.

BESIDES all the usual contents of an almanac, with tables of wages, weights, and measures, quarterly meetings of iron-masters for 1853, &c. &c. this useful little pocket-almanac contains information as to the Public Health Act and its operation, the local boards of health, and various other particulars. It also contains a good deal of interleaved writing-paper for memoranda, and only requires the usual leather envelope, which might easily be given it where required, to render it in all respects a handy pocket-book.

The Builder's Price Book for 1853. By W. LAXTON, Architect. London: Weale; Simpkin and Marshall, &c.

THIS useful work, which contains, according to the title-page, 8,000 prices and 3,000 memoranda, together with the "Building Act," is now too well known to need comment. We have simply to mention the publication of the edition for the new year. It must always be remembered, as we have before said, that the prices allowed in this book are for the *best* materials and workmanship and a fair length of credit.

The Year-Book of Facts in Science and Art: exhibiting the most important Discoveries and Improvements of the past Year. By JOHN TIMBS. 1853. London: Bogue.

A LARGE amount of information, compiled from the various journals of the year, is made readily accessible by Mr. Timbs's Year-Books. The present volume is more than usually interesting, and has a very excellent portrait of the distinguished and fortunate "physicist," Dr. Lyon Playfair.

RAILWAY READING.

OF Longman's "Traveller's Library" and Murray's "Railway Reading," we have a new budget to notice,—in the latter, "The Emigrant," by Sir F. B. Head, and Lord Mahon's "Joan of Arc" from the *Quarterly Review*; in the former, Lord Jeffrey's articles on Swift and Richardson, from the *Edinburgh Review*; Von Ranke's "Ferdinand I. and Maximilian II. of Austria," translated by Sir Alexander and Lady Duff Gordon; and Sir Edward Seaward's "Narrative of his Shipwreck," &c. abridged, in two shilling parts, from the third edition. In respect to the first-named—Sir F. Head's "Emigrant,"—it would be a serious mistake for an emigrant to purchase this very entertaining little volume in the idea that it would prove to be of practical importance to him as a book of instruction, pointing out to him how he ought to proceed. It consists merely of sketches of Canadian life and scenery. As to Lord Mahon's masterly article on that wondrous mesmerizer, Joan "Darc," all we need say is, that although we read it in 1842, when it first appeared, we were dragged into it, in spite of ourselves, and re-read it—at a glance, or a breath, we had almost said. No fitter reading for those who run by rail could well have been selected by Mr. Murray for his "Railway Reading" than this. It is an instructive lesson, too, for all who would impress themselves with the knowledge of the wonders that a determined will and an enthusiastic belief are capable of doing. Lord Jeffrey's slashing article on Swift we are glad to see in reprint: we only wish the selfish, coarse, and heartless, "humourist" could be resuscitated for just half an hour, and compelled to run through the article himself: but let us be charitable: he does not now need its wholesome influence,—perhaps; but many of his readers may, to moderate their admiration; and, as he thus still lives, the adage *de mortuis nil nisi bonum* does not *yet* apply to him, and hence the propriety of the present reprint.

LECTURE ON BATHS ANCIENT AND MODERN.—On Monday in last week a lecture was delivered by Mr. H. I. Stevens, architect, to a numerous audience, at Warwick, Derby. The practical object of the lecture was the promotion of a movement in favour of the establishment of baths and washhouses in Derby.

Miscellanea.

TRINITY COLLEGE CHURCH, EDINBURGH.—It will be seen from our town-council report, says a local paper, "that the Lord Provost's Committee have cut the Gordian knot by a Jesuitical report, attempting to concuss the Presbytery either into a confession that they would now rather delay the rebuilding of this parish church, or submit to accept the shabbiest possible erection in the obscurest possible corner of Edinburgh, in order that the council may have at their disposal a large surplus of at least 10,000*l.* to do whatever they please with. . . . If such be the spirit and taste of our present rulers, none of *them* will ever be able to boast, like Augustus, of having found a city of brick and left one of marble. The reverse process seems to be that upon which civic immortality is coveted for the present."

THE TIMBER TRADE IN LIVERPOOL.—From the trade circulars just issued, it appears the timber trade here has participated in a large degree in the general prosperity of 1852. The greatest comparative increase over the average has been in the import of deals, owing to their being more easily procurable in the colonies, and American ships preferring them for cargo. The consumption has kept pace with the supply, and shows an increase. Of North American timber the import has slightly fallen in all kinds, except in Quebec oak, and in pine and spruce planks, of which latter kind the import this year exceeds that of last year by 9,717,000 feet of 2 inches. In railway sleepers there has also been an increase of 12,453 pieces over last year. There has been a considerable falling off in the imports of timber from the north of Europe, as the Baltic shippers, owing to the immense increase of North American imports, and the cheap rates at which the United States merchant-vessels have carried them, have been driven into the Hull and London markets. The consumption, however, shows a general increase. In mahogany there has been a considerable increase, both in imports and consumption, as in timber from Cuba, Honduras, Havannah (cedar), Rio and Bahia (rosewood). In prices there has been a steady, and, in some instances, a considerable rise. In 1851 there were 465 vessels employed in carrying timber to this country, with a tonnage of 261,960 tons. In the past year there were 443: the tonnage, however, had risen to 272,771 tons.

PROPOSED PUBLIC SLAUGHTER-HOUSES IN MANCHESTER.—On Tuesday in last week, a meeting of the butchers of Manchester and Salford took place, to consider "those clauses in the Manchester Improvement Bill now before Parliament, which affect the interest of the trade, particularly that one which has for its object the removal of all private slaughter-houses, and the erection of public ones in their stead, with power to compel all butchers to use the same." The meeting was numerously attended, the room being completely filled. After some discussion, it was unanimously resolved to oppose the Bill in Parliament, as oppressive and unnecessary, and solicitors were appointed in the name of the Butchers' Guardian Association, "with power to employ counsel and agents, and witnesses, and to pay and to charge all necessary and general expenses." Mr. Leek said that, if the corporation would but remove the manure there would be no nuisance, and if public slaughter-houses were erected, the demoralisation would be such that no respectable man would bring up his child to the business. A resolution was then put from the chair, whether the butchers would be willing to give up the manure to the corporation, if the latter would collect it, which was passed with but one dissentient. A subscription was then entered into, for the purpose of opposing the corporation in Parliament.

WATT FESTIVAL AT DUNDEE.—A "grand literary festival," in commemoration of the birth-day of James Watt, was held in St. Andrew's Church, Dundee, on Wednesday in last week. The church was crowded long before the hour appointed. Lord Panmure occupied the chair, and amongst those on the platform were Lord Kinnaird, Provost Thoms, Sheriff Henderson, and various literary gentlemen, magistrates, clergymen, &c. Dr. Dick, the astronomer, from Broughty-ferry, was also among them. The meeting was addressed by the chairman, Lord Kinnaird, the Rev. Mr. Gilfillan, and others.

DEATH BY MOLTEN IRON.—Isaac Rust, a moulder in the employment of Mr. Grissell, at the Eagle-wharf, City-road, while assisting to run a casting from a ladle containing 2 tons 4 cwt. of molten iron, has been frightfully burnt and killed by the tilting of the ladle over him, in consequence of a fellow-workman, it is supposed, letting go his hold while the metal was splashing in the runner. At an inquest held on the body, when a verdict of accidental death was given, the jury cautioned the fellow-workman as to how he acted in future, and recommended Mr. Grissell not to allow the ladle to be worked again without the double lever.

THE PHOTOGRAPHIC SOCIETY.—At a meeting of this society, held at the Society of Arts last week, Sir W. Newton, vice-president (in the chair), read a paper on the photographic art considered in an artistic view. Mr. R. Fenton, honorary secretary, read a paper upon the mode in which the society proposed to conduct its labours. He stated that the society could not of itself attempt photographic research, but could regulate, and even initiate, the labour of its members. That among its objects would be that of defining what was already known in photography; of registering all new facts, so as to form a basis on which to build general views; of getting together a collection of extensive and careful observations; and that for this purpose it invited the co-operation of photographers residing in parts of the world widely separated and differing in climate; and announced as an inducement that members so situated should, during their residence abroad, be liable to no other charge than the entrance-fee and first year's subscription. Dr. Percy then read a short paper on the use of the wax-paper process in hot weather. Mr. Vignoles made a few remarks in illustration of the great services which the new art would be likely to render to engineers and others having to superintend important works, which they could only occasionally visit, or having to make intelligible, to foreign employers speaking a different language, with whom they could interchange ideas only imperfectly in conversation, the details of blocks and ropes, and complicated constructions. He instanced the pictures, taken by Mr. Fenton, of the works now going on at Kief for the construction of a suspension-bridge over the Dnieper, in which the method of raising the chair from the first tightening of the ropes to the final elevation of the whole weight of metal to its proper position, is shown with the greatest accuracy.

THE NEW CATHEDRAL OF ST. PETER, LONDON.—It appears that a site has been secured for a Roman Catholic cathedral, somewhat at the north end of Hatton-garden, and that the edifice is to be consecrated to St. Peter, at the special request of him who claims to be his successor. We are told the church is to be built on the model of the oldest Christian churches, and services celebrated in Italian and English, and also in other languages if required.

ARCHITECTURAL INSTITUTE OF SCOTLAND.—The fifth meeting for the session was held on Thursday night in the hall of the institute, George-street—Mr. Patrick Wilson in the chair. The first paper read was one from Mr. James Lorimer, advocate, in which he described a number of the churches and cathedrals in the Rhenish provinces, and traced many of their peculiarities to the Roman "Basilica." A letter from Mr. Cosmo Innes, in reference to Caen stone, was read. The model of the proposed roadway from Waverley-bridge to the High-street was exhibited, and a description given by Mr. J. Dick Peddie, architect, of the contemplated improvements.

ASSIGNMENT OF LEASE.—In the Court of Common Pleas, on 5th inst. a case was decided in which a retired ship-broker was called upon to repair six small houses in the Hackney-road, leased by him from the plaintiff, a trustee. Defendant pleaded an assignment of the lease and paid into court 110*l.* in satisfaction of all damages against him. Defendant had assigned the lease to his own gamekeeper, employed by him at 2s. 6d. a week, with a license to shoot, and had given the assignee's wife 5*l.* to pay the consideration money, and the assignee himself 2s. 6d. to visit his new tenants. The Lord Chief Justice in summing up said, people who kept their houses in excellent repair did not usually make such assignments. It was, however, the law, that a man might go to the next workhouse and ask the porter for a respectable pauper, and get rid of his lease and its liabilities to him. The question was, had the defendant got rid of his lease in this instance? Had Winnox agreed to take it, and the other to assign it over, or was the whole thing a mere sham? They knew what sort of men these were: when they did not get the 2s. 6d. a week for shooting they did a little in the same way by moonlight. The jury found a verdict for defendant. They believed the 110*l.* to be sufficient for the repairs, and that the defendant intended to make a valid assignment.

THE NOTTINGHAM MECHANICS' INSTITUTE SOIREE.—A great meeting of the members and friends of this institution was held on Tuesday in last week, Mr. J. E. Denison, the president, in the chair, when nearly 1,100 persons were present, and Dr. Layard delivered a very interesting lecture on his Assyrian discoveries, in course of which he pointed out many singular illustrations of the truth of Bible history. The meeting was also addressed by the chairman, by the Right Hon. E. Strutt, Mr. W. H. Barrow, M.P. and other gentlemen. Amongst those present at the meeting were Lord and Lady Newark, Lady Charlotte Denison, Lady Mary Bentinck, Mr. Granville Vernon, M.P. the Mayor of Nottingham, and a large number of the clergy and gentry of the neighbourhood.

STATE OF METROPOLITAN CHURCHYARDS.—From fourteen to twenty dead bodies are brought into the church at St. John's-wood on Sundays, many of them in such a state that service cannot be performed even in the evenings, and the undertakers, though accustomed to such a state of things, complain of it in the Marylebone vestry, one of them declaring that his men, after placing bodies in the church, have often to hurry home and change their clothes on account of the horrible concentration of decomposing vapours in the church! We should not like to be one of those who habitually attend this church, whether for evening service or for day service. No such practice as that of collecting dead bodies in churches exists in Scotland: why should it exist in England? Even to enter mortuary chapels, where a number of dead bodies await the wholesale service of the church, is both offensive and dangerous to the health of the few obliged to do so: to expose a whole congregation weekly to such influence is enough to breed a plague.

ARCHITECTURAL MEDALS.—In Mr. Donaldson's paper on this subject, I am made to say that a certain didrachm of Messina (then called Zancle) quoted by me, was struck in the *fifteenth* century, B.C. thereby adding on *ten* centuries to the age of a coin already enjoying a very respectable antiquity. I *did* say the *fifth* century, B. C. and as, if I mistake not, the earliest specimens of coined money known to us reach only to the *eighth*, a Sicilian didrachm of the *fifteenth* would be as great a rarity as a Latin "first brass" of Otho, or an English silver penny of our own Cœur de Lion.—JAMES M. LOCKYER.

ENLARGEMENT OF BETHLEHEM HOSPITAL.—Two new and extensive wings have just been completed at the rear of this hospital. They will accommodate nearly 500 more inmates.

DEATH OF MR. WILLIAM BONNAR, R.S.A.—The *Edinburgh Scotsman* announces the death of Mr. Bonnar, who was a resident portrait and historical and characteristic painter. The deceased was a native of Edinburgh, and was born in June, 1800. His father was a house-painter of considerable skill, and he himself was apprenticed to one of the leading decorative house-painters of the time, in whose establishment he ultimately officiated as foreman. In 1824 his picture of "The Tinkers," exhibited in Waterloo-place, established him as a favourite with the public, and on the formation of the Scottish Academy, he was elected an academician. Mr. Bonnar, adds the *Scotsman*, has left behind him many fine pictures, and a number of them have been engraved, the engravings enjoying extensive popularity.

MARYLEBONE LITERARY INSTITUTION.—MRS. Fanny Kemble is to give a "Reading" at this Institution on the 16th inst. The play selected for this occasion is Shakspeare's "Merchant of Venice;" and it will probably be the last time Mrs. Kemble will read in England.

PROPOSED NATIONAL LIBRARY OF MECHANICAL AND SCIENTIFIC WORKS.—His Royal Highness Prince Albert, it is said, has suggested and proposed the establishment, in connection with the Patent-office, Southampton-buildings, of a national library of all mechanical and scientific works, showing the inventions of all civilised countries, from the earliest times. Accompanying this library his Royal Highness suggests that there should be indices, chronologically arranged, of each class of inventions; and also a museum of machines, models, diagrams, drawings, &c. The proposal has received the cordial support of the Commissioners of Patents.

THE ELECTRIC LIGHT.—Among the numerous sealed packets sent to the Paris Academy of Sciences by scientific men, who have, says the *Presse*, no other means of securing to themselves, without expense, the nominal priority of their discoveries, is that of the director of the Conservatoire Industriel of Brussels, which contains an alleged means of making the electric light last as long as the current which feeds it, without the intervention of any mechanism or the aid of any person.

COST OF PIPE-DRAINS.—I beg to hand you the particulars of tenders sent in for the supplying and laying down of 900 feet of 9-inch glazed pipes, at Plasket School, East Ham:—

Stiles	£136	0
Hier	112	0
Blyth	95	10
Wood	94	0
Myers	81	17
Viger	70	0
Parrett	69	4
Scarbore	66	0
Toole	65	5
Rogers	65	0
Bell	64	0
Wilson	63	10
Cook	62	19
Brown	58	0
Hill	58	0
Green	57	7

FIRE IN MR. SIDNEY HERBERT'S MANSION.—At Wilton House, on Sunday morning in last week, a fire originated from the foulness of a flue at the back of the library wall. Fears were entertained that the books and paintings would be destroyed, but, fortunately, no further damage was done than the charring of the back of one of the book-shelves. It might have been a national loss.

THE BANKING INSTITUTE.—This Association appears to be pursuing its objects successfully. On the 8th inst. a paper was read by Mr. W. J. Lawson, author of "The History of Banking," on "Bank Charters."

GAS.—The price of gas at Cardiff from 24th June next will be from 4s. 6d. to 3s. 9d. per 1,000 cubic feet, according to the quantity consumed. The price during the last two years has been from 5s. to 4s. per 1,000 cubic feet; and as these reductions on previous prices have caused a great increase in the consumption, the directors have resolved again to lower the price, feeling assured that the reduction will be met by a further increase, as it undoubtedly will; for there is everywhere in the private dwellings of towns a vast field of profit to be opened up only by such reductions in the price of good gas, seconded by other facilities in regard to fittings, &c. which it would be for the permanent advantage of landlords and of gas companies were they to arrange for tenants, as is already done in Scotland, and in some English towns as well.——In consequence of reductions in price made some time ago at Worcester, the consumption there too has increased so that an enlargement of the works is in progress. A dividend of 8 per cent. also has just been declared.——A site for gas-works at Spilsby has been provided by Lord Willoughby d'Eresby, and a prospectus has been issued showing that a capital of 2,000*l.* divided into 200 shares at 10*l.* each will be required to form the works projected to supply the town with gas.——Settle has been supplied by the Vegetable Gas Light Company of London, whose gas is said to give satisfaction to the inhabitants.

THE BURIAL-GROUNDS AT BURY.—An official inquiry is in progress at Bury, in Lancashire, by Mr. Lees, one of the inspectors under the committee of the General Board of Health, as to the state of the burial-grounds in the parish. The inquiry is proceeding in open court at the Town-hall, and various persons are already reported to have been examined. Mr. Lees stated that the inquiry was instituted under the provisions of the 9th and 11th clauses of the Act passed in 1849, for the removal of nuisances, and the prevention of disease. A preliminary inquiry had been already made to the General Board of Health, dated 17th December, 1852. In the parish of Bury there were eight townships, containing a population of upwards of seventy thousand inhabitants. The burial-grounds that were overcrowded were principally in the townships of Bury and Heap, except two in the former township, which were not so, namely, St. Paul's and the Brunswick Cemeteries. The burial-grounds at Shuttleworth, Edenfield, Ramsbottom, Holcombe, and Tottingdon were not over-crowded. It is proposed to open a new general cemetery in the place of the closed graveyards.

THE "POETRY OF ARCHITECTURE."—On this subject an interesting lecture was delivered at the Tolsey, Gloucester, by Mr. John Clarke, architect, of that city. Poetry, he observed, was not merely a thing of lines and metres, or melodious language, but a principle of creative beauty, which pervaded the whole of the universe, and was no less manifest in the works of man when these works were designed on true principles. A beautiful building might thus resemble a great epic poem, in which all the parts were so justly balanced and nicely harmonised that the effect produced on the mind was of beauty and repose. As illustrative of this, he described the feelings of an intelligent rustic, on entering a fashionable "chapel of ease," with its Grecian columns, its sofa-like cushions, bed-like pews, and insolent sexton; and, as a contrast, the sensations of the same man on returning to his village and visiting again his "dear old church," with its simple but majestic tower, its columns adorned with carvings of flowers and foliage, and its stained glass windows, in which were depicted in glowing colours the sacred events of the Saviour's life.

TENDERS

For a Pair of Semi-detached Cottages, at Norwood, Surrey, for Mr. W. T. Imeson. Mr. Alfred Cook, architect. Quantities furnished.

W. Reading	£1,060	0	0
J. and J. Coleman	1,020	0	0
Wint and Blackburn	987	0	0

For a Pair of Semi-detached Cottages, at Norwood, Surrey, for Mr. R. Froggatt. Same Architect.

Haynes and Eyre	£1,196	0	0
J. and J. Coleman	1,075	0	0
Wint and Blackburn	830	0	0

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"C. P." Pimlico (a charge could not be recovered. Builders should stipulate before making estimates). "W. T." (ditto). "F. L." "S. E. R." (shall appear). "W. H. C." "T. P." "T. D." "Loco" (will look to whatever may be sent). "G. T." Leeds" "W. P." "Old Subscriber" ("pug" the floor). "G. W." (we decline recommending). "M. I." "L. M." (it must depend on circumstances. In some churches the "chancel" extends into the nave). "J. T. M." "W. F." (we are unable to assist). "G. J." "Subscriber from the beginning." "R. N." "Mr. G." "A. C." "Scrutator" (deal moulds, well oiled). "C. E."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

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TO BE DISPOSED OF, a BUSINESS in the above line, doing a first-rate Country Trade, capable of being considerably extended. To a person with a moderate capital, this offers a rare opportunity. For further particulars, apply by letter post-paid, to A Z care of Messrs Marlborough and Co. News Agents, 1, Ave Maria lane, London

THE MIDDLE CLASSES FREEHOLD LAND SOCIETY. At the first Meeting of the Society, held at Peele's Coffee house, on the 24th January, the following Resolutions were unanimously passed:—

"That, commercially, the establishment and operation of Freehold Land Societies is productive of great public and private good.

"That the Middle Classes Freehold Land Society offers peculiar advantages for the purchasing freehold property by an equitable and economical mode, and is deserving the public confidence and support; and that, whilst it has no political bias, it affords greater facilities and advantages, by the system of Acre Allotments, than any other Land Society."

The first monthly subscription is now payable.

Interest at 5 per cent. per annum in advance.

Shares to the amount of 7,000l. already subscribed for.

A SECOND PUBLIC MEETING will be held at the Freemasons' Tavern, Great Queen-street, on Tuesday Evening, the 15th instant, at Half-past Seven for Eight o'clock precisely.

Prospectuses can be obtained at the Freemasons' Tavern, the Temporary Offices, 33, Parliament-street; and the City Branch Office 31, Coleman-street; where applications for shares may also be made. Subscriptions can be paid at the Temporary and Branch offices, and to the Secretary, WM. PEACOCK, 9, Union-court, Old Broad-street, City.

PUBLIC BATHS and WASHHOUSES.—Report by P. P. BALY, Esq. C.E. on the Erection and Management of Baths and Washhouses, with Plans Estimates, and detailed information; and an Appendix of Bye-laws Forms of Accounts books, &c. Published under the sanction of the Committee for Promoting the Establishment of Baths and Washhouses for the Labouring Classes.

EFFINGHAM WILSON, Publisher, Royal Exchange, and to be had at the Committee's Office, 14, Buckingham-street, Adelphi, and of all Booksellers.

Report, 4s 6d; by post, 5s. Appendix, 3s.; by post, 3s. 6d Both, 7s 6d.; by post, 8s.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.

Incorporated by Special Act of Parliament, 16 Vict. c. 35.

Edinburgh ..... 25, St. Andrew's-square.

London ..... 126, Bishopsgate-street.

To secure the advantage of this year's entry, proposals must be lodged at the Head Office, or at any of the Society's Agencies, on or before 1st MARCH. ROB. CHRISTIE, Manager.

Tables of rates and forms of proposal may be had free on application at the Society's Offices, 126, Bishopsgate street (corner of Cornhill), London. WILLIAM COOK, Agent.

*** Medical Referees paid by the Society.

TO BE SOLD, a PLOT of FREEHOLD BUILDING GROUND, in the rear of houses in St. Thomas's street Borough, containing about 3,200 superficial feet.—Apply to Messrs. WILLSHIRE and PARRIS, Architects and Surveyors, 5, Wo'singham-place, Lambeth.

TO BRICKMAKERS AND OTHERS.

HIGHGATE.—TO BE LET, about SIX ACRES of valuable BRICK-EARTH A plan of the estate may be seen, and particulars obtained upon application to Mr. JOHN WOOD, 8, Falcon-street, Aldersgate. Mr. JOHN BLYTH, 113, Aldersgate-street; or to Messrs. PRICKETT and SON, Southampton-buildings, Chancery-lane.

TO BUILDERS AND OTHERS

BUILDING LAND, at HIGHGATE.—TO BE LET ON LEASE for a Term of 99 years, direct from the Freeholder, about TWELVE ACRES of LAND, admirably adapted for the erection of Villa Residences, which are in great demand. There is an excellent House, with pleasure-grounds and kitchen garden, occupying about one acre, and immediately adjoining the above, which can be let therewith if required.

A Plan of the Estate can be seen and particulars obtained upon application to Mr. JOHN WOOD, 8, Falcon-street, Aldersgate; Mr. JOHN BLYTH, 113, Aldersgate-street; or Messrs. PRICKETT and SON, Southampton buildings, Chancery lane.

LAND for BUILDING.—TO BE LET, at Lee, Kent, by the Merchant Taylors' Company, in the immediate vicinity of the Blackheath and Lewisham railway stations, an eligible PIECE of LAND, of Twenty-three Acres or thereabouts, for a term of ninety-nine years.—Plans and tenders to be sent in to the Clerk's office, Merchant Taylors' Hall, Threadneedle-street, where a plan of the ground can be seen and further particulars obtained. SAMUEL FISHER, Clerk.

BUILDING FRONTAGES, Grove-road, Upper Holloway; Queen's-road, Dalston; and High-road, Farnham-green.—TO LET, BUILDING FRONTAGES, with good roads and sewers, and one year's pepper-corn.—For particulars apply to Mr. HUDDLESTON, 33, Bedford-row; and to view the Ground, at the Counting-house on each Estate

BUILDING LAND and ADVANCES.—TO BE LET, several PLOTS of BUILDING LAND, for the erection of detached, third, and fourth-rate houses, in the undermentioned localities, viz. at Tottenham, Edmonton, Hford, Windsor, Slough, Croydon, Norwood, Kingston, Hornsihl, Camberwell, Brixton, Greenwich, and Deptford.—Apply to Mr. W. WALLEN, Jun. 25, Lawrence Pountney-lane, Cannon street, City.

REPAIRING LEASE.—TO BE LET, the Premises Nos. 21 and 22, in Wood street, Smithfields, where a specification may be seen.—Apply to Mr. J. W. PAPWORTH, Architect, 14a, Great Marlborough street, Regent street.

BUILDING GROUND, for Small Houses. TO BE LET, on very advantageous terms, in a manufacturing locality, where rents of residences are much in request.—Apply to Mr. TRIBE, Isle of Dogs.

WAREHOUSE TO BE LET, 60 feet front, 78 feet in depth, known as the Union Works, Cherry-garden-street, Rotherhithe, near the river; the whole roofed in, with chimney-shaft for steam power.—Inquire of Mr. JOHN KELSEY, 72, Paradise-street, Rotherhithe

TO PLUMBERS, GLAZIERS, AND DECORATORS.

TO BE LET, a desirable BUSINESS and Connection in the vicinity of London, with convenient house, in a leading thoroughfare, with front shop and light workshop, with power to put on steam engine, and two very good apartments et. 44l. for goodwill, fixtures, and utensils. A small stock may be taken. For particulars for disposing Inquire, W. S. 7, Union place, Lower-road, Islington.

TO BUILDERS AND CONTRACTORS

TO BE LET, by TENDER, the BUILDING of SEVEN COTTAGES, at Ower Staveley, near Kendal, for Mr. Wm. Philipson; the plans and specification for the same may be seen on application at the offices of Messrs THOMPSON and WEBSTER, ARCHITECTS, Kendal, on SATURDAY, the 19th inst. until WEDNESDAY following; and from that time until MONDAY, the 21st inst. at the mill of Mr. Philipson aforesaid. Also should be Let the Building and Completing of a Mansion at Grasmere, near Ambleside, for Stephen Heelis, esq.; a Mansion House, Stables, and Offices, &c at Grange, near Cartmel, for C. Bigland, esq.; a School and Master's Residence at Coniston near Hawkshead; and a Villa Residence and Offices at Roberskyke, near Egremont, Cumberland, for Henry Jefferson, esq. Plans, &c. of all the above may be seen, and all further information obtained by applying at the Offices of Messrs. THOMPSON and WEBSTER, Architects, Kendal; or at their offices, Eller How, Windle, in Cartmel; and at the Offices of Mr. FRANK WEBSTER, Solicitor, Kendal and Eller How.

BRICKFIELD.—TO BE LET, for a term of years, at a royalty rent, a BRICKFIELD, near Milton, next Sittingbourne, Kent, containing a large quantity of the finest brickearth, with suitable dwelling-house, sheds and stable. Also, with the same, FIVE excellent COTTAGES, immediately adjoining the field. There is an abundant supply of water.—For particulars apply to Mr. T. CLARK, Solicitor, 3, Drapers-court, St. Paul's Churchyard, London.

SUSSEX.—FREEHOLD BUILDING LAND, the property of a gentleman, and tax redeemed, TO BE LET ON LEASE, for 99 years, in convenient lots, for the erection of Villa-residences, about FIFTEEN ACRES of excellent park-like LAND, highly ornamented with fine old timber trees. The growth of ages, being the remaining portion of the very desirable and picturesque freehold meadows lately belonging to the Manor of Burwash, in the boundary of that parish, but which is now superseded by an elegant hotel, erected there for the reception of families of distinction. This property, adjoining the parish of Burwash, and only five miles from the Battle station, on the Tunbridge and Hastings railway, and enjoys, from its favoured situation, most extensive and delightful views of the surrounding country, in which great quantities of hops are grown, and which is diversified by bold and beautiful hills, deep vales and woods and running streams The soil being of a sandy loam, and that again upon sandstone, is naturally well drained, and affords an abundant supply of excellent spring water. The village is noted for its salubrity; and within a few minutes' walk of these grounds in the vale below, there is a never-failing chalybeate spring, equal to any of the kind at Tunbridge Wells, the medicinal virtues of which are so well known. An abundance of fishing, hunting, and shooting may be obtained in the immediate neighbourhood, and all the places within about an hour's access to neighbouring towns than the Battle station, which is only two miles distant from Burwash. This village is 55 miles from London, 9 from Battle, 12 from Tunbridge Wells, 18 from Winchelsea, 20 from Lewes, 28 from Brighton, and 16 from Hastings and St. Leonards, all which places may now be conveniently and easily reached by rail from Tunbridge. Taking, therefore, into consideration these advantages, and the many agreeable walks and rides, and interesting objects which abound in the vicinity of Burwash, together with the proximity to those favourite places of resort of persons of rank and wealth, Hastings and St. Leonards—who are annually allured to this part of the coast by health and pleasure, from Battle-house Meadows may fairly claim to vie with, if not surpass, any other situation near the line of railway between London and Hastings, as a charming spot for the residence of persons having occasional business in the metropolis. It requires to be seen to be duly appreciated; and for further particulars, application may be made to the proprietor, RICHARD SARGENT, Esq. 5, Essex-court, Temple; or to his Surveyor, Mr. J. B SHEPHERD, 14, Bucklersbury, at whose offices a Plan of the Estate may be seen.

N.B.—Bricks are being made on the Estate for the intended Villas, and Builders will be supplied at an extremely moderate price.

COTTAM & HALLEN, 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



IMPROVED PUMPS.

The VALVES and SUCKERS of these Pumps are constructed upon an entire new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

THEY ARE OF THE BEST WORKMANSHIP, AND WARRANTED.

PUMPS OF EVERY DESCRIPTION, IN STOCK AND TO ORDER.

THE ROYAL EXHIBITION PRIZE MEDAL WAS AWARDED TO COTTAM AND HALLEN, FOR **ORNAMENTAL IRON GATES;** ALSO FOR THEIR REGISTERED **ENAMELLED MANGERS.**

ORNAMENTAL WROUGHT AND CAST IRON WORK OF EVERY DESCRIPTION—STAIRCASES, RAILINGS, &c.

ESTIMATES UPON APPLICATION.

TO ARCHITECTS, BUILDERS, AND THE TRADE.

SASHES, **SKYLIGHTS, AND CONSERVATORIES,** MADE IN WROUGHT IRON AND BY MACHINERY.

Which has not only improved the workmanship, but greatly REDUCED THE COST.

EVERY DESCRIPTION OF SASH IN WROUGHT AND CAST IRON, PLAIN OR GALVANIZED.

FOWLER'S IMPROVED FARM and COTTAGE PUMPS.



To be had of any Ironmonger or Plumber, 1*l.* 15*s.*

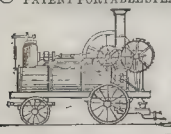
The usual allowance to the trade.

PUMPS of SUPERIOR CONSTRUCTION bored perfectly true by improved machinery, in various plain and ornamental patterns, for squares and market-places, roads, conservatories, liquid manure, ship, barge, brickmakers, contractors, gold diggers, brewers, chemical works, and in wrought and cast-iron, copper and brass, for hot or cold liquors, &c. &c. Long barrel and hydraulic lift-pumps, with handles on planks; and engines of various powers, for wells of any depth.

PUMPS on HIRE!—The largest stock in England of single and double pumps, from 4 in. to double 12in. barrels, prepared for hand or steam power, ready for use on reasonable terms, at

BENJ. FOWLER'S, Hydraulic Engineer, Hot-water, Steam and Gas Apparatus Manufacturer, New Factory, Whitefriars-street, Fleet-street.

STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready, to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS, Engineers and Contractors, John's-place, Holland-street, Southwark, London.

FARM AND COTTAGE PUMPS.

WARNER'S PATENT CAST-IRON PUMPS, for the use of FARMS, COTTAGES, MANURE TANKS, AND SHALLOW WELLS.



Patent Pump £1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing 2 10 0
Larger sizes if required.

To emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and cheapest pump hitherto introduced.

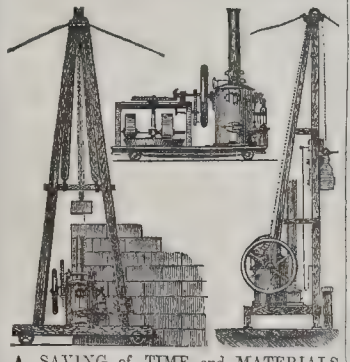
May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers,

JOHN WARNER AND SONS, 8, CRESCENT, JEWIN-STREET, LONDON.

Every description of Machinery for raising Water, Fire Engines, &c.

The usual allowance to the Trade.

MACHINERY for SAWING, PLANING, and MOULDING WOOD.—WORSSAM & CO. of Hertulan Works, King's-road, Chelsea, direct attention to the simplicity and economy of their inventions and improvements in the manufacture of the above. An inspection of their stock on hand is requested.



A SAVING of TIME and MATERIALS with solidity of Building.

NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 46, Albert-street, Manchester.

TESTIMONIAL

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERNETHY."

CHIMNEYS.

THE AERONOMIC SYSTEM of VENTILATION upon natural principles, tested by fifty years of practical experience, is now applied, without machinery, to Chimneys, Stove-grates, fire-places, &c.

Upwards of 2,000 Terminals for Smoke and Ventilation made to the accompanying pattern and on the above principles have been successfully applied by architects of the highest eminence.

They are ornamental, cheaply fixed, durable, and easily swept. The size for 14 inches by 9 inches flue, price 36*s.* Flues not requiring the convert and coping course, 20*s.* Apply at the Office of the Aeronomic Association, Upper Dorset-street, Bryanstone-square. Ample directions for fixing; and every one may adopt this admirable invention.

See the AERONOMIC REPORT.

A. VARNHAM, 41, BEDFORD-STREET, STRAND.



THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages obtained by FISH-JOINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 25th August. This invention not only saves a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar, and which fish-jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish-jointed rails that were under water and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

Eastern Counties Railway,
East Indian,
Edinburgh and Glasgow,
Egyptian,
London, Brighton, and South Coast,
London and North-Western,
Midland,
Merseyshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick.

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr. Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:—

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Midland Great Western (Ireland),
Northern Railway of France,
Newport and Abergarenny,
South Wales,
St. Germains and Versailles,
West Cornwall.

The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E.; G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

Londonderry and Coleraine,
East Indian,
Midland,
East Lancashire,
Londonderry and Enniskillen,

and several other lines.

Extract from the Directors' report to the last half-yearly meeting of the Londonderry and Enniskillen Railway.

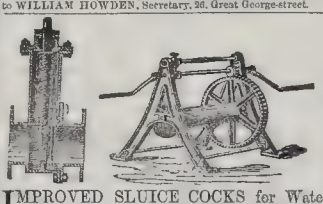
"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

"It has fully answered the expectations formed of it, and there can now be no doubt that its adoption, coupled with the lessened wear and tear from the use of light engines, will effect a material saving in the maintenance of permanent way."

The Permanent Way Company confines itself entirely to the granting licenses to use their various patents, which is done upon very moderate terms.

These several systems have been adopted hitherto to the extent of upwards of 600 miles on the above-mentioned railways.

Every information may be obtained by applying to Mr CHARLES MAY, C.E. 3, Great George-street, Westminster; or to WILLIAM HOWDEN, Secretary, 26, Great George-street.



IMPROVED SLUICE COCKS for Water, Gas, or Steam, brass-faced, and Sluices raised by square thread, engine-turned Screw, working in Brass Nut, in every respect as good as can be manufactured, are offered at the following prices per inch:

2 inch,	3 and 4-inch,	5 to 9-inch,	10 to 15-inch,
15*s.*	16*s.*	13*s.*	12*s.*

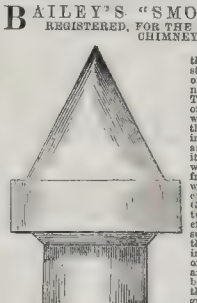
Lithographs of the improved self-lubricating, and various other constructions, with descriptions and prices attached, may be had on application.

Single-purchase Builders' Crabs, as above, fitted with Two Handles, and Wrought Iron Braces and Spindles, with Sett to throw in and out of gear, price 60*s.* each. Delivered in London free.

BARRETT, EXALL, AND ANDREWES, Kateegrove Iron Works, Reading.

Agents in London.—DEANE, DRAY, and DEANE, where the above may be seen.

BAILEY'S "SMOKE GUARD," REGISTERED, FOR THE CURE OF SMOKY CHIMNEYS.



The principle upon which this "Smoke Guard" is constructed is just the reverse, of those in ordinary use, namely, "to EXPAND the TOP" of the chimney, instead of contracting it; or, in other words, to double the area of the chimney-top at the opening, where the smoke escapes, and at the same time protect it in such a manner that no wind can enter the chimney, from whatever point or with what strength it may blow. An examination of the "Smoke Guard" will show that these two important points are effectually secured, and in such a manner as to increase the draught of the chimney in proportion to the strength of the wind, by the current of air which is made to pass between the guard-ring and the chimney-top, and the great success they have met with is the best proof of their efficiency. The form may be slightly varied, according to taste, without altering the proportions or principle, and may be securely fixed, made in any material, without the aid of any masonry.

Labels may be purchased by the half-dozen, at One Shilling each, or Licenses will be granted to manufacture these "Smoke Guards" to any extent, for the sum of Fifty Shillings, on application to D. and E. BAILEY, 272, HIGH HOLBORN, LONDON.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the admission of pure air through an



EXTERNAL WALL.

With single pulley, from 6*s.* each; with double pulley, from 8*s.* 6*d.*

These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—SHAYWARD BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough; and of all respectable ironmongers, builders, &c.

REGISTERED VENETIAN VENTILATOR,



ALSO,

DR. ARNOTT'S VENTILATING CHIMNEY-VALVES, at the following reduced prices:—

No. 1. Plain Valve	3*s.* 6*d.*
No. 2. Bronzed and feathered	4*s.* 6*d.*
No. 3. Bronzed and feathered, with trellis-work ...	4*s.* 6*d.*
No. 4. White and gold lines, with trellis-work	8*s.* 6*d.*

PATENT SPINDLED CHINA MORTISE FURNITURE.

White	1*s.* 6*d.* per set.
Black	1*s.* 10*d.* "
White and gold	2*s.* 6*d.* "

J. H. BOOBBYER and CO., Ironmongery, Brass Foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best manufactories at the lowest prices.

TO PAINTERS, PLASTERERS, BUILDERS, AND OTHERS.

100 PER CENT. SAVED by using SMITH'S newly-invented BRAZILIAN PLASTERERS' BRUSH.



This brush, manufactured from the best and finest Brazilian bass, will be found admirably adapted for lime-washing, water-washing, colouring, painting, cleaning paint, fronts, facias, &c. &c. It will perform the hardest and roughest work with the greatest ease and facility, and is, by a novel process in the manufacture, rendered smooth, pliable, and equal to the best of bristle, therefore equally adapted for work the most delicate. It resists all chemical action and all climates. ONE TRIAL ONLY will sufficiently prove it a remarkable saving in time, trouble, and expense.

The Royal Commissioners at "THE GREAT EXHIBITION" awarded to A. Smith a "Prize Medal," accompanied by flattering testimonials.

Sold retail by all respectable oilmen in the United Kingdom, and wholesale at the Manufactory, Nos. 8 and 9, Osborne-street, Whitechapel.

N.B. None are genuine unless labelled with the Royal Arms, and the Manufacturer's name and address.

WILLIAM ASPDIN'S PATENT PORTLAND CEMENT.—MESSRS. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable Cement that as their works are now in operation they are prepared to execute any orders they may be favoured with.
New Wharf, Abingdon-street, Westminster, Sept. 23, 1852.

PORTLAND CEMENT.—JAMES WESTON having commenced manufacturing the above Cement, begs to inform the trade in general that he can supply them with any quantity they may require, either at his Works, Mill-wall, Poplar; St. Andrew's Wharf, Earl-street, Blackfriars; or Middle Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, French and English Plaster, &c.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, as also at his Wharfs in London, 6, Upper Thames street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

PORTLAND CEMENT.—THOMAS FREEN and CO. having completed their works at WOULDHAM-ON-THE-MEDWAY for the manufacture of PORTLAND CEMENT, beg to inform their friends and the public that they are now ready to supply them with cement of superior quality on reasonable terms.—Roman Cement and Plaster of Paris Works, Tuscany Wharf, Canal-road, Kingsland-road.

6, South Wharf, Paddington.

PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 200 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this unproductive.
CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.
Agent for Southampton, R. L. FLUDER, American Wharf.

ROMAN and OTHER CEMENTS. Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who, in 1796, first introduced PARKER'S ROMAN CEMENT. Also Parian and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots, Trusses, &c.
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PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

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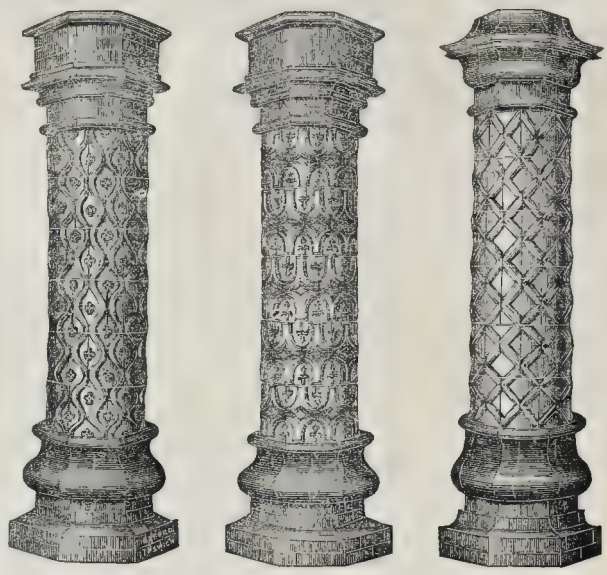
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Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.
But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively, is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 80 to 100, that is, 80 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.
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	AGENTS.
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LIVERPOOL	Mr. Richd. Cooke, 7, Sise-lane.
MANCHESTER	Messrs. Johnson and McGowan.
LEEDS	Mr. James Douglas.
SUNDERLAND	Messrs. T. and E. G. Jepson.
DEVONSHIRE AND CORNWALL	Mr. John Young.
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BELFAST	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
	Messrs. William Stevenson and Co.

The Builder.

SATURDAY, FEBRUARY 19, 1853.

A FLAMING paragraph in several of the morning papers, headed "Discovery of an Ancient Chapel," and giving particulars of a beautiful piece of architecture *found* under the house at the corner of Leadenhall-street, and opposite Aldgate pump, the result of "most diligent research," led us to make a journey into the City the other day. According to our habit (the habit of all we may suppose who wish to economise time), we made it the opportunity to look at two or three other matters in the road and neighbourhood, and we shall throw together some notes of what we saw. We knew, of course, that there were interesting remains under the house in question, believed to be part of St. Michael's Church, but surely, we thought, so many of the journals would not have admitted the statement referred to unless correct. At all events, it was necessary to see. The road, past Temple-bar (that ugly nuisance, which needs abating), was jammed up with gig, cab, omnibus, and waggon, forcibly illustrating the necessity of diverting the traffic by new thoroughfares. At present it is anything *but* diverting to the delayed passengers: the evil increases apace, and must we suppose force its own cure one of these days. But when? Yes, when? That's the question.

At the Fleet-street end of Chancery-lane, we observe two houses are being pulled down: one of them is of ancient character, with the upper floors projecting before the lower, upon quaint carved corbels, and we may suppose that the structures to be raised in their places will be set back in a line with the houses at the corner so as to widen the road. The absurd proceedings at the Holborn end of this same "lane," and in Middle-row, where obstructions have been rebuilt, prevent any feeling of certainty on the subject.

The pathways were as crowded as the roads, but through the wonderful aptitude which characterises London pedestrians, the streams pass on steadily, and with little obstruction. Here and there an oblivious and unaccustomed individual, of the same family as the builder recently described in an American paper,—who once nailed up his left arm so firmly between two boards of a fence that he was obliged to call for help, and on another occasion ran through the street with his hands held up about 3 feet asunder, begging the passers-by "not to disturb him, as he had got the measure of a doorway with him,"—gets jostled from side to side; but for the most part all move easily.

New Cannon-street, which makes a fine road, eases part of the City, and will do so more when the western end of it is completed. Have you noticed the immense building here, next St. Paul's Churchyard, which is being erected under the direction of Mr. J. T. Knowles for a well-known firm of Manchester warehousemen? If we were to say that the returns of this one firm amount to a million of pounds sterling per annum, we should surprise some of our readers, but probably not exaggerate. To do this business, they, of course, require large premises, and here they will have a warehouse 170 feet long, 90 feet in depth (at the west end), and 90 feet high. The brickwork is all done with Portland cement-mortar. There are seven floors, six of which are lighted from windows, and from large well-holes, inside, under skylights, and the seventh from the roof; so that six tiers of windows only appear in the elevations. The ground-floor is about 3 feet above the level of the street pavement, and the basement windows are carried up considerably above the ground-floor level; so that the basement is made almost as valuable for business purposes as ground-floors usually are. At the north-west angle of the building, near the goods' entrance, there is a "lift," worked by a small steam-engine, for the conveyance of bales and parcels to or from the several floors,—an arrangement by which a very large saving of time and labour is effected. The lower portion of the principal front is faced with Portland stone ashlar, 18 and 22½ inches thick, and the dressings of the principal entrance doorway are also of Portland stone. The other portions of the building are faced with white Suffolk bricks, excepting under the strings, cornices, &c. where red-brick facings have been introduced, for the purpose of more clearly defining some of the leading lines, and heightening the general effect. It is altogether a capital piece of construction. Alas the day! however, should it ever take fire.

From St. Paul's we made a slight *détour* to see some schools which have been built in Goswell-street, under the direction of Mr. Hesketh, for the parish of St. Luke, Charter House, and were about to be opened by Lord Granville. The frontage of the site is small, about 25 feet, but the land extends in depth 77 feet, and is at the back 40 feet wide. The building contains five school-rooms, with a play-place beneath, and will accommodate 1,000 children, including those who are to be taught *cooking and household work* (an excellent point), in the basement. Elementary drawing is to be taught here, too. Messrs. Haward and Nixon were the builders, without competition, and the sum expended is about 3,500*l.*: the site cost 1,450*l.* Floors of hollow-brick arches, on iron girders, laid with the metallic lava, bare brick walls, stone stairs, stout iron casements, and rough plate-glass, render the characteristic of the building indestructibility, but at the same time give a cold aspect (notwithstanding plenty of hot-water pipes), which requires to be relieved by colour, good prints, and other instructive decorations. We would have our school-rooms so attractive that their associations should all be agreeable. Educate! Educate! Educate! should be the universal cry. Let us substitute schoolmasters for policemen.

When we reached the house by Aldgate pump, we found many pilgrims besides ourselves: there was an excellent Dean with a dozen others diving down a trap and risking his shins over all sorts of firewood and rubbish; and we then saw, as we might have expected, that it was one of those periodical *discoveries* of well-known things which serve a penman's purpose. There was the crypt just as it has long been known. It is engraved in Wilkinson's *Londina Illustrata*. There is a view of it, too, in the *Gentleman's Magazine* (vol. LIX. p. 293), and it has been described again and again. We say "crypt," notwithstanding the assertion of the paragraphist who has just discovered it, and of others before him, that the building originally stood on the surface, and that the ground outside has been gradually raised. The level is doubtless higher than it was, but the construction of a small window close under the top of the groining, and the position of a doorway and steps still to be seen, seem to prove that it was always below the ground. It ought to be cleared, not merely of the loose rubbish now in it, but of the earth which has accumulated and buries all the lower part: it is very probable that some curious monuments would thus be brought to light.

After viewing the crypt, we went away to Southwark to see a very singular failure of the foundation in a warehouse built by Mr. Alderman Humphrey at Hays Wharf, and a more singular reparation of it. A great extension of business has been gained for this quarter by the Treasury order lately obtained, which gives to the foreign sufferance wharves of Southwark the right (not before enjoyed) of landing all foreign goods with the exception of tea, tobacco, wines, spirits, and manufactured silks. A great impetus has been given to building operations here, and the warehouse we are speaking of, other warehouses adjoining, and a new wharf, at present stayed by law proceedings, are amongst the results. The wharf is exactly opposite the Custom-house: the river front will be greatly improved, and the embankment is to be taken out about 20 feet further into the river than it is now. The warehouse in question is about 100 feet long, 60 feet wide, and 6 stories in height above the cellars. The whole area of each floor is open, as usual in such buildings, and the floor above is carried on iron columns at certain intervals. The two uppermost floors are formed with brick arches; the others have joists and girders. The concrete for the iron columns (about 3 feet in thickness) was put in, it seems, on the clay, instead of on the gravel, 6 or 7 feet deeper, and the consequence was, that when the building was finished the columns went down—some of them as much as 8 or 9 inches. The walls remained nearly as built. To remedy the disaster, new foundations have been formed for the columns on the gravel, and by means of twenty-eight powerful jacks, the floors are being forced up into their original position. Judging from what is already done, the remedy will be quite successful. To permit the movement of the arched floors up to a level, two courses were cut out of the arch near the outer wall, on each side, the whole extent of the building, a strong centering being first placed beneath it. When raised, the side arches were again made perfect, and wedged up.

Other structures are to be built on the site of what was the Borough Compter. Mr. Scovell has built an immense warehouse close by.

Amongst the other doings in the Borough, a new building is about to be erected at Potters-fields, Horslydown, for the Free Grammar School of St. Olave's and St. John's, from a design by Messrs. Allen, Snooke, and Stock.* The former school, built in Bermondsey-street in 1834, was bought in 1849 by the Brighton Railway Company, who required the site. The proposed structure is Tudor in style, to be built of red bricks with stone dressings, and will include the "Classical School," 88 feet long, 40 feet wide, and 51 feet high; the "English School," 70 feet long, and 35 feet wide; a court-room, 38 feet one way, and 19 feet the other, with a library of the same size, residences, and all conveniences.

Some time ago an interesting account of this school, by Mr. G. R. Corner, appeared in our pages, wherein might be noted what a great good may proceed from a small act. One Henry Lecke, of St. Olave's, in 1560 bequeathed 8*l.* to be applied towards the maintenance of a free-school in "St. Savyor's parish," but with the provision, that if within two years after his death a free-school should be built and established in "St. Olyve's parish," the said 8*l.* should be appropriated to this. St. Olave's vestry resolved to keep Lecke's 8*l.* in the parish; a charter was obtained from Queen Elizabeth; a large grazing field, "Horseydowne" (now Horslydown), purchased by the parish for a small sum, was assigned to the governors of the school and became valuable; worthy citizens made bequests, and so the school grew and grew, and the governors became able to apprentice out poor

* Twelve builders were invited to tender for the schools, the quantities being furnished. Six only did so, and here are the amounts they sent in:—

Rider	£27,240
Rigby	26,800
Lucas	26,000
Pipers	24,385
Myers	24,186
Jay	21,333

scholars, provide exhibitions at the two Universities, and have now contracted to erect a building at a cost of 23,235*l*. John Lecke's eight pounds per annum have done wonders, and fixed him in the memory of succeeding generations:—

> "——— Honours best thrive,
> When rather from our acts we them derive,
> Than our foregoers."

A crop of such Leckes would produce good seed.

But we must retrace our steps: we have seen enough for one morning.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

In his fifth lecture, Professor Cockerell observed that he had dwelt more upon Greek and Roman than on Gothic architecture, because the former styles were more analogous to modern practice; and by the application of new materials, and in other ways, had been rendered capable of an extraordinary development. It was true that in our recent churches the mediæval styles had been extensively revived; but this was properly rather termed "church building" than church architecture. The slavish spirit of the times had, indeed, scarcely invited or even permitted invention; and thus our modern churches were mere imitations, without the extent, magnificence, and costliness of those ancient models which were the glory of the country. The Houses of Parliament, however, must be regarded as a splendid exception to these strictures; and, together with their exemplars in the Low Countries, they deserved the most attentive study and consideration.

In recently examining the churches of Belgium, particularly those of the Jesuits, at Brussels and elsewhere, the lecturer observed that he had been astonished at the poverty of invention displayed in modern English churches, arising from the hurry and exigency of the occasion, from the limited funds at the architect's disposal, from the want of taste in pastors and masters (who, in fact, exhibited an abnegation of all judgment in themselves, and a blind reliance on the fallacious system of competition), from the trading and railroad spirit of the age, and, perhaps, from a want of genius in architects themselves. These, at least, were amongst the causes which had led to the present commonplace system, and especially to the absence of scheme and geometric beauty in plan and combination,—to a prosaic distaste of symbols, and a total absence of fine art in architecture. The mere copyist did not deserve the name of an architect: as well, indeed, might Nature be the same in all her various works.

Enlarging more particularly on the adaptation of plan to the peculiarities of site, Professor Cockerell referred to drawings of the churches of St. Antholin, Watling-street, and St. Benet Fink (the latter now removed), in proof of the ability and ingenuity of Sir C. Wren in that respect. The same characteristic merit was to be found in the churches of the Jesuits; and especially in those of Notre Dame de bon Secours, at Brussels, and Notre Dame de Hanswick, at Malines; drawings of which were also exhibited. Vitruvius had dwelt upon the importance of this point, and it was recorded to the honour of Vignola that his designs were generally made upon the spots on which they were to be exhibited, and only after a careful study of the locality. The theory of Durand, for the composition of both plan and elevation on the basis of squares of equal size, was highly objectionable; because, as before remarked, a different modulus was necessary for exterior features to that employed in interiors; and it might be taken as a rule that an internal column only two-thirds of the size of an external one would, in fact, appear as large as the latter, and 20 feet interior space was equivalent to 30 feet externally. Durand's "Parallels" was a work of great value and interest to the student, although the author displayed a want of fidelity and candour in his systematic depreciation of English edifices.

As an essential element of architectural composition, it was necessary that ornament and detail should be subservient to the character, use, and purpose of the building; and that the church, palace, mansion, hospital, prison, fortress, and villa, should each at once display its object and destination. The mediæval architects exhibited much boldness and skill in the west fronts of their cathedrals and other large churches, which conveyed an idea of the vastness, altitude, and general arrangement of the interior,—as in Peterborough Cathedral, the west front of which resembled a section of the church itself. The revival architects and the Jesuits adopted a different system, endeavouring to produce a pompous effect by the use of order above order, with several tiers of windows, divided by horizontal bands, without any regard to the interior arrangement, indicating rather the different floors of a palace than the vacuity of a church. Palladio, however, had avoided this mistake, and the west front of San Giorgio was marked by a lofty order, perfectly corresponding with the height of the nave, the aisles, in like manner, being represented by smaller subordinate orders. In St. Paul's Cathedral, Wren had skilfully combined both of these systems. Whilst the lower order of the west front corresponded in height with the internal order, its entablature formed a connecting bond with the north and south sides of the church; and both the orders of the portico being open, and recessed to a considerable depth, the idea of a vast open interior was conveyed to the mind. Generally speaking, the mediæval architects were more idiomatic, elementary, and sincere than the moderns. With them, a hall was a hall, and a chapel a chapel; roofs were not concealed, but rendered prominent, and appropriately ornamented. A pedantic adoption of antique models, and an imaginary necessity for perfect uniformity and symmetry, had led the moderns into a departure from this good faith and simplicity. The formal regularity of plan in Blenheim, Castle Howard, and similar buildings, was far less agreeable than the convenient though irregular arrangement of Gothic buildings. In all designs use and purpose should be first considered, and such a style of ornament superadded as might best illustrate the abstract and poetical character and conception of the work. Right ornament would follow a sound structure; just as proper words would offer themselves to express strong and well-felt emotions.

In considering orthographical composition, Professor Cockerell dwelt upon the effect of *gradation*, as exemplified in pyramidal composition, and in the employment of the same or similar features in different sizes and positions, so as to produce grandeur and magnitude. This effect of gradation was illustrated by drawings of the temple on the Roman capitol shown in contrast with the propylæa and other subordinate buildings; and of the Forum Transitorum, which was surrounded by a columnar order of inferior height to that of the temple. The same system of gradation—ascending from a minor order to a larger one—was also observed in the Belgian churches already referred to. That of the *Grand Beguinage*, at Brussels, had much loftier columns in the choir and transept than in the nave; and great ingenuity was manifested in the connection of the whole by one entablature. The perspective effect produced by this interior arrangement was deserving of careful study; for whilst the near columns, on entering the church, were sufficiently large, those which were more remote, together with the high altar and other distant objects, were seen to much greater advantage.

In noticing the assistance which architecture had derived from science, especially in facilities of transport and the use of new materials, the lecturer alluded to the employment of the fragments of classic art, in mediæval times, in the formation of those barbaric fronts of Italian churches, piled up without regard to order, which had excited the praise of some travellers and critics. Amongst the latter he referred to Mr. Ruskin, a master of æsthetics, whose works might be recommended as a powerful cordial, to warm and animate the enthusiasm of the student, but who was not to be commended for his judgment in respect to particular styles. When the wealth of Italy encouraged the re-opening of quarries, the use of old materials was abandoned, and architecture assumed a corresponding independence; but it was long before the orders attained their due dignity and importance. At first, three-quarter columns were attached to walls. Bramante afterwards ventured upon a trabeated system of construction: The works of Palladio were still bolder; but it was not till the time of Bernini that the true effect of the column, unaided by walls or piers, was displayed.

After some remarks on the importance of faith in the great masters, as the first quality which the student could bring to the study of architectural composition, and on the necessity of critically analysing their works, with a view to trace the causes of their merits and defects, Professor Cockerell proceeded to notice the distinguishing characteristics of style presented by the works of the leading architects of the Revival—illustrating his observations by drawings of their most famous buildings. This descriptive sketch embraced the works of Brunelleschi, Bramante, Rafaelle, Michelangelo, Palladio, Vignola, Sansovino, Bernini, and Borromini.

THE DIABLERIE OF ARCHITECTURE.*

A FRIEND connected with the army in Burmah sends me an interesting account of the condition of "the fine-art architecture" in that distant quarter of the world.

It appears that the architectural skill of a certain officer of artillery, with whom the delineation of Burmese buildings is a favourite amusement, had reached the ears of the learned professors of a national monastic college or "seminary," of the art which has existed for many generations on a so-called enchanted island on a tributary of the river Irrawaddy. Accordingly, a polite although singular message was transmitted to this gentleman from the chief dignitary, abbot, or principal, of this institution, expressing the satisfaction which it would give to himself and his learned colleagues if the person addressed would take the trouble "to visit in the benign spirit of a peaceful magician, and for the purpose of displaying the necromantic secrets of his powers, the honourable, sacred, and most renowned seminary of Vitree-oo-voos the Old, centre of the necromantic spheres, fountain of the unknown river, and high reservoir of Um-buggee;" this concluding term being, as it appears, the designation of wisdom or necromancy in general, and the personage called Vitree-oo-voos the Old being no other than an ancient acquaintance of our own under a new name and dignity. The invitation was accepted, and the visit paid; the result is told in the following translation of the minute of the college, which may be suggestive in various ways to the wisest among us.

O honour unto Vitree-oo-voos the Old! O reverence unto Um-buggee! O confusion and colic unto Mulciber,† the Red-hot!

On the seventh morning of this seventh moon, after due observation of the necromantic spheres, was there a command sent from the great lord Stock-brickee, successor, younger brother, and chief priest of Vitree-oo-voos the Old, and great rider of the delirious elephant with a thousand sails [intended to typify the Fancy or Imagination], to one Jones, a barbarian magician of fame, that he should come unto the honourable, sacred, and most renowned seminary of Vitree-oo-voos the Old, centre of the necromantic spheres, fountain of the unknown river, and high reservoir of Um-buggee, to display unto the great lord and his learned and honourable brethren the necromantic secrets of his powers.

On the eleventh day of the moon there came a messenger from the said Jones, bearing a humble reply to the above command; namely, that he "presented his compliments to the great lord Stock-brickee, acknowledged the honour of his invitation to visit the seminary of Vitree-oo-voos the Old, and begged to say that he would do himself the pleasure of visiting that seminary

* Some of our readers may perhaps consider an apology necessary for the devotion of so much space to the following *jeu d'esprit*. If so, they will find it in our desire to give variety to our pages, and to induce thought by collision.—Ed.

† A remarkable coincidence with Milton, who gives this very name to the chief architect of Pandemonium.

on the fifteenth day of the present moon, weather permitting."

On the fourteenth day of the moon, came there three messengers (of the Burmese people) from the said Jones, bearing a certain formidable box containing the engines of his secret powers.

The three messengers were immersed thrice in the water of the unknown river, and placed in confinement, because of the mysterious aspect of their burden, and they were threatened with the bastinado if any danger should appear.

The box of the engines was deposited in the stronghold, and the librarian was directed carefully to examine it. That officer detected therein unknown evil odours, as of gunpowder and brimstone; and on shaking it, he heard the sounds of volcanic action and the moans of imprisoned genii. As this could not be construed to be otherwise than dangerous, the three messengers were moderately bastinadoed, that the word of the great lord and his brethren might not seem to be broken; for is it not sacred to the honour of Vitree-oo-voos the Old?

To the eye the box of the engines presented the appearance of a strange wood, bound with iron. It was inscribed with various magic symbols, namely these:—"Passenger per *Ally Croaker*—J. Jones, Esq. Roy. Artill.—glass—jolly old Jones—No. 5—*mihi et beati Martini*—this side up—keep dry—you are particularly requested not to disfigure this box—you be blowed." There were also numerous delineations and devices of human and other forms, of which a drawing is appended. The librarian imagined that several of these figures were endowed with powers of motion, of which they availed themselves occasionally when he was unobservant.

On the fifteenth day of the moon, at the hour of noontide, there arrived at the seminary of Vitree-oo-voos the Old, at the gate thereof by the source of the unknown river, the barbarian magician Jones. He rode on a most fierce and dreadful horse, and was clothed in the ordinary manner of the barbarians his people. His eyes were shielded by spectacles of a blue colour, partially concealing the fire with which they blazed; his hair was of a most burning red, and his beard of the same; his face likewise was even still more red; whereby the said Jones presented in all a very Mulciberian aspect. Several of the necromatic figures delineated on the box of the engines now proved to be portraits of this magician.

There accompanied the magician a single attendant or dæmon. He was of huge form and most fiery countenance; he was drunken with the liquor of the barbarians, and he rode on a prodigiously high and rampant horse.

The magician and his dæmon were welcomed by the librarian (although with many misgivings) at the gate by the source of the unknown river; Jones he conducted to the outer chamber to the presence by the great lord and his brethren; but the dæmon he conveyed to the stronghold where was the box of the engines. The magician himself was of mild and respectful demeanour; but the dæmon was most boisterously mirthful, and several times patted the librarian on the back, telling that officer to go it while he was young, and inquiring of him what was the odds so long as he was happy, at the same time repeatedly stating that his name was Corporal Timothee-o-Reillee, from the county of Cork.

The great lord and his honourable brethren having duly welcomed (although with many misgivings) the barbarian necromancer, they conducted him to the banquet-chamber, where there was spread forth a repast of the sacred herbs. But the barbarian would not partake of the sacred herbs, but called for his dæmon, who brought to him certain victuals, consisting, as it was said, of the flesh of abominable hogs encased in the bread of the barbarians. Neither would he drink of the water of the unknown river, but called to his dæmon to produce a certain bottle (of the most evil odour) from which he quenched his thirst. O Muleiber!

During the repast the great lord Stock-brickee, who may not eat but alone, proceeded to the stronghold to examine the box of the engines and the dæmon of the magician. After scrutinising the said box and pronouncing the above description thereof to be correct, that great lord turned to inspect the attendant dæmon. Him he found seated in a cloud of noxious smoke, produced from a strange engine in his mouth; he was also engaged in drinking from the bottle of evil odour above mentioned, and in singing vociferously various unintelligible dæmonian songs. Upon the great lord Stock-brickee thus turning his attention to him, this dæmon removed the smoke-engine from his mouth, and, addressing that great lord impertinently by the title of "old boy," profferred unto him the bottle to drink therefrom, at the same time distorting his countenance into a hideous form, and expressing the hope that that great lord would know him again. The great lord thereupon ordered the dæmon to be forthwith bastinadoed for the benefit of his mind; but behold! when the executioners, two in number, advanced to execute this order, the dæmon seized them by their ears and brought their heads into the most violent collision, swearing at the same time by evil spirits that they should swallow their teeth. The great lord Stock-brickee thereupon threatened the dire displeasure of Vitree-oo-voos the Old, but the impious dæmon avowed with laughter that he regarded that deity no more than a red herring; and when the great lord proceeded to sing from Vitree-oo-voos the Old the theme "Decor," the dæmon violently interrupted him, clenched his hands, projected himself into a wicked attitude (like certain of the magic figures on the box of the engines), and, dancing wildly around the great lord Stock-brickee, declared with menacing gestures that, unless that great lord did forthwith take himself off, although he should be sorry to seem uncivil, he would pitch into that great lord's wind. The great lord, therefore, retired to the banquet-chamber, and apprised the magician Jones of the refractory demeanour of his dæmon, and his refusal to be bastinadoed for the benefit of his mind; but that magician stated that the dæmon could always take care of himself,—that, although somewhat unruly, he was a most useful servant, and that he should advise the great lord and his friends to avoid all interference with him for the future.

The repast being now ended, the great lord Stock-brickee proceeded in state to the chamber of audience, the perfumed chamber of Um-buggee, perfumed with all the editions of Vitree-oo-voos the Old; and, having put on the spectacles which never dim, and hung around his neck the sacred tooth of Vitree-oo-voos the Old, took his seat with the music of cymbals upon the throne of the delirious elephant with a thousand tails which is set upon the ivory altar of Vitree-oo voos the Old. The learned brethren of the seminary were then introduced, made their obeisances to the floor, put on the spectacles which never dim, and took their seats in the magic circle of Um-buggee. The barbarian necromancer was also introduced; but he made no obeisance, neither changed his spectacles.

The librarian having sung the theme from Vitree-oo-voos the Old, "Dorus, the son of Hellenus," the magician Jones was called upon to develop the secret of his powers.

Proceeding to the mysterious box in the stronghold, the magician, with his dæmon, removed the lid thereof. During this operation the great lord and his brethren directed that with the usual ceremonial and amidst the music of cymbals the collection of all the editions of Vitree-oo-voos the Old should be taken from the golden shelves of Um-buggee and distributed in necromantic order around the chamber. "For," said the great lord Stock-brickee, "may there not be evil and Mulciberian essence in the doings of this barbarian magician? I like him not, neither his box nor his dæmon."

Presently the magician entered, and deposited before the great lord and his brethren a certain engine of wood. It was a flat and seemingly harmless engine, with four straight sides and four equal corners. When laid upon the sacred table it exhibited no signs of motion, except that one of the four corners thereof displayed a disposition to be elevated. This circumstance the magician stated to arise from the warmth of the climate having twisted the engine from its original integrity; but he went on to say that, lest the virtue of the engine should be compromised thereby, he had caused the edges thereof to be "shot" a few days before. This saying excited grave suspicions in the minds of the great lord and his learned brethren; and when, upon inquiry, they were informed that the engine had been so shot by the obstreperous dæmon then in the stronghold, those suspicions were much increased: wherefore the opinion of the great lord and his brethren was conveyed to the magician, "that the circumstance in question was a most unfortunate one, to say no more." The designation of the engine was stated to be "Drawing-board." The great lord and his brethren, viewing with serious distrust the alleged injurious effect of the climate upon this engine, and not failing to perceive that any such injury, if so produced, must have been instantaneously cured, if the engine were not evil, by its introduction into the perfumed atmosphere of the chamber of Um-buggee, and the presence of the altar of Vitree-oo-voos the Old, at once ordered that, as a matter of precaution, this engine, and all the others of whatever kind, together with the box which contained them, and also the dæmon in attendance, should be thrice immersed in the water of the unknown river. But to such a measure the magician declared he could not in any way consent; first, because water would destroy his engines; and, secondly, because any attempt to put his dæmon into water would infallibly result in serious consequences to the persons engaging in the attempt, unless an equal quantity of liquor were mingled with the water, in which case he might possibly consent to the proposal in a modified form. It was therefore decided by the great lord and his brethren, as a species of equivalent, that the engine then before them should be reconveyed to the stronghold by the magician, and that he and all his engines, and their box and the dæmon, should there have solemnly sung over them by the librarian, the entire theme, "Balistæ, Catapultæ, and Scorpions," with the various readings thereof, from Vitree-oo-voos the Old. This measure was therefore forthwith carried into execution, the magician Jones having in the first place produced a smoke-engine from his pocket, which he proceeded to use in the manner of his dæmon.

The singing of this theme over the magician and his engines, and their box and the dæmon, being at length concluded by the librarian, it was found that the great lord Stock-brickee had employed the interval in delivering before his brethren a dissertation on "scamilli impares;" but hastily concluding his remarks, that great lord directed the barbarian magician to be again introduced. But Jones now desired that his compliments might be presented to the great lord and his brethren, with the request that they would excuse him until he had exhausted the smoke-engine then in use, as otherwise the remnant thereof would be wasted. The great lord therefore proceeded with his observations on "scamilli impares;" till presently the magician Jones re-appeared, with his engine, formerly introduced, which he again laid upon the table. But the corner was still elevated!

The magician next introduced a certain cylindrical apparatus, which was girt around with a cincture of red cord. Releasing this cincture, behold! the apparatus, of its own accord, did unfold or expand itself forth, and its substance did separate into numerous thin strata, all of one dimension, and four-sided, delicate as the ivory tablets on which we write, but of prodigious size. These the magician stated to be "double elephants." On being closely examined, by order of the great lord and his brethren, the cabalistic words, "J. Whatman—Turkey Mill—1850," were detected thereon—not written, but ingrained in the substance of the engine, and the same in all alike. After deliberating for a time upon the nature of these engines, the great lord and his brethren pronounced that they must be none other than the fabric of the cloth of the barbarians melted like wax in the fire of Muleiber the Evil.

Following this, the magician Jones introduced a certain little box, such as the barbarians employ to hold their drugs. This contained four singular metallic engines, diminutive, but vicious,—for upon being laid hold of by the librarian, they did instantly and severely prick the fingers

of that functionary, although Jones himself appeared to handle them with impunity. The proper necromantic operation of these engines, however, was speedily made manifest; inasmuch as the magician, seizing one of the "double elephants" before mentioned, and prostrating it upon the "drawing-board," did so transfix it thereto by means of the said four engines, one at each corner thereof, that it lay flat and passive, with no more than an occasional edge of innocuous indignation. The four engines were by Jones denominated "Drawing-pins;" but the great lord and his brethren declared after deliberation, that they should be called "Transfixæ."

Thereafter the magician brought into the chamber another engine, of a form the most unprepossessing and necromantic ever beheld. To describe this engine is altogether impossible; but the magician gave it the name of "Tea-square." The incomprehensible operation of this engine it is likewise beyond the power of language to convey. Applied to the "Drawing-board," it moved thereon in every direction in perpetual coincidence in a manner which occasioned the utmost alarm,—a sentiment which was still further augmented by the magician announcing that, in order to ensure accuracy in its action, he had caused this engine likewise to be carefully "shot" by his dæmon beforehand.* K.

IMITATIONS IN DECORATION.

My attention has just been called to an article in the *Builder* (*ante*, p. 50), which proposes to review an extract from a paper read by me before the Architectural Institute of Scotland, and which appeared in a previous number of your journal. * * * * [The writer proceeds to comment on the various passages of the article *seriatim*, but we can find room only for what relates to the subject proper.]

As to the subject proper, "E. L. G." denies —first, that it is a question of æsthetics, and asserts it to be one of ethics. If it belongs to ethics our moral philosophers have been guilty of a strange omission, and the sooner it is supplied by an edition of Paley, Stewart, and Hutcheson, with notes and emendations, the better.

If a fir door *veneered* with rosewood is not intended to look like solid rosewood, so neither is one which is *painted* in imitation of the same material.

If there is an attempt at *deception* in the one case there is an attempt at deception in the other, although the deceptions themselves may be slightly different in character. But the reviewer under this same head objects to graining, because for the objects of imitation the painter must go behind the scenes and represent objects which nature does not intend to exhibit. Surely this crime, if it be one, does not lie at the door of the painter: the sawyer and the joiner are clearly the guilty men. But the next charge, or rather the same charge made under another form, is not a little puzzling.

It is this, that grainers imitate the "processes" of nature instead of her "results." I confess my total inability to discover a reason for calling the outside of the bark of the tree a result and the inside of it a process. A process is "a progressive course,—a tendency."—*Vide* "Walker." Not having yet seen any walls or doors painted in imitation of a "tendency," I shall refrain from dogmatising on the effect that might be produced by such a decoration; but when our decorators do adopt such copies it is to be hoped, since "E. L. G." will make this a question of ethics, that all their tendencies shall be of a moral description.

The reviewer objects, it will be observed, to the imitation of these processes, as he calls them, because they are "inimitable." Ruskin objects to them, because he finds them imitated so closely as to deceive. "When doctors differ, who shall decide?"

"E. L. G." admits that I show Ruskin's defence of gilding to be fallacious: he himself attempts to defend it on other grounds, but is not more successful. Gilding, according to his views, must be used only on substances that show by the forms we give them that they are not metallic; and this, lest it should be mistaken for a solid substance instead of a mere coating. Would "E. L. G." wash the gilding from the leaden dome in St. Petersburg?—and are gilded window cornices to be abolished, because castings in brass have been introduced to serve the same purpose? Even, according to "E. L. G.'s" own views, there is no use for such refinement. Gilding is not, and never was, used for the purpose of deception. It is applied partly for the brilliant effect which it produces in decoration,—partly, no doubt, as an expression of cost. In no position is this coating more effective than on a rich iron balustrade; and is a decorator to be prohibited from using it in such a position, because, forsooth, some ignoramus may mistake it for solid gold?

It is said that I "rightly enumerate the three motives of all coatings or facings,"—

1st. Beauty.
2nd. Durability.
3rd. Expression of cost.

With deference, I must adhere to my own arrangement, in opposition to the opinion of "E. L. G." Beauty, and not durability, is the *primary* object of decoration.

"E. L. G." attributes to me, under this head, a statement to the effect that, suggesting ideas of cost is one of the aims or uses of art. There is no such statement in the paper he has undertaken to review. I enumerate as above, in the order of their importance, the motives which may be supposed to influence one in preferring,—for certain purposes,—imitations of woods and marbles to other styles of painting.

The motives are much the same as those which might influence a lady in choosing a dress. The first or second may be reckoned the more important according as her taste may overcome or be influenced by motives of economy. The third prevailing cause, the expression of cost, or in other words, the condition that the article be not paltry,—that it looks worth the money which it cost—will not be left out of view. The writer continues,—

"Artistic imitations of wood and marble are to be used, we are told, for their durability compared with other painting. Now, if Mr. Purdie will propose to grain the girders of the next railway-bridge, or the crane on the next warehouse he erects, he will learn the value generally set on this admirable contrivance for durability. Again, if it be beautiful, there is nothing in which beauty is more sought than in personal ornament and clothing. Surely here is room for a great hit: cannot the manufacturers bring out the rosewood ribbon, bird's-eye maple muslin, granite-pattern shawls, and Sienna waistcoats? It ought to be registered."

There is a work entitled, "Rudimentary Treatise on the Principles of Design in Architecture," by Edward Lacy Garbett, of which "E. L. G." may have heard. It is a book which I have read with much pleasure as well as profit, and in the principles of which I generally coincide, although differing on some points from its author. At p. 47 of this book occurs the following passage:—"The same form which is eminently beautiful in a particular situation, or applied to a particular purpose, may be eminently the reverse when its situation or destination is changed."

He will also find at p. 36 of the essay which he has undertaken to review, the following among a statement of conditions,—attention to which is considered necessary in the employment of imitations of woods and marbles:—

"1st. That they be not employed where the material represented would of itself be out of place or inappropriate.

2nd. That no object be painted in imitation of one material which, from its form, construction, or application, was obviously or necessarily composed of another."

"E. L. G." is welcome to all the profits that may be derived from his discovery, but before incurring the expense of his patent, it may be prudent to pause and consider the bearing of the above passages on the speculation,—whether rosewood ribbons and Sienna marble waistcoats can be made without infringing the principles which the author I have quoted agrees with me in supporting. * * * Thomas Purdie.

Obelisk in Whitechapel.—The great obelisk exhibited in 1851 has been purchased by the inhabitants of Whitechapel. It is now being erected, it is said, in the centre of the Haymarket.

THE VENTILATION OF GUY'S HOSPITAL.

The additional buildings erected in connection with Guy's Hospital, lately mentioned in the *Builder*, present the most complete instance in the metropolis of what has been termed the *descending* system of ventilation. The range of buildings, half of which only is finished, consists of a lofty central composition, with wings of four stories in height, extending to a distance of 200 feet from the centre on each side. Each angle of the central compartment is carried up as a tower, and finished with an open lantern and cupola, designed for the supply of fresh air to the building.

Within the lantern, a semi-cylindrical shield, revolving on its centre of gravity, and acted upon by a large gilt vane above the cupola, presents its open side always towards the wind.

There is no other supply of fresh air than that which enters by these lanterns, the elevation of which places them above the smoke stratum of the surrounding neighbourhood, and enables them to command at all times a supply of the purest air. Standing on the sill of the openings in the lantern, the smoke from the adjacent houses, &c. may be seen floating below the feet of the observer, nor has it in any instance been known to rise to the level of the lantern. There is an uninterrupted communication between the lanterns of the two central towers and the basement of the buildings by a shaft, in each case upwards of 100 feet sectional area, and the air is carried forward from the bottom of the fresh-air towers to the extreme end of each wing; each fresh-air tower supplying its own side exclusively. The whole basement under the main portion of the building is devoted to the fresh-air channels, which convey air to six distinct sets of warming apparatus.

The apparatus consists of triangularly flanged pipes, something like the letter A in section, the flanges being projected from each angle. The advantage of this arrangement is, that a larger conducting surface is presented to the current of air (two cylindrical boilers, heated by one fire, serve the whole of the apparatus). The pipes are arranged in parallel lines along the different walls, and run the whole length of the building, thus avoiding the great loss and unequal distribution of heat inevitable when it is attempted to convey warmed air from a heating chamber along horizontal flues of great length.

The object of the division of the apparatus into six distinct portions is, that each floor of the building may have its own supply of warmed air, with the power of independent regulation. The flues for the conveyance of the warmed air to the different wards are constructed in the walls, terminating in each case beneath the cornice of the room. The aggregate area of these flues is adequate to the supply of 60 cubic feet of air for each patient. The quantity of air supplied for each individual immensely exceeds the allowance usually made for these purposes. The large body of air poured into each ward has a temperature much lower than would necessarily be the case were it attempted to warm a building, by supplying only 5 cubic feet of fresh warmed air per minute for each individual. It is obvious that in the latter case, in order to maintain the required temperature, the incoming air must be so heated as to become as unfit for respiration as the vitiated air itself. This is the secret of the repeated failures that we hear of, even where experienced parties are employed. They do not admit air enough, and are obliged to overheat it, in order to warm their buildings.

The arrangements for the extraction of the vitiated air are on the same scale as those for the supply of fresh warmed air. By a similar arrangement of flues built in the walls, the vitiated air is taken off near the floor, and conveyed into a horizontal channel in the roof, having a sectional area for each wing of 70 feet. A rarifying apparatus is arranged in this channel, for the purpose of ensuring an active summer ventilation. The vitiated air channels from each wing of the building terminate in one central shaft, having an area of 200 feet; equal to the *two* fresh-air shafts.

Besides the vitiated air from the wards, &c. this shaft is to receive the vaporized air from the drying-closets, and the smoke from the steam-boilers, the warming-apparatus boilers,

* To be continued.



WESTMEON SCHOOLS, HANTS.

the hot-water supply boiler, and all the fire-places in the establishment, there being no other chimney in the building, which, when completed, will cover upwards of 300 squares.

The amount of extractive power is equal to the entire removal of the air of the building every half-hour. The whole of the arrangements for warming and ventilation are upon the plan of the late Mr. John Sylvester, and the practical superintendence of the work, and the erection of the warming apparatus, have been entrusted to Mr. Rosser, contractor for this department of the works.

The cost of the whole of the warming and ventilating apparatus, the hot-water supply boiler, tank pipes, and bath fittings, with the stoves and cooking apparatus, has been under 2,500*l.* or about 8 per cent. on the cost of that portion of the building already executed.*

B.

WESTMEON SCHOOLS, HANTS.

THE schools are built to accommodate 200 children, at a cost of about 800*l.* the principal part of which was contributed by Mrs. Touchet, of the Grove, Exton. The first stone was laid in May last, and the schools were opened with suitable solemnities on the 21st ult.

The building is of faced flint, with Caen stone dressings: the roofs are open in the interior: the floor is of oak, and there is a bell turret in the rear. The building accords with the church which stands at a short distance behind it. The architect is Mr. John Colson, of Winchester; and the builder Mr. T. Lewis, of Westmeon.

PROVINCIAL NEWS.

Stow Beedon.—A small church at Stow Beedon, near Attleborough, was reopened on Thursday week. The church and chancel have been newly roofed: indeed, the edifice has been nearly rebuilt, the cost of which will rest very heavily on the Rev. C. D. Reade, the vicar. The restoration is in the Perpendicular style, although on the north side of the church there are two small early Decorated windows, and in the north wall of the chancel very early Lancet windows, which were blocked up and plastered over. They only required to be unstopped, and have been filled in with stained glass, executed by Messrs. King, of Norwich, glass artists, from examples in Hildersham Church, Cambridge. The same artists were employed in the restoration of the original windows. The bell turret on the west gable is after an example at a village church in Devonshire. The stone work has been supplied by Messrs. Watson and Son, of Norwich. The internal work is very plain, and of deal, stained. The screen between church and chancel, and seating of chancel, are in oak of plain character. The church is warmed and ventilated by a stove in the vestry, supplied by Messrs. Parlour, of Norwich. The accommodation now provided is for 206 persons, two-thirds free. The architect employed in designing and carrying out the works was Mr. John Brown, of Norwich; and the builder and general contractor, Mr. W. S. Peebles, of East Dereham.

Charlecote.—The new church here, erected on the site of the old one by Mrs. Lucy, of Charlecote Park, was opened on the 2nd instant by the Bishop of Worcester. The church is in the Decorated style, from designs by Mr. J. Gibson, and consists of nave, tower, chancel, and Lucy chapel. The roof is groined stone, and the chancel is fitted with oak-canopied stalls and brass altar-screen. The pulpit, reading-pew, and open seats, are all of oak. Nearly all the windows are of stained glass, presented by members of the Lucy family, with the exception of one given by the architect, and another executed and presented by the glass-stainer, Mr. Willement.

Tortworth. — Extensive buildings, forming Tortworth-court (Gloucestershire), have been erected for the residence of the Earl of Ducie, and are fast approaching completion. It is expected that the Earl will take possession of them about the commencement of June next. The walls of the entire buildings externally are built of a fine laminated sandstone of good colour, somewhat resembling the forest of Dean grey stone, and obtained from his Lordship's quarry, about a mile distant from the works. The inner casing of the walls is of brick. The dressings of the windows, doors, arches, &c. are of stone from the three quarries at Cross-hand and the Farleigh Down quarries at Bath. The buildings, comprising the mansion and offices, stabling and offices, and a chapel to contain 600 sittings, are all in the Tudor-Gothic style, and cover an area of nearly two acres. The south and west sides are surrounded by a very extensive terrace, and on the east, opposite to the porch, is the portal gateway. The principal feature of the whole is the lofty tower, 40 feet square, emerging from the centre of the mansion, surmounted on the top by a very high-pitched roof, terminating with a lanthorn cupola and vane. The architect is Mr. Teulon, and the contractor Mr. Joshua Higgs. The carving is executed by Mr. Purday. The cost of the works up to this period is said to be 45,000*l.*

Clifton.—All hopes of proceeding with the suspension-bridge appear to have been abandoned. It has been stated that the wrought-iron, so long ready, has been sold to the West Cornwall Railway Company.

Taunton.—A proposal, as appears from the *Taunton Courier*, has been formally made by the churchwardens of the parish to obtain permission of the vestry for the repair and restoration of the tower of St. Mary's Church by a rate. The amount required, as per printed report, is 3,595*l.* 2s. 9d. exclusive of surveyor's commission and contingencies. It is proposed to restore every feature and moulding to as good a condition as that in which its original builder left it, including the 100 carved angels and heads, and all the carved gurgoyles and niches. Archdeacon Denison has requested the churchwardens to lay before the vestry the dangerous state of portions of the tower; but the report referred to says that the foundations are solid and secure, and adds that many of the present evils must have manifested themselves shortly after the completion of the building 350 years ago. The parishioners have since resolved, all but unanimously, to carry out the restoration as proposed; providing for 2,000*l.* of the outlay from the rates, and trusting to subscriptions and to money in hand for the remainder. Mr. Badcock, who seconded the resolution, at once announced that he would himself contribute 100*l.*

Abergwyddon.—On Wednesday in week before last, the first stone of Sir B. Hall's new church, at Abercarn, in the village of Abergwyddon, valley of Abercarn, was laid by Lady Hall. The church is to be built on the simple model of the ancient British Christian churches in Wales, and of the materials of the county of which the one of Llanover is a specimen. It is to contain 400 or 500 persons.

Liverpool.—New Roman Catholic schools are being erected in Fontenoy-street and in Edgar-street in this town. The school in Fontenoy-street, according to the *Journal*, is being raised by subscription, and will be in connection with the chapel of "Holy Cross." The building is in the Pointed Gothic style, but capacity of accommodation has been studied rather than external effect. The building, which is 75 feet in length and 47 feet in depth, is (above cellaring) three stories high, and will be able to accommodate not less than 1,800 scholars. The building, the façade of which derives its chief ornament from the mullioned windows, is of ashlar stone, rough-faced, with tooled dressings. Doors are situated at each end of the building, affording a distinct entrance for boys and girls; and in a niche above each will be placed figures of "Faith" and Charity." The roof will be double-ridged with an ornamental cresting. The cellars will be let off for storing dry

* Our readers will thank us for this description of the system, but it is necessary we should mention that its complete efficiency has yet to be tested by time.

goods; and on the first story will be the boys' school. The girls', immediately above, will accommodate 600; and the upper story, the infants' school, will accommodate a like number of children. The building is heated by hot air, and attention is paid to ventilation on the "Polmyse" method. The contractor for the building having failed, the committee, according to the *Journal*, have taken the work into their own hands, and employ men by the day. The estimated cost of the building is 2,400*l.* about one-half only as yet subscribed.——"St. Thomas and William's School," Edgar-street, is a building of much more architectural pretensions, but the cost, it is said, will not exceed 1,700*l.* and which was provided for by Mr. T. Gillon, now in Mexico, who gave 2,000*l.* for the purpose. The school will accommodate 1,500 children. This building, which is also in the Pointed Gothic style, is of rough masonry, and has three fronts, the two principal in Edgar-street and Marybone. The doorway is situated at the junction of these two thoroughfares, and is surmounted by an octagon tower about 65 feet in height. There is a double niche above the doorway, in which will be placed a figure of St. Joseph The front to Edgar-street is 71 feet in length.——The new road from the west side of the Custom House to the Queen's Dock is now nearly completed, and partially opened for traffic. ——Mr. James Rose, of Birkenhead, has made an offer to the health committee to deodorise for a period of fifteen years, by means of peat charcoal, all the ashpits in Liverpool, for 80,000*l.* on condition that the committee will spend 50,000*l.* in erecting tanks, and also construct 1,500 additional water-closets.

Manchester.—The Free Trade Hall here is to be pulled down, prior to the erection, on the site, of a much larger and more architectural hall. A public company, with a capital of 25,000*l.*, is in course of formation for the purpose of providing the funds.

Salford.—The corner stone of the Salford Athenæum and Temperance Hall was laid on Monday in last week, in the presence of a large number of spectators. The building is about to be erected on a site presented by Mr. E. R. Langworthy (in addition to a donation of 100*l.*), and is situate at the Chapel-street end of Great George-street, near St. Philip's Church. It will contain a large lecture-room, a library, reading and news rooms, and school-rooms for adult and juvenile classes. The institution will cost 1,200*l.* exclusive of a library, towards which sum subscriptions to the amount of 600*l.* have already been promised. The architects of the building are Messrs. Travers and Mangnall.

Cleckheaton.—The foundation-stone of a new Wesleyan chapel, to be erected in this village, was laid on Wednesday in last week by Mr. Jas. Heald, of Stockport. The building is to be in the Gothic style, with galleries on three sides. It will accommodate about 500 persons. The cost is estimated at 1,200*l.* towards which 860*l.* have been subscribed.

Derby.—The inhabitants of the parish of St. Alkmund's, Derby, have built a school-house in Edward-street in the Elizabethan style, with red brick and stone dressings and bay windows. The boys' room is 52 feet by 30 and 18 feet high; the girls' room of the same dimensions, with class-rooms and entrances. The cost of the building and fittings is about 1,100*l.* Mr. Sanders was the architect, and Mr. Edward Sims, contractor.

Glasgow.—On Tuesday, the 1st inst. the front walls of a new building in West Nile-street gave way and fell to the ground, breaking a large crane and injuring the gas-main, but doing no further damage.——The equestrian statue of the Queen, to be erected in this city, is approaching completion. The west end of St. Vincent-place has been selected as its site.

Dundee.—The foundation-stone of the new Royal Exchange Buildings presently erecting, was laid on Monday, the 31st ult. in presence of the members of the committee of the association, with a few others interested in the erection. A stone had been prepared and hewn out beforehand, into the cavity of which a sealed glass bottle was deposited, containing a somewhat heterogeneous but instructive collection of records of the nineteenth century, among which were *Punch* and the *Times*, *Bradshaw*, postage-stamps and envelopes, a Dundee bank-note, and coins of the realm, an almanac, and "Dundee Directory," &c. It is to be hoped that the safety of the deposit has been looked to, otherwise future antiquaries may have already been forestalled, even though no trail of dirty fingers, as in the white vase of a late deposit, may be left to tell futurity tales to the prejudice of the present generation.

THE IMPROVEMENT OF ENDELL-STREET, LONG-ACRE.

A space of ground of between 70 and 80 feet in length, on the east side of this street, extending from the church to the corner of Short's-gardens, has been taken on lease from the Commissioners of Public Works for the purpose of being appropriated as a stone yard in which to employ the out-door poor of the united parishes of St. Giles-in-the-Fields and St. George, Bloomsbury, and on the side next the street a high wall has been built; and from the progress now being made in filling up the great gaps which have so long existed on each side of this melancholy-looking and badly arranged street it appears as if there was a probability of its being shortly completed. In the opinion, however, of many of the inhabitants of the neighbourhood, a building on the site chosen for the stone-yard would have been a greater improvement to the street and a convenient place for a vestry-hall, in which the business of the several parochial boards might be transacted, instead of meeting for the purpose, as is now done, in a small room in the churchyard attached to St. Giles's Church, and for the use of which we are told, upwards of 100*l.* a-year is paid out of the parochial rates to the churchwardens of St. Giles's.

The public baths and washhouses at the north end of Endell street are approaching completion, and are said to be very commodious, but we have not yet been through the building What could have led to the setting up of the group over the entrance-door, and which appears to speak rather of Rome than of the purpose of the building, we are unable to divine. The enormous sham key-stones of compo running up into the heads of the one-pair windows, too, do not satisfy common sense, and are nearly as ugly as the porch of the Lying-in Hospital in the same street.

THE PAINTED WINDOW OF THE SUB-DEANERY CHURCH, CHICHESTER.

My "main objection is" not "to the arrangement in common of subjects from both Testaments." I never entertained the least objection to such an arrangement. I know that it obtains in some of the best specimens of ancient art, and is full of significance and beauty, the subjects taken from the Old Testament being either introductory to, or prefigurative of, those selected from the New. There is no violation of the law of pictorial or poetic unity in such cases. But I do object to the commingling, in one and the same window, of the same sort and size as that of the sub-deanery, Chichester, three different subjects which have no perceptible or conceivable connection among themselves, and which therefore distract the mind of the beholder, and mar the effect of one another. Here, again, in spite of "Apprehendo" and his *ex cathedrâ* teaching, I shall accept a lesson from my old master—"*Singula quæque locum teneant sortita decenter.*"

It may be that, in some instances, "the transom" divides subjects which are apparently unconnected with one another; but what of that? The question is, do such pictorial works follow the rule or attain the standard, "*summæ perfectæque virtutis;*" or are they deflections therefrom? I am inclined to think them the latter. I still adhere to the received law—"*Denique sit quodvis simplex duntaxat et unum.*" It may be true that "in *one* window" at Tours "the Building of Babel, the Martyrdom of St. Sebastian, and the Nativity of our Lord," are depicted: then I will take the liberty of naming that window the *Babel* window. And when I set about my "premature infliction upon the public of the window" which I am "thinking about," I will carefully avoid the building of a pictorial Babel like to that of Tours, or that of the Subdeanery, Chichester. Surely "Apprehendo" is joking when he makes such an excuse as "symbolic configuration" for the little boys which are to personify "the Sons of the Prophets." No, that will not do. *In vitium ducit culpæ fuga.* As to "all mediæval art" being "*symbolical* of sacred facts, and not *representative* of them," I have but a few words to say, viz. that such doctrine is manifestly unsound. Though the divine "Raphael could only give a comparative development of his imagination," yet his pictorial characters are as truly representative of their objects in many instances as are the *dramatis personæ* of the stage. *Veluti in speculum* applies equally to both cases. A scene well depicted by the art of the limner, is a silent but instructive enactment of its subject. And I see no reason why painted glass should make "symbolism" an excuse for the stiff and hideous caricatures of "the human form divine" which are often perpetrated in these days. Why should Adam and Eve before the fall be depicted on glass as two wild Indians of the roughest caste? But so they are in Chichester Cathedral, to the wonder and amazement of many spectators. Would "Apprehendo" advise or direct a sculptor of the present day to imitate the Martha, Mary, and Lazarus, chiselled, it is said, by a Saxon hand, on the south walk of the same cathedral? Or would he have him avail himself of all the appliances and improvements of modern art? His answer to these two questions would, I think, show that a work of art is not good because it is ancient or mediæval, and leave me room for my unprofessional conceit that "*sequi naturam*" is the best rule after all. I shall not waste words upon the rest of his remarks, which are made in a style of language and a tone strongly indicative of the quarter whence they emanated. "Whilst examining the window, I was fortunate enough to have its objects described to me,"—is a transparent mask. Pictures ought to speak for themselves, and not to require, at all events to professional men, verbal explanations in order to their being intelligible. We all remember the story of the Coventry lion. I have now quite done with this subject. *Oh! jam satis est.*

An Antiquated Member of the University of Oxford.

ERICSSON'S CALORIC ENGINE.

It is not generally known, we dare say, that Captain Ericsson is not a native American, and that, though a Swede, he was for years resident in this country, whence he emigrated to America, in disgust with the Admiralty, one of whose officers had stupidly obstructed the adoption of the screw-propeller, of which Ericsson was one of the first promoters. It was in this country, moreover, it is said, that he first tried the caloric principle, some twenty years since, at Laird's-yard, Birkenhead. The experiment was reported to have been unsuccessful, in consequence of the engines getting dangerously hot. Ericsson's engine is not even the only one, nor is it the first that has been tried on this principle in this country. A Dundee correspondent some time since pointed attention in our columns to one produced many years since at Dundee. In *Bell's Weekly Messenger* we observe a corroboration of our correspondent's assertion, together with some additional particulars, which we here abridge in the words of the writer:—

"As early as 1807, Sir George Cayley published, in *Nicholson's Journal*, an account of an air-engine, which in many respects resembles Capt. Ericsson's. This we believe to be the earliest mention of such an engine on record. Sir George Cayley afterwards patented this engine, with some improvements, and had not his patent expired a few months ago, Ericsson's engine would have been an infringement of that patent in this country. Such an engine was working for some time at Millbank, and was tested by several of the most eminent of the engineers of the day.

For stationary or marine purposes, the engine of Mr. Stirling, which was erected and practically worked most economically at the Dundee foundry, was better calculated. This engine also Capt. Ericsson has closely copied. The

great economy of fuel here was produced by passing the waste hot air through metal laminæ, or wire gauze, which absorbed its heat, and drawing the cold air again through the heated metal, which again gave only its heat to the air, thus alternately contracting and expanding it. This refrigerator, as Mr. Stirling called it, has, under the name of a regenerator, been patented by Mr. Dunn, for Capt. Ericsson.

In short, Sir George Cayley's engine and Mr. Stirling's bore much the same relation to each other that the high pressure steam-engine does to the condensing engine. Capt. Ericsson re-names his engine, which is a combination of the other two, calls it his, and America claims it as her own. However, let credit be given where credit is due. Capt. Ericsson has, for nearly thirty years, we believe, been engaged on this subject, and has produced the best combination that has yet been given to the public. To him belongs the credit of a discriminating compiler, rather than that of an original author."

WALL PAINTINGS IN GAWSWORTH CHURCH, CHESHIRE.

THREE lithographs, from drawings by Mr. Joseph Lynch, of the wall paintings discovered in Gawsworth Church, in October of last year, have been published in Macclesfield. One represents St. Christopher; another, "The Doom;" and the third, St. George slaying the Dragon.

The discovery took place during some repairs the church was undergoing. The paintings had evidently been long under whitewash, dirt, and plaster. Mr. Lynch discovered a great deal of gilding. The nimbus of our Lord, in the "Doom," was gilt, as it was on other heads, so too the crown and the tiara on the head of a pontiff, in the procession of the faithful entering Heaven. There was gilding on the armour of St. George: the trappings of the horse; even the *shoes* of the latter were gilt. The "St. Christopher," and the "Doom," were in the worst state of preservation. The medium was that known as "tempera."

SEWAGE AND WATER.

THERE are cities, such as Naples, Genoa, and New York, so situated on an elevation at the sea-brink, that they may increase in population, even to millions, and yet (with respect to sewage) not require any serious modification of the channels originally formed for the outflow of sullage, as their acclivities assure a fall, and the briny deep swallows and digests the tribute. Not so the basin (we might now say the slop-basin) of London—occupying a very slightly undulated district.

From the permeable nature of its soil few localities could be better adapted for the foundation of a township. With a river pre-eminently distinguished for excellence of water, and a tide ascending fifteen miles above the Commercial Docks, small indeed was the occasion even for a general system of drainage, so long as its population was fairly spaced and spread, and that 500,000 souls were its limit.

Thirty years back, the Thames was a limpid torrent at Richmond, and thither ships' boats repaired (at farthest) for water; and about the same period we enjoyed the luxury of a bath at Westminster-bridge, and of a swim at Battersea-reach. What a change in the complexion of things since then! The river has become so loathsome that we can now hardly tolerate a steam-boat trip from Westminster to London-bridge in *summer;* and if we venture on an oar or sail excursion to Richmond, nearly the whole waterway is pestiferous and abominable, as we pass the various sewers which vomit filth and poison into Father Thames's bosom.

The metropolis and its *two millions* discharge as many gallons of refuse; besides the noisome waste of bone, oil, gas, and other vitiating addenda. The flood, having previously received the pollutions of Brentford, Richmond, and numerous populous towns and districts up to Oxford, might well be considered unfit for the drink of a civilized community (at any point short of Henley), and is now, below London-bridge, bad as poetical descriptions of the Stygian Lake, while the London Dock is black as Acheron!

It is no overdrawn calculation to set down the decoction as it may be drawn from the Custom House-stairs as an amalgam of the refuse of four millions of people, their cattle, and alluvia. It would be hard to say anything new upon this theme, which we have so often treated; for, like an old ballad, it is discoursed of *now* by all the press; but, as this question, unlike most other matters of public interest, cannot become one of commercial profit; as, in fact, to meet the evils which now beset the whole community, vast sums must be expended,—1st, in the *conservation of the Thames throughout its whole course*,—2ndly, in the formation of tunnels along (or within) the river banks on each side,—3rdly, in the adaptation of the *existing* sewers to the new outfall,—and lastly, to the deodorization of the product, and its conversion to agricultural purposes,—this question becomes one of the most momentous national and state polity.

No company can grapple with it. Sir Hugh Myddleton, who first attempted the water (New River) supply of London, performed a prodigy for that time, but he sank a fortune; nevertheless, the speculation was soon found to be most lucrative, and since then no difficulty interposed to thwart other companies in deriving large funds through similar supplies drawn from sources far less pure. In the sewage question the results of profit are, however, not so facilely presumable; besides that the requital can only be levied for the easement by Act of Parliament: there was no difficulty in obtaining millions for railroads, for there is capital enough in the country always easy of acquisition, when there is a fair prospect of a dividend; but since the age of Numa Pompilius the civic sewage has been always a state question.

We have seen the obstructions, the difficulties, the impracticabilities which surround and trouble the waters of London: we have noted the premature death of three notable officials who were charged with this question; and to this hour, notwithstanding the universal outcry for pure air and pure water (neither of which can be had with our present system of sewage), no accord has been arrived at on the subject, nor has any authorised plan been yet propounded. Where are ye, ye civil engineers? Ye can remove mountains, bridge seas, and fill rivers—ye can project the union of ocean with ocean—ye can rive the Atlantean chain!—can ye not purify the Thames, and so render your own city habitable?

An increasing population (now increased to an amount unprecedented in history) requires increased easements. As commerce and civilization advance, so do the appetencies of the people. New streets extend, the inhabitants require more gas-light, and lo! they are supplied. The wants of a new neighbourhood are always met, whether it be in animal or vegetable food, forage for cattle, or clothing, because there are always the means of payment; but the arrangements for assuring the supply of natural elements, in pure water and pure air, are beyond the control of populous districts. Neither Marylebone, Hammersmith, Chelsea, nor the more pauperised parishes, alas! can do it. The corporation of London alone (within their limits) have any power. They are, it is true, conservators of the Thames, but their rentals (inclusive of the coal dues) would be wholly inadequate to the work.

These great national objects can only be carried out by authority of Parliament, and the public resources. In their progress the hideous banks of our river might, and ought to be furnished with quays, causeways, wharfs, and even docks; and a very small legalised assessment would suffice to defray the cost, and beautify the capital, thereby promoting the health, accommodation, and content of the citizens.

New York (as before referred to), containing 500,000 inhabitants, has erected a gigantic aqueduct at the cost of *half a million!* That city is, perhaps, the best watered in the world; and yet, for the purposes of sewage, her commanding and proximate maritime position renders the supply of water for *flushing* almost totally unnecessary. Their supply for fountains and baths is illimitable as the head is exhaustless. But they are a go-a-head race. How can poor London doze on in fog and vapour? It might be imagined that a refined taste for the least, but most essential, of luxuries, might lead them. May they never be driven to it by sanitary necessity.

"QUONDAM."

THE BUILDINGS ACT AND SEWERS COMMISSION.

ON the 14th inst. a very large deputation from the various metropolitan parishes attended, first, Lord Palmerston, on the subject of the mismanagement of the Metropolitan Sewers Commission; and then Sir W. Molesworth, as Chief Commissioner of Public Works, as to the injurious effects of the Metropolitan Buildings Act. The chief object of the deputation was to insist on "local self-management."

Amongst the speakers at Lord Palmerston's,

Mr. Nicholay said, from one end of the metropolis to the other they felt that taxation without representation was a tyranny. So far as the sewage of the metropolis was concerned, commission after commission had failed, rates upon the inhabitants were going on, and vast sums of money were exacted in a most profligate manner, and the ratepayers who were fleeced had no return whatever for their money. The money of the ratepayers of the metropolis had been squandered in experiments, as instanced by the Victoria-street Sewer, on which the ratepayers had to pay the piper to one gentleman, 5,000*l.* for damage done to his property. The Duke of Northumberland claimed 11,000*l.* and they had not only incurred this liability, but the commission had made a debt of the money, at 5 per cent. interest, and had thus saddled posterity with it.

Mr. T. Smith said, that so far from these sewer commissions being constitutional, the judges of the land condemned them even so far back as the reign of Henry VIII. He here referred to the 10th "Coke's Reports," page 141, 3rd Hen. VIII. which denounced the appointment of commissions with regard to sewage, and contended that it was an example for the government of the present century. At all events, the ratepayers of the metropolis had right and justice, as well as the common law of England, on their side, and they were fully determined, with regard to the sewage, and other matters,—they were fully determined to have those matters carried out by local and representative administration, full and real, and not nominal.

Sir B. Hall said, so far as the management of the Sewers Commission was concerned, the Victoria-street sewer had cost 100 per cent. over the estimate; and the damage done had cost from three to four hundred per cent. over the contemplated outlay.

Various other gentlemen having addressed the noble Home Secretary,

Viscount Palmerston said he should feel it to be his duty, as it was his inclination, to exercise the office he then held to the best of his energy and ability to the public advantage. In order to do this, he was most anxious to hear the expression of the opinions and the feelings of the public at large. There were two matters of a prominent character which could not fail to attract his attention,—namely, the state of the refuse of the living and the state of the remains of the dead. He (the noble lord) should be most earnest in his endeavours to get rid of the nuisances arising from those two causes. As to the manner of dealing with the former he was not, at the present moment, decided, but he was so far prepared to say that no local tinkering would be of any advantage. It must be one general system and one great and comprehensive measure, whether under representative control or not. Upon the question of local government or centralization, he begged them to understand that he was not conveying any opinion.

The same deputation then proceeded to the official residence of the Chief Commissioner of Public Works. The united delegates from the various metropolitan parishes had come to a unanimous resolution, at a public meeting:—"That a deputation wait upon Sir W. Molesworth, Bart. to represent to him that the Metropolitan Building Act has had the effect of injuriously limiting the size of houses, and, consequently, has been a chief cause of the confined and miserable dwellings of the humbler classes in the metropolis. That it has encouraged bad buildings, and has been the means of covering the suburbs of the metropolis with thousands of wretched hovels, which are a disgrace to a civilized country, and that the future legislation upon this subject should embrace a system of representative control."

Mr. T. M. Nelson communicated this resolution, and said,—

The great evil complained of, that the present Metropolis Buildings Act was in restricting the size of the poor man's dwelling to an area of 25 by 16 feet; and if they went one inch beyond this limit a fine was inflicted: the consequence was that at least 4,000 of these miserable dwellings were annually added to the metropolis. It was useless to talk of the beneficial effects of model lodging-houses, while an Act, not only tolerating, but enforcing, such iniquities, was in force. It was absurd to put restrictions to the size of houses, any more than was put to the extent of ships, mills, or any other buildings. As a proof that the Government felt that the decision come to by the united delegates was, in the main, a just and equitable one, they had actually passed a measure, known as the Improvement of Scotland Act, the provisions of which, if applied to this country, would have met all the wants of the case, for there we found that the election of officials was left in the hands of the local authorities. This would fully satisfy the metropolitan delegates, who demanded nothing more than that their affairs and interests should be placed under local control. The difference in the dwellings in the French as compared to the English capital was peculiarly remarkable, for while for the last hundred years, the size of the houses in Paris had increased, those in London had diminished; and thus a sort of *mésquin* appearance was given to our public buildings, and our countrymen were classed as inferior to their continental neighbours as architects.

Mr. G. Bird said,—As a practical builder he had felt the evil workings of the Building Act; the main object of which appeared to be to appoint a court of justice, whose duty should be to take cognizance of what took place in the building trade, and that the three lawyers, who were to be of seven years' standing, and were to have full control over this court, were to be paid out of the litigation that might arise. Again, surveyors were appointed without the public consent, at an annual cost of 19,000*l.* which sum it was proposed should come out of the Consolidated Fund. What, he would ask, had the people of Cornwall or in Ireland to do with the public buildings in the metropolis? Another clause in this iniquitous Act, against which they had that day met to protest, was, that if a man did anything at variance with its enactments, he subjected himself to a fine of 200*l.* for the recovery of which his cash-box might be broken open, or any other securities peremptorily seized upon, or he might be taken to prison without trial or even previous notice.

Others having spoken,

Sir William Molesworth expressed himself very much obliged to the gentlemen who had been so good as to give expression to their sentiments upon the grievance complained of. He had no hesitation in saying that, as had been suggested by the deputation, an inquiry should be made into the necessities of the case, and while he was not prepared to make any specific pledge, he had no doubt but that, with the assistance of some members of Parliament whom he saw present, and that of the other metropolitan members, he should be able to introduce such a measure as would meet the exigencies of the case.

THE BRITISH INSTITUTION.

The collection of works of art now exhibiting at the British Institution is wanting in first-rate works: there are many very pleasing, and some very clever pictures, but the general effect is unsatisfactory. One large picture (538), placed by brave hangers on the line, is unworthy of a sign painter. Stanfield has a charming view of "Dort" (1), full of beauty. Frost's "Cool Retreat" (18), is a pretty piece of flesh painting, though inferior to former works. G. E. Hering in "Sunset on the Mediterranean" (bought by Mr. T. Grissell, by the way), and "Borrowdale" (180), shows a greater advance upon his former efforts than any other artist in the room. Lee's "Benmore, with the town of Killin," is, on the other hand, a great fall backward. F. Goodall's "Tired Gleaners" (113) is the best thing he has exhibited for some time past. "A Winter Sunset," by Branwhite, is in two senses *an-ice* picture; but he repeats himself too often. Jutsum's "Stream in Berwickshire" (158), J. Danby's "Inverary Castle" (252), T. Danby's "Moonlight Feast" (446), "Tantallon Castle," by H. J. Johnson (429), Boddington's "Scene on the Loddon" (502), and Bentley's "Sunset after a Storm" (519), are amongst the most pleasing landscapes. (53) "An Archer," by H. W. Pickersgill, R.A. shews the practised handling of a veteran.

Sant has two pictures, both of much merit: the characteristic of one (146) (a mother and child, though not so called) is sweetness; of the other, "She never told her love" (175), power. The baby, in the first, is painted as affectionately as if it were his own: the neck of the mother is less good. Linnell is not happy, though his "Wold of Kent" (145) has good qualities. Niemann, both in "Stonehenge" (97), and in "Moss Troopers" (152), though too large, shows much poetic feeling. E. W. Cooke has several of his cleanly-painted and sparkling transcripts. J. W. Glass maintains the position he achieved last season at the Portland Gallery by a picture of similar character, "The Night March" (223), a body of troopers with a guide, on compulsion. H. C. Selous's "Macbeth," although exaggerated, displays great power and skill. "A Study," by H. O'Neil, is charming,—much better than his "St. Agnes" (308). J. Phillip has a singularly good picture, "A Spanish Gipsy Mother" (365), deserving high praise. The same must be said of (372) "The Reformer's House, Edinburgh, during the Sixteenth Century," by Drummond, which is full of character, ably portrayed.

"Want and Abundance," by T. Brooks (servants inside and the poor out), is a mischievous libel. Ansdell's "Sheep Gathering" (141), and his *geological* work, "The River Spean, Lochaber" (518), are both admirable. Holland, Wyburd, Gale, Sidney Percy, Earl, Pritchard, &c. should also be mentioned.

THE SCENERY AND DECORATION OF "MACBETH," AT THE PRINCESS'S.

Mr. Charles Kean has not spared pains, intelligence, or cost, to produce "Macbeth" with a completeness before unknown to it. The result is most successful, and every lover of the stage, every student of history, and every antiquary, owe him a visit and their thanks. The labour and expense of such a revival are enormous: the hours, and days, and weeks of work, upon the stage, and in the study, required from the manager, are unthought of, and of course unappreciated by the majority of those who go to approve or condemn the result. In the present case the verdict of approval was, as it justly deserved to be, unanimous.

In the absence of precise information respecting the dresses worn in Scotland at the beginning of the eleventh century, the manager has borrowed materials from those nations to whom the Scots were constantly opposed in war. On this head, however, we will let him speak for himself:—

"The continual inroads of the Norsemen and the invasion of Canute, in 1031, who, combining in his own person the sovereignty of England, Norway, and Denmark, was the most powerful monarch of his time, may have taught, at least the higher classes, the necessity of adopting the superior weapons and better defensive armour of their enemies: for these reasons, I have introduced the tunic, mantle, cross gartering, and ringed byrne of the Danes and Anglo-Saxons, between whom it does not appear any very material difference existed; retaining, however, the peculiarity of 'the striped and chequered garb,' which seems to be generally admitted as belonging to the Scotch long anterior to the history of this play; together with the eagle feather in the helmet, which, according to Gaelic tradition, was the distinguishing mark of a chieftain. Party-coloured woollens and cloths appear to have been commonly worn among the Celtic tribes from a very early period.

We have every reason to believe that the armour and weapons of the date of Macbeth were of rich workmanship.

Harold Hardrada, King of Norway, is described by Snorre, as wearing, in the battle with Harold II. King of England, A.D. 1066, a blue tunic, and a splendid helmet. The Norwegians not having expected a battle that day, are said to have been without their coats of mail.

This mail appears to have been composed of iron rings or bosses, sewn upon cloth or leather, like that of the Anglo-Saxons. Thorlef, a young Icelandic, or Norwegian warrior of the tenth century, is mentioned in the 'Eyrbiggia Saga,' as wearing a most beautiful dress, and that his arms and equipments were extremely splendid.

The seals and monuments of the early kings and nobles of Scotland represent them as armed and attired in a style similar to their Anglo-Norman contemporaries. Meyrick, in his celebrated work on ancient armour, gives a plate of Alexander I. who commenced his reign in 1107 (only fifty years after the death of Macbeth), and there we find him wearing a hauberk, as depicted in Saxon illuminations, over a tunic of red and blue cloth."

Every figure is a study: but we would particularly point to the two dresses worn by Lady Macbeth.

The acting of Mr. and Mrs. Kean in the principal parts are too well known and appreciated to need comment: unless our recollection fail, however, they have never acted in them so well. Mr. Ryder's *Macduff*, too, is a most creditable piece of acting.

Relative to the scenery, Mr. Kean adopted the unusual step, which may be usefully copied by other managers, of consulting an architect, and thus glaring errors have been avoided and an effect of unity obtained. The inhabitants of Great Britain had made greater advances in architecture at the time during which Macbeth lived than some are disposed to allow: they excelled in the working of iron, and used colours for the adornment of their buildings, both internally and externally. In the Saxon poem, "Beowulf," we have the passage,—"He went to the hall, stood on the steps, and beheld the steep roof *with gold adorned*." Large lintels, angular-headed openings, low towers with pyramidal roofs, and a general adherence to the examples remaining of buildings erected before the Conquest, give the scenery a character of its own. Messrs. Gordon, Dayes, and Lloyd, under the eye of Mr. Grieve, have executed it most admirably.

Some very novel and striking supernatural effects are introduced, and some of the groupings, as for example, when the retainers rush in after the discovery of the murder, and one particular massing of the witches in the cauldron scene,—are particularly fine.

Mr. Kean has already done much to improve the position of the drama amongst us, and we may safely augur from the present admirable revival of "Macbeth," that if he be supported by the public and the press, as he eminently deserves to be, he will do more.

In the next recess he should apply himself to improvements before the curtain.

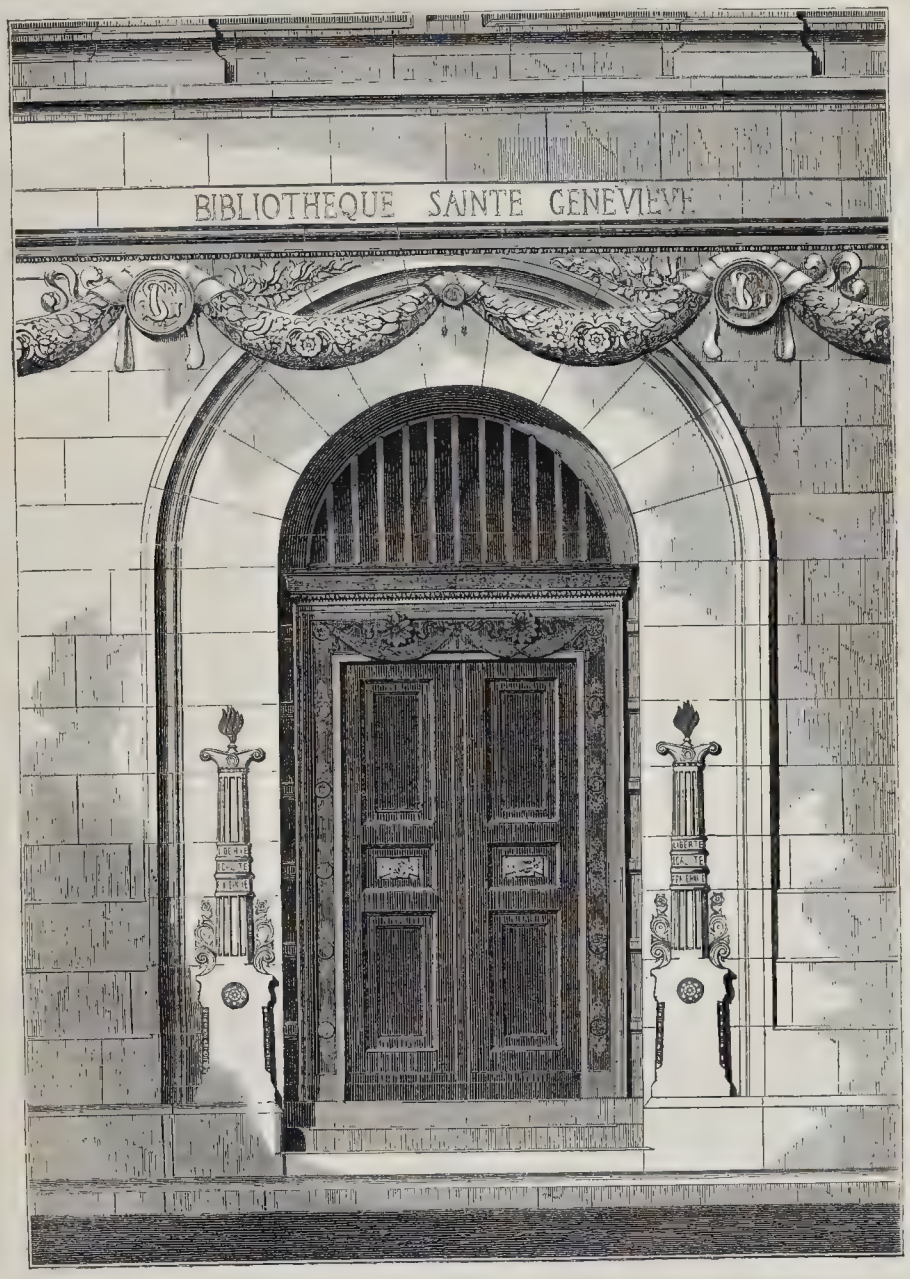
DOORWAY OF THE LIBRARY SAINTE GENEVIEVE, AT PARIS.

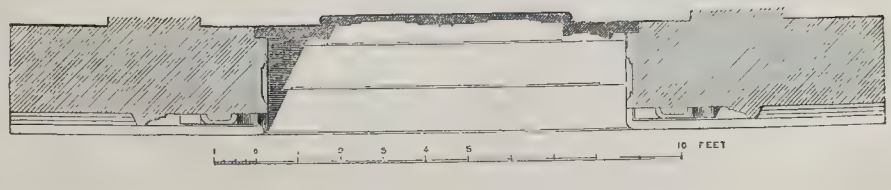
The *Bibliothèque Sainte Geneviève* is one of the best specimens of modern French architecture to be found in the "gay capital," and in our present number we give a view of the entrance doorway, engraved from the *Revue Générale de l'Architecture*. We had in preparation plans of the building to accompany this plate (public libraries and museums now occupying attention), but accident has prevented their completion in time. We shall give them hereafter with a view of the exterior of the building, and their number will compensate for the comparative bareness in our present publication. M. Henri Labrouste is the architect from whose designs the library was built.

Sale of Mr. Pugin's Library, &c.—The library of the late Mr. Pugin has been sold by Messrs. Sotheby and Wilkinson, and brought high prices; the proceeds of the first day's sale amounting to 376*l.* 15s., the second to 367*l.* 9s., and the third to 339*l.* 8s. 6d.; making altogether 1,083*l.* 12s. 6d. The "Microcosm" with Pugin's own drawings was bought by Mr. Tite for 13*l.* On Saturday last his collection of carvings &c. was sold. Lot 87, the upper part of a fine brass, by the same artist as the St. Alban's specimen, of the 14th century, sold for 24*l.* 10s.; and Lot 136, a silver diptych of the 14th century, representing the salutation and coronation of the Virgin, 23*l.* 10s. The oak carvings were principally figures of the saints, and the whole sale amounted to 429*l.* 10s. 6d.

A Model of the City of Edinburgh is now exhibiting at Manchester. This work of art, we hear, has occupied the artist nearly twenty years in construction. It is on a scale of 15 feet to the mile, and covers a surface of 500 square feet. The churches, public buildings, bridges, monuments, statues, institutions, and the castle, Salisbury Crags, Palace and Chapel Royal of Holyrood, and Calton-hill, are said to be given in correct elevation and even the private dwellings exactly imitated in all external details.

DOORWAY, LIBRARY OF ST. GENEVIEVE, PARIS.—M. HENRI LABROUSTE, ARCHITECT.





THE CLOSING OF THE GRAVEYARDS.

The *Sun*, in a stirring, though rather desponding article, on this important subject, strengthens all we have recently said as to the state of the old St. Pancras burial-ground.

"Among these ill-fated localities," it is remarked "we must not forget to specify, and that, too, in the strongest terms of reprehension—Old St. Pancras burial-ground. An exposure of the foul and hideously over-crowded state of that churchyard has recently been given, with very significant woodcuts, in the columns of our contemporary, the *Builder*. The revelation is such as imperatively demands, we conceive, the instant interference of our administrators. Unfortunately we can speak to the accuracy of the account furnished by the *Builder* in terms of deplorable corroboration. It is true that the ground is there so rotten with the dead that 'the stones are falling all ways.' It is true that 'the paved pathways are everywhere disrupted, such is the loose and quaking state of the whole mass.' It is true that the soil, which is 'a stiff clay,' has long been in 'a disgusting state'—being, in fact, 'a mere mud-pond in that portion which is appropriated to the burial of the poor.' All this is true, without the truth being in any way over-coloured. And can we suppose that such a state of things can be much longer tolerated? Alas! it must be confessed that there is but too much reason for this doubt."

The *Sun* concludes with an expression of anxiety as to "the indifference evinced upon this sanitary question both by the people and by the Government." We have faith in the energy of the new Home Secretary, Lord Palmerston, however, and in the probability of his willingness to make war with those deadly and remorseless domiciliary foes which slay their thousands and their tens of thousands as determinedly as the bitterest foreign enemy could desire to do. His lordship has already declared war against these foes, and has assured the country that his best energies shall be exerted in subduing them. On a representation by his lordship to her Majesty, a committee of the Privy Council has been called upon to consider the necessity of closing the old and new grounds of St. Mary's, Islington, and the graveyard attached to the chapel of ease in the Holloway-road, called the Chapel of Ease Burial-ground. Moreover, in reply to a question put in the House of Commons last week by Lord Dudley Stuart as to St. Clement Danes Churchyard, which had been known to strike with virulent disease persons merely passing it at particular times—an instance of which within his own personal knowledge his lordship adduced,—the Home Secretary said that the particular place alluded to had been brought under his notice by a deputation from the parish itself. A meeting of the vestry had been held, and an application had been made to him for an order in council to shut up that graveyard, and that order would, as soon as possible, be passed. With regard to the subject generally, he could only confirm the fact, that the state of the graveyards in this metropolis was a disgrace to a civilised community. He trusted that *the parishioners, with whom it rested to take the first steps* to correct so dreadful an evil, would not be deterred by any consideration of local expense from taking those precautions which might remove from the metropolis a source of pestilence which, if we should be again visited by the cholera, which was raging in some parts of the Continent, would be attended with the most disastrous consequences. He assured the House that the attention of her Majesty's Government would be anxiously directed to that subject. Now, there seems to be some meaning and intention, as well as force, in these remarks of the new Home Secretary; and it only remains for the people to do their part in the movement which, if now steadily prosecuted, we trust will shortly sweep away such a disgrace from our metropolis. Let other parishes only imitate the example set by St. Clement Danes, and the combined movement will carry everything before it. Now is the time. Lord Palmerston is the Hercules to cleanse this Augean stable; but not a moment should be lost by the people, for his Lordship may be shifted into some new position, and his successor may have neither energy nor inclination for the task.

A NEW METHOD OF EASING SASHES.

The following mode of easing sashes was successfully carried out last week at a new house in Helkett-street, the property of Mr. Cottan, a speculative builder, and the fertile genius who devised the plan will, no doubt, be duly appreciated by builders, should he favour them with a practical illustration of his invention. The way the successful experiment was made, is this:—The house was finished with the exception of the painting, and two painters were busily at work when the door-bell rang: one of the men, upon answering it, found a man with an apron on, and a basket of tools on his shoulder. "Well, mate," says the *carpenter* to the painter, "them sashes I hear don't run easy now." "The wet weather prevents them, no doubt," says the knight of the brush, and up to the drawing-room floor stalks the carpenter. In a few minutes he calls out, "Mate, I see I can't ease them here to make a slick job, come and bear a hand and I will take them home." The innocent painter upon this affords ready assistance in tying up the sashes so that the glass should not get broken. Having departed with his load, the painter's next answer to the bell was to the governor, whose watchful eyes had discovered something wrong. "What, in the name of goodness! can't you paint sashes without taking them out?" said the governor. The painter, upon this, acquaints him how the carpenter had been to ease the sashes, and how he had taken them to the workshop to ease them properly.

Builders in the habit of swearing may guess the benedictions of Mr. Cottan upon the painter, and his admiration of the "new plan of easing sashes." The fellow, it seems, has every appearance of being a carpenter, and, it is presumed, intends using Mr. Cottan's sashes for a house of his own—no doubt run up in the same easy manner that he eases sashes.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

The third meeting of this Society this year was held at 32, Sackville-street, on the 9th ult. Mr. T. J. Pettigrew, V.P. in the chair. Eight new members were announced as elected by the council, amongst whom was Baron M. De Rothschild. The chairman read a communication from Mr. Wansey, F.S.A. from Naples, on the subject of some recent discoveries of great interest on the estate of the Count of Syracuse, at Cuma, described in our last number.

Mr. Syer Cuming read a paper on Roman lamps, which he illustrated with some very perfect specimens, some of which bore the monogram peculiar to the coinage of Constantine, and other manufactories of the Christian era.

Mr. Lionel Oliver presented to the Association a brass medal of the time of George II. On it is represented a bishop trampling on heresy. The bishop holds a shield (on which are the words, "Passive obedience") surmounted by a mitre, which is attacked by a figure, armed with sword, &c. superscribed "Burgess."

Mr. Carrington exhibited a glass cup, of German manufacture, and which, from the costume of the equestrian figures thereon, may be ascribed to the time of Queen Anne. Also the seal of the city of Worcester, which was returned to Jabez Allies, when mayor, by an antiquary of Rouen. This circumstance seems to confirm the tradition that this seal was formerly stolen by a town-clerk, who ran away to France. It has a representation of the cathedral on it which is surrounded by "*Sigillum Commune Civium Wigornie.*" The seal is of brass.

Mr. Charles Ainslie placed on the table several articles said to have been found in that archæological mine, Cannon-street, but most of which were identified as old friends before the City improvements were thought of.

Mr. S. I. Tucker exhibited a silver-gilt ring given by George II. to a pilot, who conducted him into Rye harbour when in a storm on the Sussex coast. The King stayed at Rye three days. It will be remembered by many of our readers that during the time of the Great Exhibition in Hyde-park, an old woman got into sad trouble for selling ginger-beer—all such practices having been forbidden till the Crystal Palace was closed,—and that she subsequently was reinstated in her stall on account of her having proved that she was descended from the identical pilot mentioned above, who saved his royal master from a watery grave. The ring bears the arms of Poland impaled with those of Lithuania, surmounted by a regal crown.

Mr. Gunston exhibited rubbings of several inscriptions on church bells; Mr. Sherratt some tradesmen's tokens relative to, and found in, London; and Mr. Wakeman a drawing of a very singular tomb found at Llangutog, Juxta Usk, county of Monmouth.

Mr. James, a collector of spurs, read a paper on an interesting specimen of a soloret of the fifteenth century, which he exhibited. This is believed to be unique, with the exception of two inferior specimens respectively in the Tower Armory and at Goodrich-court. Mr. James's soloret, which, from the rowel of the spur to the point of the toe, is 2 feet 7 in. long, was found in Norfolk.

LECTURE ON WORKING-CLASS DWELLINGS.

At Doncaster, a week or two since, Mr. W. B. Denison, of Leeds, delivered a lecture on the dwellings of the poorer classes. The amateur lecturer's audience comprised many of the working-class itself, but mainly consisted of those more likely to be able to exert some influence in the improvement of the dwellings of their poorer brethren. The lecture was one of a winter series by various lecturers, and was given in the Guildhall of the town. The lecturer entered pretty fully into the subjects of cleanliness, water supply, ventilation, &c. and enlarged on the evils of overcrowding. On the improvement of dwellings themselves he made some remarks we may quote:—

"A cottage with a living room, 15 by 15 feet, and 9 feet high, scullery and pantry on the ground floor, and two bed-rooms above, fitted with every convenience, can be built for rather less than 65*l.* This, with a rent of 2s. 3d. a week, or 5*l.* 17s. a year, will produce 8½ per cent. for the outlay. But there are numbers of working people who are able and willing to pay 3s. 6d. a week for cottages with three bed-rooms; for the sons and daughters are each earning something. There are two points to which I wish to call your attention—the plan of construction and the materials used. It would be much better for the sake of thorough ventilation, and much more convenient for a working man's family, and cheaper in the construction, if, instead of building houses back to back as they are now built, they were to be built one over the other. A row of houses is now being erected in this way at Windsor, and there is no reason why all those new streets of houses in Doncaster should not be built on the same plan. Now from the same source whence I gave you the information as to the other kind of cottage, I am able to tell you that a thoroughly good and substantial house, with every accommodation that a working man with a large family can want, good sized rooms, and three chambers with distinct entrances to them, can be built for 95*l.* Taking the rent paid for such a house at 3s. a week, or 7*l.* 16s. a year, in order to bring it within the reach of as many people as possible, you have 8¼ per cent. * * * If sanitary measures are adopted, the operation of which will tend to the increase of rents, they will surely to a great extent fail in their object. Instead of attempting to disperse the inhabitants over larger spaces, it appears to me that a given area should be made to accommodate as great a number as possible, consistent with the health, comfort, and independence of the tenants, and by judicious arrangements these advantages may certainly be secured without such a sacrifice of space. The poor cannot afford to pay for large areas and large rooms, and therefore the adoption of such must be productive of evil. In populous places, too, the crowding together of great numbers in a small space must be admitted as a necessary evil: any attempt to alter this would appear to be hopeless; but it remains to adopt those structural arrangements and other sanitary measures best calculated to mitigate the inconveniences arising from this unavoidable condition. The first and most important object would appear to be the judicious laying out of property, that the utmost ventilation and other sanitary advantages should be secured without any undue sacrifice of space. This, the very foundation of all structural improvement, is now entirely neglected, left to the ignorance and avarice of the low class of men who usually erect such tenements, whereas, under proper control, and by good arrangements, more accommodation might often be obtained for the tenants at less cost to the landlord.

Comfortable and healthy accommodation would be procured in this arrangement for even a greater number of inhabitants than at present, and this would assuredly invariably result from judicious attention to the disposition of the houses in all such cases. Were this important subject strictly attended to, and other structural arrangements carried out under one good general system, I am prepared to show that property of this description would produce better returns, while the poorer classes would obtain the benefits of ventilation, drainage, and good supplies of water, without addition to their rents. It has always appeared to me that many great advantages would result to the poor if the erection of their dwellings could be undertaken by a better class of men than those who usually construct them. It is an object well worthy the attention of capitalists,—the erection of suitable houses for the accommodation of the poorer classes: for, while improving their condition, a good interest for capital would be insured."

THE POTTERIES' SCHOOL OF ORNAMENTAL ART.

The sixth annual meeting of the promoters and friends of the Potteries' School of Design has been held at Burslem, when prizes were distributed among the pupils, and many of their drawings, &c. exhibited.

The Earl of Carlisle was in the chair, and the meeting, which was an extremely crowded one, was also attended and addressed by the Hon. E. F. L. Gower, M.P.; Mr. Adderley, M.P.; Mr. R. Redgrave, R.A.; Mr. H. Cole, C.B.; Mr. H. Minton, and other influential persons.

The Chairman, in course of a lively and appropriate address, said,—As to our special object here, the peculiar aim of your art ought to be to make the highest amount of beauty minister and subserve to the utmost extent of use. Now, with respect to use, I think we may trust the strictly practical, straightforward, not over romantic genius of our countrymen with finding out what would be most wanted, what would be most welcomed, what would suit the greatest number of customers; but I am not sure that we can as implicitly rely on the unaided, uninstructed, aptitudes to use the best artistic discrimination, or to employ the most happy combinations of colours, or to select the most faultless shapes and the most beautiful forms. I think, however, it would be both unjust and illiberal not to admit that in these respects, as in other more essential ones, great advances have recently been made. It is not here, in the heart of the district which gave birth to Wedgwood, and subsequently to other eminent manufacturers, several of whom I am happy now to see around me—it is not in the neighbourhood of the British Etruria, for which Flaxman modelled and for which Wedgwood wrought, that I should think of using the language of disparagement or discouragement. May I not, too, as far as our own country is concerned, refer to the beautiful new manufacture called Parian, combining so much purity of material with so much capacity for exquisite outline and form, which, I believe, we may call honestly our own, and in which I might refer to such examples as the Ariadne, the Io, the Dorothea, and the Vintage. But let me also remind you that we may refer with just pride to the position Staffordshire occupied in the Great Exhibition of 1851. I must respectfully remind you, however, that in the face of the competition of the world there is still ample call for exertion, and that if there is not progress there is likely to be falling off and defeat. It is thus that I think the establishment and encouragement of schools of design come to be of such first-rate importance, and if ever there was a district, and if ever there was a species of manufacture for which they seem eminently adapted and required, I should say it was the district in which you are now met, and it was your own staple manufacture.

Mr. Cole, while acknowledging the relative superiority of the Potteries' School, told the meeting candidly that the use made of the schools in that district was quite ridiculous. He was informed that in the Potteries they had a population of 100,000, and he also knew as a fact that the two principal schools had only 200 pupils, or a proportion of one in 500. Now he ventured to say that, whilst drawing had been offered to them at a price really contemptible, somewhere about the rate of a penny-farthing per lesson of three hours each,—so cheap, indeed, as to cause them to turn up their noses at it,—although only one in 500 avail themselves of this opportunity of learning to draw, 498 of these would be unable, if they were asked, to draw an inkstand. He thought, if such were the case, that they would agree with him that there had been something wrong, and it was their business to attempt to cure it.

From the report read, it appears that the Board of Trade propose to assign to the head school of the district 600*l.* a year; a superior school to be erected at a cost of some 2,000*l.* to be raised in shares of 10*l.* each; and efforts to be made in the district correspondent to the liberality of the Government. The financial statement showed that the receipts for the district schools during the year amounted to 926*l.* 6s. 8d. and that after all the expenditure had been deducted, there remained a balance of 118*l.* 1s. 3d. in the hands of the treasurer.

Notices of Books.

Remarks on the Enfranchisement and Improvement of Copyhold and Life-Leasehold Property, by the Application of the Life-Assurance Principle. By Arthur Scratchley, M.A. London: Charles Mitchell, Red Lion Court.

The object of this little work is to develope a comprehensive system for the General Enfranchisement and Improvement of Property held by copyhold or customary tenure. An argument advanced by the opponents to the recent Act respecting copyholds was, that even if enfranchisement were made compulsory on the lord, it would not be of general adoption, because enfranchisement would rarely be of much value to the tenant, unless he had the means wherewith to immediately improve his freehold property; and it was added that with difficulty would there be found, among the multitude of small copyholders, even a few possessed of sufficient means to effect their purpose.

"When, however," says Mr. Scratchley, "a system can be devised to supply the necessary means for *improvement* as well as enfranchisement, the objection disappears, and the advantage of the enactment alone stands apparent. Such a system is presented by the principles of Association and Life Assurance combined, if, in those districts where the tenure is most frequent, associations, which we will designate, for our purpose, 'Copyhold Enfranchisement Societies,' were formed, consisting of members who would unite their subscriptions into one common fund, and make advances to those of their number who might be desirous of improving or enfranchising property. A similar plan has been extensively applied for many years in this kingdom in various associations, known by the name of Benefit Building and Investment Societies, of which the object was considered so excellent by the Legislature, that in 1836, the Act 6 and 7 Wm. 4, c. 32, was passed for their benefit and protection."

By this means those members who might wish to enfranchise *copyhold* property, and improve the same by buildings, &c. thereon, would obtain the necessary advance from the society, either for a *fixed term of years*, or for the *whole of life*, and would be permitted to repay the loan by convenient and comparatively small instalments.

"For the better security of the benefit societies it would be desirable that a policy of assurance should be effected with an *Assurance Company** in London to the extent of the whole or part of the money borrowed, so that, in the event of a member's premature decease before he had completed the term selected for his repayments, his family and heirs might be saved from sudden pressure, by the receipt from the assurance company of the sum assured."

Journal of the Architectural, Archæological, and Historic Society for the County and City of Chester. Part II. July, 1850, to December, 1851. Printed at the *Courant* office, Chester. 1852.

This part of the "Chester Architectural and Archæological Journal" contains a number of interesting articles, among which are one on Bruera, Saighton, and Bunbury; and one on Beeston Castle, by Mr. W. Ayrton; on St. John's Church, by the Rev. Chancellor Raikes; and on the history of seals, by the Rev. W. H. Massie. The volume is profusely illustrated with rough sketches, a multiplicity of which are given in place of a few of a more elaborate description, at an equal cost. The practice has its advantages, but some of those here given are rather too rough for their purpose.

* [If life assurance be undertaken by the benefit society itself instead of the agency to a London Assurance Company, the society will have to be enrolled under the Act 13 & 14, Vict. cap. 115, renewed by the Act 15 & 16 Vict. cap. 65.]

Miscellanea.

Art-education for the Working Classes.—A lecture on "The Method and Means to be adopted in teaching elementary Drawing," was delivered by Mr. J. A. Hammersley, a short time ago, in Manchester. The Very Rev. the Dean of Manchester presided, and opened the proceeding by observing, that the subject of introducing a system of instruction in art into schools receiving Government grants had been maturely considered by the Privy Council for Trade, and they had determined that in future it should form a part of the education given in such schools. Mr. Hammersley commenced by stating that he had been called upon by the Committee of Privy Council for Trade to give every assistance in his power to introduce a system of instruction in art into schools receiving Government grants. Drawing should be considered as a means of educating the eye to understand the size, proportion, and relationship of objects. The education which was proposed to be given in schools receiving Government grants, must be understood not as picture-art or statue-art, but the art of educating the eye to understand an object when it saw it, and educating the hand to draw it,—that the eye should be taught to recognise the form, and the hand the cunning to reproduce it on paper, canvass, or stone. The instruction to be given was to educate the eye in seeing, and the hand in delineating. Even the drawing of a straight line had a great deal to do with social comfort. He contended that houses would be all the better if there was more order manifested in their form—that the feeling of comfort would be strengthened if the tables were straight—the pictures hung horizontally, and if every article of furniture had its place; and if a sense of order were general in the minds of the people, ministers of religion would have an obstacle in their present instruction entirely removed.

Cow-Houses in the City of London.—The surveyor to the City Sewers Commission, Mr. Haywood, has reported to the commission on the subject of cow-houses and the regulations necessary for their proper conduction within the limits of the City. Their number is stated to be 26, and the total number of cows in them, 266. The introduction of milk from the environs and the country by railway is said to be now very large and rapidly increasing, and the reporter concludes that there is now no necessity for allowing cows to be kept within the limits of the city at all. Stringent regulations as to paving, drainage ventilation, cleansing, &c. are recommended, and it is stated that, in practice, scarcely any of these points are attended to as they ought to be.

Vestibulum *v.* Atrium.—It may not be useless to inquire whether we do not generally find the term "vestibule" miscalled. At p. 93, of your interesting work, where the Queen's Station at Windsor is noticed, an error of this sort perhaps arises from not thinking of the original meaning and form of the word "vestibulum." In the "Attic Nights" of *Aulus Gellius*, translated by Beloe, there are the following remarks on this subject:—"We have many words in common use, of whose proper and exact signification we are yet ignorant, but, following the common acceptation without examining it, we rather *seem* to say what we mean, than really do say it. As *vestibulum* is a word perpetually occurring in conversation [in plans], but by no means sufficiently understood by those who use it without reserve, I have observed that some, even learned men, thought the *vestibulum* was the first part of the house, which is commonly called *atrium* (the hall)." The classic author goes on to say, "The vestibule is not either in the house or a part of the house, but is a vacant space before the gate of the house, through which there is an open way and access to the house, while on the right and left, between the gate and the house, which are united to this way, a space is left, and the gate itself is divided from this way by an area." The above may point out an error that from custom is not commonly considered such. F. Lush.

*** It is quite true that originally the *vestibulum* did not actually form part of the house. It was a yard or court surrounded on three sides by the house, and open on the fourth to the street. In modern times, however, it has come to mean an apartment which serves as a medium of communication with other apartments, and is now quite correctly so used.

GAS.—The Chesterfield Gas Company, we understand, has determined to lower the price of gas to 5s. per thousand cubic feet, after the present half-year. An increase of consumption, says a local paper, will, in all likelihood, speedily take place, and the alteration be beneficial both to the company and the public.——It would appear, from the various movements in other provincial towns, says the *Doncaster Gazette*, that Doncaster is to be out-generalled and left in the rear unless the company are prepared to make a further reduction in the price of this necessary article. A few instances must suffice. Wakefield, on Monday, lowered the price from 4s. to 3s. 9d. per thousand feet. The Sheffield Gas Company have announced that to large consumers they will charge 3s. At Whitehaven, the new gas company purpose to sell it at 2s. 6d.; whilst the old company offer it at 3s. 4d.; just 1s. less than at Doncaster. The Burnley Company have announced 6d. less in their charge for the current year, and a proportionate reduction in the charges for the use of meters, a fact worthy of the consideration of the Doncaster Company.—— The East Retford Gas Company have refused to receive a deputation of gas consumers, who desired to have the price of gas reduced. The Board, however, are said to have resolved that the price of gas be reduced from 6s. 3d. to 5s. 5d. per thousand feet, from December last, with 5 per cent. to large consumers as heretofore. They charge the railway station, it is said, 4s. 3d. the same price as is paid by the general class of consumers in Doncaster. There is a willingness by some of the directors to make a still further reduction, provided they could with certainty secure their present per centage of 7½, which they think they are fairly entitled to. Doncaster is contented with 5. There is some talk of a rival company being established.——Messrs. Kirkham, engineers, have secured a patent for improvements in the manufacture of gas for lighting and heating. The first consists in manufacturing gas from water, by decomposing it in contact with incandescent coal in suitably-arranged retorts. The quality of the gas thus produced may be improved by passing it through heated retorts, and then through other retorts containing Cannel coal, undergoing the process of distillation. The second consists in purifying coal-gas by sub-chloride or oxichloride of antimony, which may be obtained by boiling the black sulphuret of antimony (common antimony ore) in muriatic acid, and then washing it [or, more correctly rather, washing the oxichloride away from the sulphur, which remains in yellow granules at the bottom of the vessel, while the oxichloride when stirred pervades the water like milk, and, before it settles, is poured out carefully, so as to leave the sulphur, and then is allowed to settle, when the clear water is poured off]. The material may be used either in the wet or the dry state, in the same manner as practised in lime purification.

MAIN DRAIN FOR LONDON.—It has been said that London cannot be drained and made healthy because "the traffic which would be caused even by the removal of the earth, in case a scheme should be carried out, would block up the thoroughfares of the metropolis." Having been startled at this announcement I have run into a calculation to ascertain something near what this enormous traffic would be, should a general flow of drainage be executed. Therefore, taking a mile in length of a leading line of sewer and assuming that it would be constructed at the rate of 50 feet a day, which would be something under four months for completing a mile of sewer, and at this rate of speed, there would have to be carted to the nearest tip, or to the river side, about 100 cubic yards of earth, or equal to 5 loads per hour for 10 hours of the day. I leave your readers to draw their own conclusions as to what extent the traffic of the streets would be interfered with by the addition of five carts per hour, or 50 during the day, even were it in the most crowded thoroughfares.—R. N.

THE IRON AND COPPER TRADE.—The mania in the iron trade has begun to manifest decided symptoms of the suicidal influence which we have long anticipated. Pig-iron has been imported from Belgium into England owing to the extravagant rise here, a circumstance never before known. The Belgians have likewise been sending rails to America, by an order through England. This is not all, however: neither is it the worst symptom to which recent speculation has given rise. The iron trade of America is arousing to a state of excitement scarcely less active, but assuredly less unwholesome, than our own,—and the Americans are not the people to lose an advantage once gained. Our American export trade in iron is not much longer likely to be our chief one, as it has hitherto been; and, as remarked by the *Birmingham Journal*, in giving numerous details from Boston of the animated doings in the iron-trade districts of America,—the Americans will probably ultimately help us to supply not only themselves but their Canadian neighbours, and even the Australian market. The *Journal*, on the whole, regards the look-out from Birmingham as but a bleak one. Would the ironmasters only take a lesson from the Amalgamated Engineers, and the engineering activity in France and elsewhere abroad to which foolish doings at home have given rise, they would surely secede at once from the ranks of those reckless speculators who care nothing for the permanent interests of the iron trade, and are only concerned about making their own speedy fortunes during the hubbub, which, like another class of *speculators*, they have managed to kick up for the special purpose of "doing a good stroke of business" while it lasts. A week or two ago there was a slight glimmering of returning sense, in a tendency to reduction of prices, but the speculators have recovered their advantage, and will doubtless keep it till they can profitably "speculate for a fall," and then do what they can to produce the panic by which they alone may benefit in the wreck and ruin of every one else concerned in the business. The price of copper is advancing by rapid strides. "During the past week," says the *Birmingham Gazette*, "very considerable embarrassment has been experienced by the manufacturers of copper and brass articles, in consequence of the extraordinary state of the copper market. An advance of 18*l.* 10s. per ton on copper has been declared by the smelters at their meeting in London. The quotations stood thus:—Best selected, 129*l.*; tough cakes, &c. 126*l.* per ton; sheathing, 1s. 2d. per lb. These prices are for quantities not less than three tons; 20s. per ton extra required for any smaller quantity. Even at these prices the metal dealers will not take orders, in anticipation of a further advance. This extraordinary advance on the raw material is much to be regretted, as it renders all but impossible the execution of contracts, and presses most severely upon manufacturers of limited capital. It is therefore to be hoped that nothing short of absolute necessity will lead to further advances, which must be attended with great embarrassment to the manufacturers, and loss of employment to the workmen. Many branches of trade in Birmingham are beginning to assume rather an anomalous position."

DISTRICT SCHOOLS OF PRACTICAL ART IN THE METROPOLIS.—It ought to be generally known that the department of practical art, upon receiving requisitions from parochial and other authorities, are now prepared to aid in forming district schools of art, and elementary drawing classes. A suitable room, or rooms, with lighting and firing, will have to be provided by the local authorities, towards defraying the expenses of which certain fees received for instruction may be applied, and the department will appoint, and guarantee the salary of, a suitable master, and assist in providing a supply of copies, examples, models, &c. for the use of the students. This is a step forward.

COTTON.—SOCIETY OF ARTS.—On Monday evening, Mr. Frederick Warren, of Manchester, delivered the first of a course of four lectures, at the Society of Arts, on the History, Trade, and Manufacture of Cotton. This lecture was devoted to a consideration of the natural history of the cotton-plant, and of the countries in which it flourishes. The lecturer referred to the condition of the people in cotton-growing countries, and showed how the increase of our trade with America in this article had been the direct cause of a gradual extension of slavery, and had tended to raise the money-value of the slave. There were but two ways, he said, in which England could put a stop to that abominable system, and, looking at it simply in a commercial spirit, he believed it was her interest to do so. The first was to purchase the whole of the slaves, and give them their liberty, as we had done in the case of our own colonies; and the other was to encourage the growth of cotton in British India, which had been shown to be capable of producing as good qualities and as great varieties of cotton as any other part of the world. In India, too, British subjects would be employed as free labourers in its cultivation, and the cost of whom would not exceed, if indeed it came up to, one-sixth of the cost of slave labour. There were many reasons, obvious to any one who thought on the subject, why it was advisable that we should not depend so completely on America for our increasing requirements. There was never much more than two months' supply on hand, and already, on several occasions, this supply had been jeopardized,—sometimes by natural causes, as the failure of the crop,—at others, by the attempt at monopoly on the part of American speculators,—which had obliged us to pay a higher price, amounting, in one instance, to between four and five millions in the year. When it was considered that two millions of our people were dependent for their daily bread on this trade, it became of the utmost importance that we should take every means in our power to prevent anything like an impediment arising to the regular and uninterrupted supply of so important a commodity.

THE FALL OF MOORFIELDS CHURCH, SHEFFIELD.—A meeting was held last week at the Cutlers' Hall, Sheffield, to receive the report of the architect selected by the Church Building Commissioners and the Incorporated Society, as to the cause of the recent accident. The Rev. T. Sales, the vicar, occupied the chair. A communication from the architect of the church was first read, in which the accident was attributed to the extremely wet weather acting on the newly-erected walls of the tower and its foundations. The building being placed partly on the rock and partly on soft ground, the rain, he considered, had made the soft parts still softer, while the rock would not be affected thereby, which consequently tended to promote unequal settlements. The non-appointment of a clerk of works while the foundations were being laid, was also alluded to in the communication, and it was stated that the contracts had been carried out according to the report of the Incorporated Society's board of architects, except that brick was used for the arches instead of stone. Mr. Chantrell, in his report, which was then read, says:—"I conclude that the cause of the destruction of this building is, that the substance of the piers was inadequate to the support of a tower, independent of their improper construction, the want of sufficient abutment to resist the lateral pressure of the tower arches, the irregular weight thrown upon the haunches of these arches, and the omission of solid rough Ashlar, properly bedded under the piers and pillars; and that the general deficiency of the foundation walls has occasioned the fissures throughout the exterior." The erection of the tower, as at first proposed, is said to have been previously forbidden as dangerous to the fabric. The architect, however, alludes in his communication to the general strengthening of the work as instructed. A letter from the Incorporated Society was inclosed with Mr. Chantrell's report, stating, that in consequence of the nature of that report, the society's grant would be cancelled. The rebuilding of the church had been offered to Mr. Chantrell, who at first accepted the offer, but afterwards expressed his conviction that some architect resident in the town ought to be asked to undertake the work. Mr. Thomas Flockton was accordingly appointed. The estimated cost of the fallen building appears to have been regarded as less than it was possible to erect it with. The vicar stated that the danger to which the erection of the tower gave rise was known after its erection, but that the men were instructed to keep him in ignorance of it. The contractors expressed their desire to know on whom the responsibility of the fall was considered to have devolved. They held the vicar responsible to them.

"THE SYDENHAM SUNDAY."—A pamphlet has been published by Saunders and Stanford, of Charing-cross, titled "The Sydenham Sunday,—its good promise, and why so needful; and showing the vagueness and thorough impracticability of the Rev. Dr. Cumming's proposal to supersede the necessity, as regards the working classes, of opening the New Crystal Palace on Sunday." The author is himself a *bonâ fide* working-man—Mr. J. Daeres Delvin, shoemaker. He is an experienced author, however, and knows very well how to write for public perusal. Towards the conclusion of his pamphlet,—which is closely printed, and rather too discursive, perhaps, even though only a twopenny one,—the author says,—"I am no willing descerator of the Sabbath. Lightless and embittered as my teaching and 'bringing up' have been, I have in some way grown to pay to it a more respectful deference, and feel for it much sincere admiration. To me, and such as me, it has always been the best of friends: its whole history tells me so; for had it not been for the institution of such a day, *Mammon*, indeed, long ere this, would have reigned all-dominant; powerless Toil been whipped to its task of *the* day on *every* day—no rest, no nothing but work—ignorance, filth, nudity, disregarded complaining, unsavoury and meagre food, and a rapid death! I cherish, then, almost to adoration—nay, even to actual adoration—this so-far bulwark against unmitigated industrial slavery, and uncommiserated wretchedness." In all this we cordially sympathise with Mr. Delvin: we are most jealous of the slightest encroachment on the rest and relaxation of the day of days. On this account, however, we would deeply regret the institution of continental Sundays. Yet we fear the too zealous endeavours of Church defenders will, by reaction, drive the working classes into Scylla to escape Charybdis. Could not an arrangement be made whereby the ends of both parties would be forwarded? Would not the concentration at Sydenham of tens of thousands of those who are least likely, perhaps, to be found in a church or anywhere but in a beer-shop or a gin-palace on a Sunday, constitute one of the finest fields possible for missionary preaching, were the directors to allow it? Where else could such congregations of the very classes requiring such teaching be collected as they might and would be in the parks of the Crystal Palace on a Sunday?

Cambridge Architectural Society.—The first meeting for the present term was held at the Society's rooms, on Thursday, the 10th. Mr. Lowndes announced that he had received a letter from Mr. C. E. Brown, churchwarden of Trinity Church, saying that the proposition of erecting two large galleries in that church had been rejected at the vestry meeting by a large majority. In congratulating the society that there was at present no occasion for interfering so as to prevent any further mutilation of this fine church, mention was made that the society must be ready to oppose any steps that may be taken for bringing forward this project at any future period. A member of the society drew attention to a clause in Burn's "Ecclesiastical Law," enacting, that any attempt to make alterations in a church without leave first obtained in writing from the ordinary, subjects the promoters to high censure, and to heavy penalties and prosecutions in the ecclesiastical courts. Mr. Wollaston gave an account of the new painted-glass windows that were completed for the chapel of St. Peter's College.

The Association for Repeal of Taxes on Knowledge.—The committee of this association has lately published its second annual report, in which it recapitulates the history of the movement, for the information of those who are now joining it for the first time. Though nominally only the second report of this active association, the present is really its fourth, the association being merely an enlargement of the Newspaper Stamp Abolition Committee. Its history and objects are here stated in a clear and concise manner, together with an exposure of the consequences and evils of the taxes which the association desire to abolish, namely all those on the press,—advertisements and paper inclusive, as well as the securities required to be given on the establishment of newspapers. In their good cause we wish them good speed; and we think, with the committee, that in the present Parliament, and under the new ministry, there is renewed hope of the exemption of the press from a taxation which is utterly inconsistent with, and neutralizes, the outlay of the nation on its educational establishments.

Discovery of the Foundations of the Ancient Priory Church, Leominster.—A great deal of interest has lately been excited by some excavations which have for the last fortnight been going on in the garden attached to the ancient priory of this town, now the site of the Union Workhouse, and this interest will, no doubt, be much increased as the highly interesting discoveries which are daily being made become better known to the public generally. The foundations of the choir, presbytery, and transepts have been gradually developed, each day's work bringing to light some fresh point of interest. The committee have been unremitting in their attention to the workmen, and have held several meetings since the commencement of the excavations, for the purpose of carrying on their operations in a practical manner.

The Bayeux Tapestry.—The Rev. J. C. Bruce, M.A. historian of the Roman Wall, says the *Gateshead Observer*, is now delivering a course of lectures before the Literary and Philosophical Society of Newcastle on the "Bayeux Tapestry." We were glad to see a crowded audience. A well-executed copy of the tapestry was exhibited on the walls, and was an object of general interest. It could not but remind the spectator of *Punch's* illustrations of "Ye Manners and Customs" of bygone ages. Ludicrously ill-drawn, there were, nevertheless, considerable force and spirit in the representations; and, viewed as a historical panoramic picture, nothing of the kind could possess more attraction for an intelligent Englishman. Mr. Bruce stated the controversy to which it had given rise. . . . . We would gladly follow him through his lectures, but must forbear. We trust that he will himself place them in print, and illustrate the volume with a reduced copy of the tapestry.

New Almshouses.—The late Earl of Beauchamp has left 60,000*l.* to be expended in building and endowing almshouses at Maddresfield for decayed and destitute agricultural labourers.

The Joiners of her Majesty's Dockyard, Devonport, have petitioned, or are about to petition, the Lords Commissioners of the Admiralty for an increase of their wages, on the ground that they receive only 21s. a week, and out of that sum are bound to provide tools of different descriptions, besides such as are used on board sea-going ships, where they are liable to be lost.

Tribute to a Foreman.—We are asked to mention that at a dinner given on Saturday last the persons in the employ of Messrs. Sanders and Woolcott, builders, presented Mr. Aldridge, their late foreman, who had resigned, with a silver snuff-box "as a mark of their respect and esteem on his resigning the situation of foreman."

Manchester Architects.—A student asks,—"Why there is no architectural association in Manchester, similar to those in other provincial towns,—Liverpool, Edinburgh, Glasgow, and Bristol, for example? Is it that there is less feeling or interest in the improvement of art, that there is less care amongst the architects for anything beyond the pounds, shillings, and pence of the profession than in the above-mentioned places, or that they are so far in advance of the majority of their professional brethren, that they do not deem it necessary to cultivate each other's acquaintance, mutual goodwill, and friendship?" There was at one time a flourishing architectural association in Manchester, but it died out. Liverpool and Manchester might with advantage go into connection for this end.

Equestrian Statue in Washington.—The inauguration of the equestrian statue of Jackson, the work of Mr. Charles Mills, took place in Washington on the anniversary of the battle of New Orleans. The day was unusually fine. The statue has the peculiarity of resting unsupported save by the two feet, there being none of the usual props and adjuncts. We learn from the New York *Literary World* that the statue is cast from brass cannon captured by Jackson, in ten pieces, the horse in four, the figure in six, the junction of which evades the closest scrutiny: its weight is nearly fifteen tons, and the full height from the top of the pedestal, fourteen feet.

Tents for Emigrants.—A correspondent asks, how a very cheap, and, at the same time, thoroughly water-repelling portable tent, may be constructed? He says, "By waterproof, I mean simply as regards the walls of this sort of shelter,—for I well know, by experience under some of the double commissariat tents, that the water thrown off from the roof filters in below, until, after a few hours' rain, all beneath you is a quagmire. As living through an Australian winter under canvas would, for this reason—independent of the bitter cold—be impracticable, all but the mere monomaniac will put a small restraint upon his impatience to be delving after gold until he can knock up something of a hut,—no matter how rude, so long as it is dry, and have a fire hearth and an exit for the smoke. The gum-trees of Australia at one season of the year shed their bark, and at all seasons it may be removed in great slabs, large enough to form a canoe. If the fires and general improvident conduct of the people assembled there have left any of this, might it not serve for roofing? But how can walls be most easily and quickly raised,—by mud, clay, grass and mud, or stones? A hint thrown out by practical knowledge of building would be of great value. Time is, of course, extremely valuable in such a field of labour; besides, much nicety would be, perhaps, thrown away, as new and more abundant locations are constantly announced. I fancy cloth sufficiently good for tent-making might be purchased at about 6*d.* the yard, 2½ yards for each side, and about 4 feet breadth at the ends, would make, at 6½ yards of canvas, 3*s.* 3*d.* for a tent, 4 feet high,—that is but a small affair; but in fine weather any body can sit out under a tree, or lie on the grass, when not engaged digging. To sleep under the above would be enough, as but few of us can afford to pay 9*l.* per cwt. for carriage; and most will be obliged to carry all their luggage themselves from the spot it is landed at, and afterwards make 'their legs their compasses.' On the journey to the mines, with all our gear upon our backs, portability, combined with waterproof qualities and cheapness, is what we require."

Hydraulic Machines in Agriculture.—Spain, strange to say, appears to be leading the way to an obvious and important improvement in irrigation. The *Boletin Oficial de Toledo* gives the following account of the employment of a hydraulic machine there. It says:—"We have seen in this city, for the first time, the application of a hydraulic machine, constructed in Madrid, in the manufactory of Nicolas Grouselle and Co. outside the gate of Bilboa, destined to raise the waters of the Tagus for the irrigation of the lands which surround it. The results obtained ought to fix public attention and that of the authorities of the provinces in an extraordinary manner, from the importance which the establishment of these machines may give to our agriculture in all the points where their application should be possible, employing the force of water as the *motor*. The machine, which we have seen in action, has highly exceeded the expectations which we had conceived of it. Placed upon a dam, which had been broken and abandoned for some centuries, the engineer constructor has succeeded, with the insignificant fall of a foot and a half, in obtaining a moving power which raises 130 arrobas (25 lb. each) of water per minute to the height of 30 feet, which is equal to what eight norias would produce, for which, working for twenty-four hours, it would require thirty horses." The general importance and utility of hydraulic machines of various kinds, in town as well as country, are not yet appreciated as they ought to be and will be.

TO CORRESPONDENTS.

"J. R. P." (nothing fresh), "W. and B.," "T. A.", "Students," "C. M. S.," "G. T." (shall appear), "J. F.," "R. Angelo" (has had our reply as to the return of short communications), "Architectus," "H. W. D.," "R. S." (under our mark), "T. D." (ditto), "P. P." (ditto), "S." (ditto), "J. T. M.," "H. B. C.," "H. C.," "J. J.," "W. W.," "R. B.," "Armory," "W. D. B." (yes), "J. L." (scarcely one), "J. C." (the Seyssel Asphalte Company), "Z." (shall appear).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

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ACCOUNTANT.
Mr. James-Scarth, 79, Basinghall-street.

SECRETARY.
Mr Sydney Turner.

This Company was originally formed to carry into practical use the beautiful and ingenious machine known as Searby's Patent, by which work fixed on a floating bed, directed by the pantagraph, is moved with facility and exactness in all the directions of the cube, under a fixed tool or tools; producing with accuracy and beauty, by carving or engraving in wood or any other suitable material, copies in any desired number of almost anything which may be presented to it.

The directors have now the satisfaction of announcing to the shareholders and the public, that they have concluded an arrangement, by which they will not only be enabled to bring their machines into immediate use, but, by combining with their own patent those valuable and effective machines invented and patented by Mr. Jordan, will embrace every description of machine carving; and by the possession of all these patents for such purposes, which have been proved to be good and effective, will avoid all competition.

This arrangement consists of an agreement for the purchase of Jordan's patents from the proprietor, Mr. John Taylor, of No. 6, Queen-street-place, Upper Thames-street (to whom reference may be made), which purchase includes the extensive works in the Belvidere-road, Lambeth, and of the whole of the machinery, plant, and stock thereon.

This important property comprises large and commodious premises, with engine power, and every appliance necessary for carrying on work without delay; and it may be safely asserted that, with the combination of the patent rights and processes of manufacture now possessed by the company, every kind of carving, cutting, or engraving, can be readily and economically accomplished.

Jordan's patents, it should be observed, have been in practical operation for some years, having been employed in the execution of the whole of that elaborate and beautiful display of carving which adorns the new Houses of Parliament, as well as that of many churches and mansions; and having moreover produced some of the finest specimens of wood carving displayed at the Great Exhibition of 1851.

It may be desirable to particularize a few of the uses to which the several patents are applicable, viz.:—

Ornamental carving, both in wood and stone, for architectural and other purposes, such as oak carving, as for churches and Gothic furniture, saloons and cabins of ships, picture and other frames, open tracery, lattice and other work of a similar nature.

Carving in ivory, bone, pearl, and metal, wood and metal letter cutting, saw and other tool handles, engraving on wood and type metal, blocks for paper stainers, calico and handkerchief printers and floorcloth manufacturers, engraving on brass, copper, and zinc, for door and window plates, brass letters on shop or other windows, metal seal engraving in armorial bearings, cyphers, steel and copper plate engraving.

In addition to ornamental stone work, such as Gothic window heads, sash-bars, monumental tablets and ornaments for churches and other public buildings, which may be multiplied with unerring fidelity, the machines are capable of copying busts; they will also copy carvings in wood, stone, or metal, in any size, from the same pattern.

All these works are executed at a large saving as compared with hand-labour; and as the company will aim at supplying manufacturers of all articles in which work of the above descriptions is employed, they do not doubt that at a time like the present, when the demand for manual labour has become excessive, their aid will be extensively sought, and will be attended with advantage and profit to both parties.

The Directors, giving the usual preference to their original shareholders, are prepared to issue shares to the full extent of their present reserve; application for which may be made in the annexed form, addressed to the Manager or Secretary, at the Offices, 19, Bucklersbury, where specimens from each of the patents will be ready for public inspection.

Prospectuses may be obtained at the above Offices; at the Works, Eaton-lane South, Lower Belgrave-place, Pimlico, and Belvidere-road, Lambeth.

FORM OF APPLICATION FOR SHARES.

To the Directors of the Pantagraphic Cutting, Carving, and Engraving Company.

GENTLEMEN,—I will thank you to allot me ..... shares in this company, and I hereby agree to accept the same, or any less number that may be allotted to me, and to pay the sum of 1*l.* per share when required.

Name in full .....
Address .....
Profession .....
Date .....
Reference .....

FIRE-PROOF CONSTRUCTION.—FOX AND BARRETT'S PATENT.

The economy of this system, in which joists of wrought or rolled iron are now almost exclusively used in the construction of floors and roofs, is still maintained, notwithstanding the recent advance in the price of iron. Additional rolls have been prepared, which, by varying the section, admit of the economical application of the joists to all bearings, and to every description of building.

The subjoined classification of buildings erected upon this principle will show the extent to which it has been applied:—

Private mansions, dwelling-houses, offices, and chambers.
Dwellings for the working classes.
Public hospitals.
Lunatic asylums and workhouses.
Colleges, training institutions, and schools.
Hotels, banks insurance offices.
Public exhibition-rooms, bazaars, &c.
Buildings for records.
Public baths and wash-houses.
Mills, warehouses, and grain-lofts.
And besides the numerous works completed, the following are some of the buildings of a Public character now in course of erection:—
King's College Hospital.
Guy's Hospital Extension)
St. Mark's Hospital for Fistula.
Metropolitan Convalescent Asylum.
Gloucester and Bristol Diocesan Training Institution.
The Railway Hotel, Carlisle
The Record Buildings at Aberdeen and at Birmingham.
The Bloomsbury Baths and Washhouses
The Leeds and Yorkshire Assurance Buildings.
Baliol College, Oxford (Extensions).
Trinity Hall, Cambridge.
For buildings of the description and magnitude of many of these the system possesses very great advantages; and it is of equal importance in the construction of dwelling-houses, offices, &c.; the cost, which will necessarily vary in different localities, not exceeding in the average that of substantial and well-constructed timber floors.
Further information may be obtained on application to the Proprietor of the patent,—Mr BARRETT 12, York-buildings, Adelphi.

LIGHTERAGE.—To Saw-Mill Proprietors, Timber, Slate, and Stone Merchants, or others, requiring Lighterage.—The Advertiser having a large number of Barges, is willing to undertake LIGHTERAGE at prices that defy competition.—CHARLES STRUTTON, 34, Commercial-road, Lambeth.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages obtained by FISH-JOINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 25th August. This invention not only saves a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the safety and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar, and which fish-jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish-jointed rails that were under water, and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

Eastern Counties Railway,
East Indian,
Edinburgh and Glasgow,
Egyptian,
London, Brighton, and South Coast,
London and North-Western,
Midland,
Maryshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr. Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:—

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Midland Great Western (Ireland),
Northern Railway of France,
Newport and Abergavenny,
South Wales,
St. Germains and Versailles,
West Cornwall.

The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E., G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

Londonderry and Coleraine,
East Indian,
Midland,
East Lancashire,
Londonderry and Enniskillen,

and several other lines.

Extract from the Directors' report to the last half-yearly meeting of the Londonderry and Enniskillen Railway.

"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

"It has fully answered the expectations formed of it, and there can now be no doubt that its adoption, coupled with the lessened wear and tear from the use of light engines, will effect a material saving in the maintenance of permanent way."

The Permanent Way Company confines itself entirely to the granting licenses to use their various patents, which is done upon very moderate terms.

These several systems have been adopted hitherto to an extent of upwards of 600 miles on the above-mentioned railways.

Every information may be obtained by applying to Mr. CHARLES MAY, C.E., 3, Great George-street, Westminster; or to WILLLAM HOWDEN, Secretary, 26, Great George-street.

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE,
Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body, by which term the power of covering surface well and extensively, is understood. Painters, Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 8, Upper Thames-st.
LIVERPOOL	Mr. Richd. Cooke, 7, Sise-lane.
MANCHESTER	Messrs. Johnson and McGowan.
LEEDS	Mr. James Douglas.
SUNDERLAND	Messrs. T. and E. G. Jepson.
DEVONSHIRE AND CORNWALL	Mr. John Young.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Richd. Penrose, Tavistock and Plymouth.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
DUBLIN AND SOUTH OF IRELAND	Mr. John Slimshaw, Glasgow.
BELFAST	Mr. P. Lindsay, 91, Middle Abbey-street, Dublin.
	Messrs. William Stevenson, jun. and Co.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

WANTED to invest, from 700*l.* to about 2,000*l.* in long leasehold or freehold property; if the former, must return 8 per cent. on purchase-money, after deducting ground-rent and insurance. North or north-west of London preferred.—Direct, E. care of John Robt. Chidley, Esq. 19, Gresham-street, City.

MERTHYR TYDFIL LOCAL BOARD of HEALTH.—WANTED to BORROW, on the security of the rates of the district, a sum of 70,000*l.* at a rate of interest not exceeding 4*l* per cent.—Further particulars may be obtained of Mr. J. W. RUSSELL, Solicitor, Merthyr Tydfil, Clerk to the said Local Board.

LOANS.—Persons desirous of obtaining ADVANCES from 50*l.* to 250*l.* upon approved personal security, repayable by easy instalments, extending over a lengthened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES.—Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6*d.* each copy, or 1*s.* per post. Note.—Four new classes are now in course of formation for London, and will immediately commence operations.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 58, Fall-mall, London.

HEAL and SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, SENT FREE BY POST, contains designs and prices of upwards of ONE HUNDRED different Bedsteads, and also their priced List of Bedding. They have likewise, in addition to their usual stock, a great variety of PARISIAN BEDSTEADS, both in wood and iron, which they have just imported.—HEAL and SON, Bedstead and Bedding Manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

DAMP WALLS.—NEW PATENT PAINT as used at the TOWER, by HER MAJESTY'S HONOURABLE BOARD of ORDNANCE; at the TUNNEL; ZOOLOGICAL GARDENS, Regent's-park, and various other public buildings; in quantities to finish twenty square yards for 10*s.*

PATENT LIQUID CEMENT for the fronts of houses, for beauty pre-eminent, giving the appearance of fine cut stone, and only one-eighth the cost of Oil Paint. In casts of 1, 2, and 3 cwt. at 8*s.* 15*s.* and 21*s.* each.

BLACK MINERAL PAINT, very permanent, half the usual price; only 3*s.* per gallon.

G. BELL and CO. 3, Wellington-street, Goswell-street, London.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Trays, &c. manufactured by J. M. BLASHFIELD, Mill Wall, Isle of Dogs (near the West India Docks), and sold at No. 1, Fred-street, Edgware-road, Paddington.

TO be SOLD a BARGAIN, for 10*l.* an excellent PULPIT and DESK, suitable for a chapel or auction-room.—To be seen at 13, Queen's-row, Pentonville-hill.

TO BRICKMAKERS.

TO BE SOLD, in consequence of the ground having been taken for public works, an entirely new EARTH WASHING MILL, with chalk washing runners, lifting buckets, three-barrel force-pumps, and gearing complete. Also, if required, a 50 horse-power STEAM ENGINE, boiler, and appurtenances, all having the same.—The above may be seen in full work, by applying to Z. BOWDEN, Caledonian Brickfields, Holloway.

NEW PATENT OMNIBUS.—To Capitalists and Omnibus Proprietors.—TO BE SOLD, in consequence of the death of the patentee, the RIGHT to an INVENTION, protected under the New Act, possessing great merit, and well worth the immediate attention of capitalists and others.—The model may be inspected at the Office of Messrs. MANSELL and ELLIOTT, 13A., Belgrave-square.

BLACK and FURNISHING IRONMONGERY BUSINESS for DISPOSAL.—The Premises are situate in one of the principal thoroughfares in the City; are spacious and well adapted for the business. Returns about 5,000*l.* per annum, which may be much increased. The stock is all modern, and of the best description. About 2,000*l.* will be required.—For further particulars apply to Messrs. FULLER and HORSEY, 13, Billiter-street, City.

IMPORTANT TO RAILWAY CONTRACTORS, BUILDERS, WHARFINGERS, &c.

FOR SALE, a PORTABLE COUNTING-HOUSE, 8 feet by 7 feet. Sash the whole size of the front; zinc roof, matched; lined inside. Lowest price, 8*l.*—Apply at 1, Lark-hall-lane, Stockwell.

PORTABLE STEAM PUMPING-ENGINE TO BE SOLD, price 80*l.* being one-third the original cost. It is in general arrangement a most perfect and simple machine, as engine and pumps are connected without any intervening gear. It also economises its fuel by working on the condensing principle, and the whole machine can be removed by three horses. Satisfactory references can be given to persons who have hired the same, or the purchaser, by advancing 6*l.* may see its performance prior to purchase.—For particulars, apply to ROBERT CRICKMER Spa-road, Bermondsey.

TO PLUMBERS, GLAZIERS, AND PAINTERS

TO BE DISPOSED OF, a BUSINESS in the above line, doing a first-rate Country Trade, capable of being considerably extended. To a person with a moderate capital, this offers a rare opportunity.—For further particulars, apply by (post paid), to A. Z. care of Messrs. Marlborough and Co. News Agents, 4, Ave Maria lane, London.

TO GLASS MERCHANTS.

WANTED, for Seven Shop-Fronts, in Ashford, Kent, about 1,000 feet superficial of BRITISH PLATE GLASS, in squares of various sizes. Parties desirous of tendering, may apply for particulars to Mr. W. FIELD, Builder, Ashford.—The Tenders to be delivered at Mr. FIELD'S, on or before the 21st day of February.—Ashford, February 10, 1853.

ARCHITECTURE, CIVIL ENGINEERING, SURVEYING, &c. Offices, 63, Chancery-lane, Holborn. Established above forty years. Mr. GRAYSON begs to inform those gentlemen who are interested in the above sciences that he continues to GIVE INSTRUCTION to Morning and Evening Classes; where, besides architecture, &c. ornamental, perspective, and landscape drawing, with access to an extensive and valuable collection of models and works on the fine arts.—Mr. GRAYSON in attendance from Nine, a.m. to Two, p.m. and from Six to Nine, p.m.

SAW MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw mills for exportation or otherwise.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.
The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manfactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NONTRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO., Wear Glass Works, Sunderland

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

FOREIGN SHEET GLASS, packed in 200-feet Cases; sizes, about 40 by 30—1l. 15s. case included.

GLASS TILES, ½ of an inch thick, packed in cases containing 50—2l. 5s. per case.

JAMES PHILLIPS AND CO. 116, Bishopsgate-street Without.

PLATE GLASS.—ALFRED GOSLETT respectfully begs to inform the trade that the Plate Glass Tariff has recently undergone a complete revision, that Plate Glass generally, but more particularly the LARGE-SIZED GLASS, has been considerably reduced in price, and that he is prepared to forward tenders for the supply of any quantity upon application.—Soho Crown, Sheet, Patent Plate, Plate Glass, and Wholesale Looking-glass Manufactory, 26, Soho-square.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, Ring-street, Baker-street, Portman-square.—Cash only.

TO BUILDERS, PLUMBERS, &c

JAMES MILES'S cheap ENGLISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, Church-street, Shoreditch, near the Eastern Counties Railway Terminus. Cases of foreign sheet, various sizes, 41s. 200 feet; crates of sheet, 14 to 16 oz. 3½d. per foot; good crown C C C, 18, 20s. 3d. and also C 18, 33s. per crate; patent plate; Hartley's ROUGH PLATE, stained, ground, and ornamental glass; crown squares of every size in stock; sheet lead; pipe; patent gaseplpe; solder and plumbers' brass work of all kinds; white lead, oils, and colours, at low prices; LARGE STOCK of PAPERHANGINGS; old lead bought in any quantity, or taken in exchange. Sashes glazed and primed in oil at very low prices, in any quantity.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD STREET.

ROBERT METTAM'S CHEAP WINDOW-GLASS WAREHOUSE, 30, Princes-street, Leicester-square. Established 1793. Cases of foreign sheet, various sizes, at 38s. 40s. and 42s. per case of 200 feet; crates of sheet, 2½d. per foot; patent plate, rough plate, stained, ground, and ornamental glass of every description. Glaziers' diamonds, 10s. 6d. 12s. 6d. and 15s. each. Builders' sashes glazed. Price lists forwarded on application, post free.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Richly-cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

PLUMBERS, PAINTERS, GLAZIERS, &c. can be supplied with any quantity of WINDOW GLASS, either in Crates or Squares, at the London Warehouse of JOSEPH POULSON, No. 9, Portman-place, Edgeware-road. Having much enlarged his warehouse, he is now enabled to hold one of the largest stocks in London of every description of Crown, Sheet, Rough Plate, Patent Plate, and Coloured Glass, and will allow as large a discount as any house in London. Carriage free to all railways. Sheet lead, pipe soldering, white lead, oils, colours, wholesale and retail. One hundred boxes of squares, containing 100 feet, from 10 by 8 to 5 by 3 to be sold, at per box, 10s. box included. Old lead bought or taken in exchange.

GAS CHANDELIERS, LANTERNS, LAMPS, &c.—The extensive stock of Messrs. BROOK and CO. 119, Bunhill-row, consisting of gas chandeliers, brackets, hall lanterns, table lamps, and lamps of every other description; also stained glass, gas moons, &c. TO BE SOLD without reserve, for cash only, at a considera'le discount from actual manufacturing cost.—119, BUNHILL-ROW.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The extraordinary panorama of LONDON BY NIGHT is now exhibited, day and evening. The Glyptotheca, Conservatories, Swiss Cottage, &c. The Panorama, being exhibited by artificial light, is seen to equal advantage in any state of the atmosphere, and the whole building, being heated by steam, can be visited with comfort at all seasons.—Open daily, from ten till five; and in the evening, from seven till ten. The most admired music from two till five, and during the evening.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE.—In consequence of the repeated applications for the reproduction of this celebrated and unique Moving Panorama, representing the destruction of Lisbon by Earthquake in 1755, it is now exhibited, for a short time, in all its original splendour, and, by the aid of new machinery, with increased startling effects.—Daily, at three. Evening at eight o'clock, illustrated by appropriate Music on the Grand Apollonicon. Admission One Shilling; Children and Schools half-price.

PATRON, H. R. H. PRINCE ALBERT.

ROYAL POLYTECHNIC INSTITUTION.—ENTIRE CHANGE of MUSIC.—An Optical and Musical Illustration of Shakspeare's "Midsummer Night's Dream," introducing the original music, by Sir Henry Bishop, Morning and Evening. Lectures by J. H. Pepper, esq. on the endless Amusements of Chemistry, adapted to a juvenile audience; by Dr. Bachhoffner, on the Mechanical Properties of a Jet of Steam; by Mr. Crispe, on Electricity; Galvanic Engine Dissolving Views, including Day and Night Views, of Walmer Castle, Walmer Church, &c. &c.—Admission, 1s.; Schools and Children under ten years of age, half-price.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRADYS, Belvedere-road, where terms may be obtained.

THE PIMLICO SLATE-WORKS. Patronised by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE notwithstanding the vile imitations and infringements of his patent that are attempted, continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

MARKET WHARF, REGENT'S PARK BASIN MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Lodes, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A stock of Norther's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

FREESTONE.—Architects and Others are respectfully informed that a great REDUCTION has been made in the price of the LITTLE CASTERTON FREESTONE, which may now be obtained at the Quarry, or at the Stamford Railway Station, at 1s. 3d. per cubic foot. This Freestone offers immense advantage to the purchaser, from the facility with which it is wrought.—Apply to FRAS. and OCTS. N. SIMPSON, Stamford.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE OF BEST QUALITY.

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Malm Place, half-washed Stocks, and Place Bricks, also on sale. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing.

Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

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ASHES and BREEZE for SALE.—A large quantity of Ashes and Breeze of the best quality for sale.—Apply to J. LEGG, Caledonian Brickfields, Holloway.

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The Builder.

SATURDAY, FEBRUARY 26, 1853.

DEEP are the "Mysteries of London," and so environed by dangers that few can penetrate them. The condition of large sections of its inhabitants is wholly unknown to the majority of those above them in the social pyramid, the wide base of which is made up of poverty, ignorance, degradation, crime, and misery. Much has been written on the subject within the last few years, and a large amount of good has been done. Still the great bulk of the people are ignorant and apathetic on the subject. Viewing the evil as a mighty one, and strongly impressed by the helpless—almost hopeless—condition of many thousands of fellow creatures, who cannot make themselves heard unless the press speak for them, we propose entering into some particulars respecting the lodging-houses and other dwellings in London inhabited by the poorer classes.

To investigate the condition of the houses of the very poor in this great metropolis is a task of no small danger and difficulty: it is necessary to brave the risks of fever and other injuries to health, and the contact of men and women often as lawless and as desperate as the Arab or the Kafir: in addition to these obstacles, there is amongst the very poor a strong feeling against intrusion: few persons venture into these haunts besides the regular inhabitants, the London missionaries, the parish surgeon, and the police, and thus the extent of this great evil is imperfectly understood. A few years since it was a fashion to visit the "Rookery" of St. Giles's, and wonder at the peculiarities of that strange land (and it was, perhaps, partly owing to these visits that some improvements were carried into effect); yet few of those visiters, and not many others, are aware of the numerous places in London and the Borough which exist at the present day in as bad a condition as any part of St. Giles's in its worst time. These blots on London abound in Whitechapel, Westminster, Spitalfields, Camden-town, Somers-town, Clerkenwell, Islington, Bermondsey, various parts of the Borough, &c. &c. In many instances these hotbeds of fever and vice are so effectually hidden by goodly houses that their inhabitants are little aware of the poverty and degradation which exist within a stone's throw from their own doors. These densely peopled clumps of houses, or "Rookeries" as they are called, are mostly inhabited by the poorest Irish lodging-house keepers, tramps, coster-mongers, thieves, and the lowest class of street-walkers, driven from the pale of decent society by improvidence and other causes. In addition to these are small shop-keepers, receivers of stolen goods, brokers, and publicans.

The condition of the greater part of these people it is difficult to describe in words which will convey anything like a just idea, yet it is a certain and melancholy fact that this dangerous and to the State expensive class of persons is alarmingly increasing in London and other large towns. This is easily to be accounted for. The poor Irish, who flock to these places, are many of them either unable to get employment, or are careless in looking for it. The women and children either beg, sweep crossings, or subsist (for it is nothing better) on the profits of the sale of such trifling articles as they can procure. The parents are mostly ignorant, so are the children: few are sent to school: few are taught any trade; and the great majority, from an early age, gain a precarious living in the streets: many become thieves (little wonder), and in their turn teach others. Most of this class either marry young or form connections by which the numbers rapidly increase. There are other causes, which it is not our purpose in the present paper to inquire into.

It is, however, certain that one important and leading cause of this degradation is the nature of the dwellings in which thousands of these outcasts are born, and in which they live and die. Improving these would do much towards improving them. Let us then penetrate some of the London shadows, and show their distressing depth,—their degrading results. When the nature and extent of an evil are thoroughly known, efficient remedies become more probable. The Act for Improving the Condition of the Common Lodging Houses seems to be working well; but in justice to the poor it must be followed by other measures.

So numerous are the London "Rookeries," and so generally bad, that it is difficult to fix upon a starting point. Circumstances, however, lead us to the outwardly respectable neighbourhood of the Marlborough-street Police Court: here, close to Berwick-street, exists a little-known but badly-built and badly-inhabited collection of houses. The people of this district were, and still are, the constant plagues of the police: some of the public-houses are of the worst description. Read the following printed announcement copied verbatim from the window of a chemist's shop close by: it will help to give an idea of the inhabitants:—

"LADIES AND GENTLEMEN
ARE RESPECTFULLY INFORMED THAT
BLACK EYES
ARE EFFECTUALLY CONCEALED
ON MODERATE TERMS.

It is warranted that the Preparation is not Injurious to the Skin."

No doubt this chemical and artistic process is profitable practice, provided the parties care sufficiently about disguise, for black eyes are plentiful enough. So great a nuisance and expense has this "Rookery" become to the parish and police authorities that it has been determined amongst several influential occupants in the parish to provide funds by voluntary subscription for the purchase of a large group of wretched buildings, and for the purpose of erecting on their site wholesome and convenient dwellings for the poor. The estimated sum for carrying out this praiseworthy design is 12,000*l.*: 4,000*l.* have been subscribed, and a large square space of the worst houses in the neighbourhood has been cleared away, and foundations already laid for the new lodgings. This is a movement in the right direction, for it is certain that the dwellings of the London poor should not be demolished without providing places which, under good regulations, they can occupy at moderate, yet fair cost.

A gentleman attached to the City Mission, who has manifested an interest in our inquiry, says that the houses destroyed were quite abominable, and the inhabitants most difficult material to deal with. Several desperate characters had lived there, and only those who had seen the houses previously could form a just estimate of the benefit of their removal. Several empty houses in the district have been pronounced unfit for lodging-houses, and are untenanted. One of these had been occupied by a woman—a marine store dealer and receiver of stolen goods—now in Newgate awaiting her trial for some offence.

The four sides of the square in which the improvement to which we have alluded is going forward, consist of houses mostly let in single rooms, which were, before the Lodging-house Act, occupied by numerous lodgers, male and female. The houses are mostly dilapidated and dirty in the extreme. In one of these houses, in a cellar reached by a dark staircase, the steps shaky and the stair-rails rotten, we found a dark apartment, in which were two bedsteads, with scanty and dirty covering. The flagged floor was bare and damp: in a part of the room stood a tin apparatus used for the sale of baked potatoes: partly under the beds were onions and baskets of potatoes (most of the London costermongers store their unsold fruits, flowers, vegetables, fish, and other commodities in similar places). There was no furniture except the two bedsteads, in one of which was an Irishman, who roused up at our entrance. "Not up yet," said the friendly missionary, "why, it is nearly eleven o'clock!" "Is it so late?" said the tenant of this gloomy abode; "but then I was not home until past three this morning, not having sold my potatoes." This man had six children and a lodger who slept in this place, as he said, and if it could be managed without the knowledge of the police, it is probable that several other lodgers would take up their nightly abode in it.

At the back of most of the houses alluded to, after passing through a long passage, are small square badly-paved courts, like that shown in the engraving (fig. 3, p. 137). The water stands here and there in deep puddles. In those we saw were conveniences, as shown in the engraving; a dust-heap (A), formed by a large stone slab, well filled with dust and refuse. "The dust," said a person living here, "is not often taken away." A water-tank (C). These are all shared amongst the lodgers in the cellars, say eight persons. If only five persons occupy each of the eight rooms in front, and six the two rooms in the back court, this is all the accommodation of water, &c. provided for fifty-four persons.

On ascending the wooden steps shown in the engraving on the right hand we find the room also engraved (fig. 2). We have not selected this as a harrowing example of London dwellings, although it is bad enough. The court is enclosed back and front by tall houses. The room is little more than 7 feet long by 6 wide; the greatest height 6 feet 9 inches. The narrow bedstead, which is doubled up in the daytime, reaches, when let down, close to the fire-place. The roof and part of the walls are green and mildewed with damp: through parts of the roof the sky is distinctly visible. Our engraving makes the room appear too large.

In proceeding with this inquiry, it is important to describe the class of persons who occupy the various places visited. The room engraved is occupied by a married couple of about twenty-two or twenty-three years of age, and a little girl about two years old. The young man had been brought up amongst poor persons in the neighbourhood: his education had been partly neglected, but he had been employed in various ways until he obtained a situation as light-porter. He married a respectable young woman, a servant. A short time after marriage he lost his situation, and has since endeavoured in vain to obtain another. By some means he and his wife got into the method of cutting thin wooden splints, which are used in public-houses and cigar-shops. This, he says, is "poor work: the price has become so much reduced, we are glad if we can manage to get two meals a day, and then but poor ones. We seldom can manage to get a fire except on Sunday, and perhaps on part of Monday; and this place is very cold, there are so many holes. I have spoken repeatedly to the landlord, but he has done nothing. I pay 1s. 6d. a week. I am 6s. 6d. back in my rent. The rain during the last wet weather poured into the room, sometimes upon the bed. In the morning and during the wet days we have a pool of water under the bed and on the floor. No one lives below: it is a kind of stable, and very dirty. The little child is often ill. I have parted with many of my things." The child

was small, drooping, and bleached, like many of the plants which attempt to vegetate in such places. Yet here we have not an example of the dire stage of London poverty. It is but a step in the story. Here are fire-irons, and various matters which would bring a price: there the neat hand of woman—the world's blessing, and who in her lowest degradation has a perception of the beautiful,—has given a dash of taste to the arrangement. Above the mantel are several little framed prints; one representing two lovers walking on a terrace, overlooking trees and gardens bright in the light of the clear sky: another shows a richly-furnished chamber, with a couple of more mature years: there are also some unframed prints of the young Royal family, and a row of small beads are festooned in the centre. On the mantelpiece are various little baskets, and other nicknacks of no great value, but evidently relics of a more prosperous time; a little key, perhaps of some prized workbox, or other matter some time since gone. The cupboard without a door contains an odd collection of crockery; a candlestick, with the extinguisher on the last snuff; no food visible, except a small crust on the shelf beside the teapot. Poor as this place is, it is *still a home;* and there are several thousands of these struggling homes in London. It is painful to think what may be the next stage of this young couple's poverty. He may, perhaps, not get another situation as porter, or any thing more profitable than the employment in which he is at present engaged. His family will probably increase. The various illnesses of his wife, and perhaps children, will cause his little property to be periodically parted with. The landlord will see when there is barely enough left to pay his arrear of rent, and the cost of bringing an execution. The goods will be seized, and conveyed away to a neighbouring broker, and then the still young couple and children are thrown houseless upon the world. The next refuge is the lodging-house, with all its horrors, vices, and temptations. We will not at present follow them.

Let us now seek another neighbourhood. Our readers have, doubtless, heard of *Agar-town* and district, near King's-cross Railway Station? This extensive and ill-built district ranges from the Railway Station, past the graveyards of St. Pancras and St. Giles's-in-the-fields, and continues in a northward direction until the extremity almost forms a line of intersection with Pratt-street, Camden-town.

The Agar-town estate is built on land leased from the dean and chapter of St. Paul's; and the mode of granting leases of church lands is not calculated to ensure improvement in building, good drainage, or other measures necessary for health. This large tract of land, the dimensions of which we cannot give (there being no correct map of the parish of St. Pancras), was granted on lease to a gentleman connected with the law, Mr. Agar, after whom the district was named. Mr. Agar died, leaving his property to some very young children. At that time the large residence near Pratt-street was in the fields, and no houses had been built on the estate. Indeed, so retired was this place, that within the last fifteen or sixteen years nightingales have been heard near a clump of trees at a short distance from Mr. Agar's house. The land was, however, soon let out into small strips, on leases for thirty years. No systematic plan of drainage was made: in fact, the houses were planted down very much in the same manner as the wooden huts and tents at the gold diggings: each man suited his means or fancy in the erection of an edifice on the land which for a few years was, on certain conditions, his own: we cannot wonder, therefore, that great oddness and economy were in many instances exhibited. The ditches, which had been originally used for draining the fields, were made to answer to a certain extent (indeed, as well as they could) the purpose of drains in carrying away the refuse of the occupants. The ditches in summer time became stagnant, and diseases of the worst description were spread over the district. At the time of the last visitation of the cholera, most of these ditches or uncovered drains were piped and covered over, after great exertion on the part of some of the more intelligent of the inhabitants. Considering this large district at present little better than waste land, for many of the leases must soon expire, and thinking the site available for useful purposes, we will give a more particular description.

The sketch of "Paradise-row" (p. 137) shows the clump of houses which so much belie their name, with part of the new railway station in the background. This is a neglected and unwholesome place, inhabited chiefly by costermongers. This row has long been the wonder of all visitors: in front of the dilapidated buildings are heaps of refuse: the houses are of small dimensions, some of the doors near here not being more than 5 feet 6 inches high: the smell of this place, particularly in hot weather, is dreadful, caused by the refuse of fish, &c.

Leaving this point, we progress towards the northmost of the houses nearer the St. Pancras-road, which are occupied by costermongers, nightmen, chimney-sweeps, and other very poor people, who pay four, five, and six shillings per week for these dirty and confined dwellings, of four small rooms each. Wooden and other sheds are fixed for donkeys, used to draw trucks,—indeed, several of these most useful animals to costermongers occupy part of the family residence: dogs and pigeons are here most plentiful, and many desperate attempts are made to cultivate plants.

We now reach the gas-works, which are of great extent; the huge iron tanks contrasting with the pigmy dwellings: the smoke and escaped gas from this factory pervades, according to the direction of the wind, every part of the adjoining district. On the right hand is the coal depôt of the Great Northern Railway: in front of this passes the London and Birmingham Canal, which runs through the Agar-town estate: about this part are "melters'" yards, a saw-mill, cinder heaps, and rows of houses such as we have spoken of, with large gardens in front of each: at the time of this visit the frost had partly dried the road, but a short time since it was soft mud for a depth of 2 feet. Some of the interiors of these cottages are deplorable, and inhabited, in addition to mechanics, costermongers, and worse characters, by persons of small income and in struggling circumstances. There are men, each with a family, and perhaps an income of 80*l.* or 100*l.* per year, who will be found to brave the risks and inconveniences of these places rather than run the risk of taking an expensive house and letting off part, or of taking part of one of the houses now so generally constructed in good thoroughfares, where his whole affairs would be exposed to the other inhabitants, not to mention the inconveniences which the construction of houses not intended for several families occasions. Some of the houses at the northern part of Agar-town let from 7*s.* to 8*s.* per week: some small cottages in the King's-road, leading from the workhouse, consisting of four rooms, a washhouse, and garden, rent as high as 28*l.*

This district, as we have already said, is ill occupied, and it is of great extent. The canal would afford the means of supplying coals at a cheap rate, and the vegetable and dead cattle market which will before long be open in connection with the Great Northern Railway Station will be also a facility, and we trust before long that the graveyards of St. Pancras and St. Giles's which adjoin, will, like that of St. Clement's Danes, be interfered with by Lord Palmerston.

Having said thus much, we will proceed to other parts, being anxious to give our readers an account of some of the neglected parts of London before entering into argument respecting a remedy.

What we maintain is this, that it is possible to house the poorer classes comfortably and healthfully at as little cost to themselves as they now pay, and at infinitely less cost to the community at large; and what we desire is to aid in bringing this about. As we have said again and again, and the sentence has been echoed and re-echoed far and wide,—homes are the manufactories of men,—*as* the home *so* what it sends forth.

A JANGLE ON BELLS ARCHITECTURAL. BY A LOVER OF DAY-DREAMS.

JANGLE THE FIRST.

THE VISION AND ITS PROMISES.

It may seem great cause of complaint to some of that unpleasant class of mankind who, delighting in the title of "matter-of-fact," covet for themselves no higher distinction, that any one should dare to force upon their notice anything so unsubstantial, and, to them, unsatisfactory, as a dream, and, still more, a day-dream! And yet, before your wrath arise, O lovers of the material and worshippers of reason, listen to me one moment, give me a patient hearing.

For why should you despise so utterly this pleasure of mine? Why should it give so great offence? Is our earth so perfect a Paradise that we may never wish to forget it? Is it no pleasure to escape awhile from our own dull selves into that pleasant dream-land, whose very indefiniteness and mysticism are delightful, and in whose regions we may enjoy so much happiness, and roam so unrestrainedly, till, suddenly recalled into our true being, we start to feel how cold and narrow it appears?

But the tree is known by its fruits; and so, kind reader, who hast already ventured thus far, bear with me a little, while I tell one of these my dreams; and if, indeed, there be nothing to be learned from its revelations, then, but not till then, pronounce your condemnation. So, trusting to your kindliness, I will proceed.

I have ever been, from earliest childhood, a lover of that sweet music, to which, perhaps, no English heart is wholly dead,—the music of our church bells. Sweet to me it is, and very pleasant at all times,—best when coming from the grey spire of some village church; but not to be despised even when heard in the crowded thoroughfare and bustling street. Good it is, too, to hear this music, whether it speak of joy and gladness, and its notes seem to participate in the brightness of some May morning; and very good, also, when that solemn sound is heard, testing that one more soul has passed to its last account,—reminding us, in the midst of our noisy life, of the certainty of coming death. And so I sat to listen to this pleasant sound when, not very long ago, the bells were proclaiming the departure of the old year, and the advent of the new with all its hopes and aspirations. Then as the sound was heard, now softly, and then louder, as the wind gently wafted it onwards, gradually did I sink into a maze of dreamy thought, all connected with the distant sound, which strangely seemed to mingle itself with my wild fancies, giving to them a transient air of realism; and so at last, roused something by a louder peal than before, my thoughts were attracted to the bells themselves; and I pictured to myself the cold, windy place in which they hung, contrasting the dreariness of that grim chamber with the joy and exultation, and all the glad ceremonies attending their baptism and first placing, in their now desolate abode; and I thought on what numerous and different occasions their sounds of joy and sorrow had been heard; and to what a different generation were they now proclaiming the coming year to that which first listened to their accents: how much, thought I, if they were gifted to observe and think, and then could tell us those their thoughts, how much might

we not learn from them,—witnesses of such great change,—dwellers on the earth so many years. And why, I thought, if the Greek not unworthily imagined that some bright spirit inhabited each sparkling brook or softly-flowing stream, why may not our imaginations in like manner revel? Why to us should anything be dead? And least of all, those things which, though we speak not to them, are yet continually addressing us? To those who think aright, each grey and moulder-ing stone possesses a spirit, and has a perfect being of its own. And shall not these bells, which preach to us so often, and so frequently, lift up our hearts in joy, or cast upon them the gentle shade of wholesome fear? Shall not they also possess a being and a spirit? Animate shall not they be—and not inanimate? If men, gross men, such as those who turn but a deaf ear to the words of these monitors, are yet supposed to possess soul and spirit, is it so great a stretch to our imagination to think that these, their unheeded teachers, are, at least, equally gifted? Let the world think as they please, this belief shall, indeed, be mine, and to it will I resolutely cling.

And then I had my reward; for slowly arising, perceived and then not perceived, appearing and disappearing, till at last they rested, fully dis-closed to me,—stood the Spirits of the Bells.

Eight they were; and, with their arms lovingly entwined, they stood linked together. Need I say that all were beautiful? Yet not beauty alone of form and feature, but that far higher and far stranger beauty given only by the pensiveness of calm thought,—a pensiveness which rested on every face as they stood before me, but deepest of all on one, who, far graver than the rest, kept her eyes fixed upon the earth, or at intervals, lifted them up into the height of heaven. And while I gazed, a soft murmur broke forth from them, resolving itself into distinct words at length, though I could not even then perceive which was the speaker; but the voice seemed to say,—"Not vain nor foolish is the idea, that we bells possess like yourselves soul and spirit, and so take cogni-zance of things which pass in all those places where we visit. Many generations have passed away from our watching, and yet none have gone without leaving some truth worthy of being treasured—some precious thing to place in the storehouse of wisdom; nor are we of those who niggardly refuse to impart that which they have gleaned. Not so with us: we desire to live not for ourselves, but for others; and our highest reward and greatest joy is to pro-mote their happiness and welfare.

Our life would indeed have been but ill spent, had we learned nothing during the many years we have now existed. We, who have so often summoned mortals to the house of prayer, —we, who have so often joined in the solemn ceremonies appointed for the dead,—should indeed possess thoughts grave and solemn,—we, who so often at other times have poured forth our strains of joy and thanksgiving,—we, who have so often seen changes great and won-derful,—generation after generation passing away, while we remain unchanged,—have as-suredly gained some knowledge and some wisdom: willingly, if you desire it, will we impart to you that which we have gleaned."

"Spirits!" I replied; "an offer far less tempting I would hail with joy; and if you will indeed become my instructors, patiently will I sit at your feet as a disciple, and in my inmost heart will treasure up your words; for I am weary of this world of feeble hope, and yet continual short-coming. The lamp of our life burns not for very long, and yet its flame is all too feeble, and soon quenched. Our path through life is narrow and perplexed, so that we stumble and are very frequently dismayed. Our warmest thoughts and most fervent desires are chilled with the cares of the world, and the troubles of our life; and with all this, what hope remains to us that we may make for our-selves a name, and so escape the darkness and the deadness of the tomb?"

"It is well," was the reply, "to bear in mind the shortness of life, and also to remember how fearfully it is curtailed by apathy and indo-lence: it is good to remember this, if it does but rouse you to energy and action, but far from good if it should induce you to fold your hands in the listlessness of despair, and so refrain from effort. And if you indeed feel those things which you have just mentioned, let them warn you diligently to pursue your appointed path, not alone for the sake of gain-ing to yourself a name, though that is not to be despised; but that by so doing you may fulfil your duty, and worthily accomplish those things to which you are called; thus becoming a bene-factor to your fellow men, and earning their praise and gratitude.

And if you rightly fulfil the mission of your art you cannot fail to do this: many a mighty building and many a pleasant structure has gained for its designer large tribute of praise and thankfulness, and has caused his name to be preserved, while countless others have for ever perished; and thus while the triumphs of the warrior and the wisdom of the statesman have been long forgotten, the memories of these men are still preserved in all their vigour and in all their freshness.

But now we have other work to perform, and may not linger here, for on this, the eve of the new year, many are waiting for our ac-counts and listening for our voices, and these we must not disappoint, for to-night our sound will float through the many dwellings of this city, bringing to the minds of those who listen thoughts manifold and strangely differing. Some there are who are lifted up in hope, and awakened to new life, as they think that in this coming year they will strive more worthily and exert themselves more manfully: some there are who, hearing our notes, will feel as if a heavy chain had dropped from off their limbs, and as if they had escaped from some dread prison-house; so full of affliction, so laden with calamity, has been to them the year which is now passing away so rapidly: some there are who, having ceased to hope, will but drearily think, as they listen, that once, long ago, time was a thing of import to them, and that now it is as nothing; and if they have not learned wisdom and re-ceived good from their severe distresses, and if their hearts, under the burden of their grief, are cold as the graves in which their hopes lie buried, then sad and very grievous is the lot of these. Others there are who will look in hope and cheerfulness to the coming year, thinking how soon the few faint ties that bind them to the earth may be severed, and how delightful and pleasant it will be to exchange this world of care for everlasting rest. Hard, indeed, are the hearts and barren are the souls of those who on this night do not find some new train of thought, deeper far than ordinary, awakened; but happily these are very few.

Now we must depart, but we will not be forgetful of our promise; and though it may not be possible that we shall again return in com-pany, yet we will delegate this office to one of our sisterhood, who shall accordingly, from time to time, visit you, to give you that counsel you desire."

Then, without another word, they were gone, all save one, who, lingering behind the rest, far more slowly took her departure, giving me ample time to note her form and features; and as she went a light burst from her head, and growing very bright, at length resolved itself into distinct letters, signifying, as I supposed, the name she bore; and that name was, PACIFERA.

The letters faded, and slowly the vision vanished; and so I rose from my chair, almost tempted to doubt its reality, and already inclined to unbelief; but when I drew aside the curtain, and looked out, and saw the bright moon calmly shining, and heard far off the distant bells pro-claiming that the new year was even then be-ginning, my unbelief all died away, and I waited in certain expectation for the fulfilment of the promise.

JANGLE THE SECOND.

UNITY.

"If," said Pacifera, in the first visit which, in accordance with her promise, she paid me; "if you would gain instruction from me, and from my sisters, there are many ways for your so doing, which do not of necessity involve our appearance to you, and which surely you may discern without our especially pointing them out to your notice. For instance, to what do we owe that power which we exercise so uni-versally over the hearts of mankind, but in the main to our unity, to the firm bond of our sisterhood? Disunite us the one from the other, and condemn us to pass a life of profitless solitude, assuredly you mortals would be as weary of the eternal repetition of the same one sound, as we ourselves should be of our dull existence. When, indeed, my elder sister, who keeps such constant watch over the souls of those around her, gives warning, deep and solemn, that one more has passed from out of this troubled world, she does deeply affect those who hear her, and has in these moments power enough at times to sober even the most gay and light-hearted; but men would soon weary of her one sad wail of woe; and the power which in these times she exercises is in great measure derived from contrast with those other glad and oft-repeated seasons, when in all love and in perfect harmony her notes are mingled with the rest, and we all combine to celebrate some glad event, or sound forth praises to the God of Heaven.

In our unity is indeed our strength: it is at these times that men exult in our sound, and all give us looks of thankfulness: remember this; and, whenever you hear our mingled notes, think that if unity is good for us, for you it is also good, and very good. One would think that the very pleasantness of fellowship would be inducement sufficient to make men dili-gently seek after it; but when to this pleasant feeling of love and brotherhood is added that fulness of profit which so constantly attends it, strange it is indeed that men do not more closely unite, and more firmly draw together the cords of fellowship. And you, architects, need not look very far to see the great value and utility of union: look at your cathedrals, those most precious of your art-inheritances, and ask, were they the work of an individual mind, and not rather the ripe fruit of many a deep thinker, and many a profound mind, yet all working to the same end, and all pursuing the same path. And must not you, in like manner, sow, would you similarly reap? To the true artist fame should be but a secondary consideration, compared with his love of his art; and did he, in singleness of soul, love the art which he practises, he would strive, not for his own glory, but for its advancement; careless of, and ready to sacrifice, his own fair fame, if the so doing would in any way advance its interests; and thus not only would he not refuse, but to him it would be delight, zealously to co-operate with others, working hand in hand with them, if his so doing would prove beneficial. And that it would be beneficial, and attended with excellent results, who can be foolish enough to doubt? Many a mighty tree has moved the heart of man, and affected it with thoughts of strange power, but the widely inclining forest has more of this influence: the brook peace-fully winding beneath the willow-trees has many lovers; but it is when the river has gathered many of these pleasant streams into its broad bosom and majestically flowing waters, that it possesses the more prevailing power, and gives the deepest impressions: nor must we expect to be awed into silence, and bowed with astonishment, when some one dark rock lifts its head from out of the green fields like a lonely watch-tower, but when in numerous company, link following link, the mountains are gathered together, with the clouds resting on their sides, and their countless pinnacles dying away into the distance.

Again, in proportion to the highness of the aim, will be generally the worthiness of the effort; and so as you forget yourselves and look far higher, to the honour of your art, or still better, to the welfare of mankind, will your efforts generally be crowned with most success, and your harvest be the richest and most abundant.

If men thought right, they would ever strive to do this: many generations have I seen pass away, and well I know how little of that for which they strove and spent their energies and their lives remains at this day unto us; and even that little, how often is it despised and but lightly esteemed! So that if men did but think how little they can do to leave some name and some memorial behind them; and then, how

unwise they are, and ill-spent is their life, and how unworthy of their immortality, if they perish from the earth, and leave no record of their existence; and also think how good and precious is such record, when it tells of exalted hopes and high imaginings, of fervent expectation, and of warm desire; to those who inherit this world after them, and shelter under the walls which they have built, or lift their hands in prayer under the roofs which they have vaulted, realizing in those gathered stones a lesson for themselves: did men, I say, think of these things, and bear them in their hearts continually, it is impossible to say what success might not be anticipated from such noble efforts as would ensue, and what glory might not crown the exalted desire to which these thoughts would give rise. But, alas! the cares of this world, and the deceitfulness of riches, often, far too often, check, blight, and eventually destroy these hopes in the hearts of many; and the seed, which, once opened into fair leaves, promised an abundance of fruit, and bade fair to become a pleasant tree under the shade of whose branches many might find refuge,—shrivelled, and black, and dead, stands, like the fabled upas, casting all around it the poison and the deadliness of its shade.

How many, while their hearts were young, laid down their heads in sleep, but to awaken to bright dreams of fame and glory, and of doing good Now, many of these, again recoiling in their battle with the world, ere yet one grey hair mingled with their darker locks, and while yet in the freshness and the strength of manhood, have sold their birthright for worse than pottage, and have bartered their fair inheritance for the dross of gold.

Not all at once, but, by little and little, insensibly stealing along, does this death come over the aspirations of men, and crumble the fabric of their hope into the dust: not in one day do they swerve from the right, nor in one hour withdraw their hand from the rudder; so that many, if they kept but diligent and earnest watch, could turn back the shadow by the way it came, and recover themselves ere yet sunk too deeply for extrication. But "excelsior" is a magic word, and can be pronounced but by few: it is not every hand that can bear that banner through the world, nor every one that can undauntedly turn his face from the warmth of home to the coldness of the "spectral glacier." If these, indeed, are few, and if at most they make but a little band, how needful for them that their hands and hearts should be firmly knit together, and if their banner bears upon one side "excelsior," should not the other speak of "unity?"

Oh! happy time, when all men shall be brothers, and when exhortation such as this shall be needless: and ye, O followers of art! who seek, in some measure, to be the teachers and instructors of your fellow-men—give to them this lesson—this worthy lesson of unity: teaching it them in that best of all ways, by the light of your own example.

Again: if you do but consider that the great bar to fellowship is indeed principally the mean vice of jealousy, envying the superior gift of another, instead of profiting by it; accusing others of theft, where there should only have been rejoicing at the honour conferred;—if you do but consider this, I say, and also bear in mind that men, judging trees by their fruit, will, in measure, think highly, or, on the contrary, despise an art according to the character of its professors; you will see to what undeserved and thorough contempt you are exposing your art by this your isolation; and so earning, not alone for yourselves, reproof and shame, but also involving your art in your own condemnation.

I see springing up around me, day by day, buildings innumerable, and yet I grieve to say that the majority betray no signs of thought or care; or when some attempt is made to mould their materials into forms of beauty, the effort is often so puerile, the success so poor, and the honesty so questionable, that I do indeed look with pride on the grey stones of my own walls: far dearer to me are they in their roughness and integrity than the painfully ornamented shells, run up year after year, in such strict accordance with the taste of the present day. But, oh architects! need this be? Need the dwellings of the present age be such, that they cast their shade not only over your streets, but over the minds of all who come within their influence; and give that dreariness which all men feel as they tread for miles those dull rows of never-ending houses, all so alike, and all so void of beauty? Need this be, I say, were all those among you, who see these things and mourn over these things, but firmly linked together, to extirpate this brooding monster of universal ugliness, and spread abroad the knowledge of the beautiful?

Or, again, would those gigantic deceits which reign now so universally, continue to survive, were those who daily and hourly mourn to see them spreading continually, but linked together to destroy them?

It is in vain that one warning voice is here and there lifted up against them, while the universal practice of so many who call themselves architects perpetuates their use; but were all those who see the folly, and the worse than folly, of these practices, to combine against them, who can predict how soon their efforts would be crowned with success, and that success complete and universal? To dispel ignorance is by far too arduous a task for any one or two to accomplish, when so many of their brethren are practically denying their teaching, and setting at naught their exhortations. If it is to be done, all lovers of truth must unite in its accomplishment: how willingly they ought to unite I will not now say.

Such, then, is one of the lessons which we can teach. Oh, think upon its value oftentimes! and especially whenever, mingling together in the quiet air, our pleasant notes are heard, so that they sound but as the voice of one. Oh, then listen to us; and as the notes die softly in the distance, and as you stop your breath to catch the last faint sound, remember that in union is strength, and that, disunited, our best efforts are comparatively in vain."

ARCHITECTURAL MATERIALISM.

As it seems to me, the doctrine of some writers of the present day inclines too much towards materialism in art. Too much stress is laid upon soundness and honesty of material, and too little upon artistic merit of design. Without doubt, satisfaction is greatly enhanced when we find what is excellent in itself as design further set off by corresponding worth, both of material and workmanship; just as we are better pleased with a handsome than with a coarse edition of a book, although its intrinsic literary value is just the same in either case. In like manner, as I humbly conceive, an architect's ideas neither acquire increased value from the employment of superior materials, nor are at all deteriorated by inferior ones, or by what it has now apparently become the fashion to consider as mere sham, and even to fulminate against as downright "lying," consequently highly culpable and immoral. Now, so far from sympathising with the double-refined ultra-morality of such gentry, I look upon both it and them with a good deal of suspicion; upon *it* as sheer cant, and upon them as ——, what you will gladly excuse me for not naming.

Unless I am very greatly mistaken, one of the most tasteful and happy of Sir C. Barry's productions, namely, the Travellers' Clubhouse, is merely brick composed over,—or, according to our Pharisaical architectural teachers, a mere sham, an utter falsehood, an abominable lie. Does that, however, at all detract from the merit of the design, or from the refined taste displayed in that little "architectural gem," which, although many a lesson has since been taken from it by others, as yet remains unrivalled for the *con amore* artistic study displayed in it? or will any one pretend to say that its architect would have been entitled to twice the praise now due to him, had the structure been of stone instead of what it now is? We know, indeed, very well, that

"A saint in crape is twice a saint in lawn;"

but we (I myself, at least) have yet to learn that a design, merely *quoad* design, is doubly admirable if executed in stone instead of stucco. On the contrary, I should look upon many structures with far greater complacency than I now do, had I the comfortable assurance of their being only veritable "lath and plaster," and doomed to disappear entirely in the course of a very few years. Most certainly there both have been and still are cases, and these not unfrequent ones, in which durability of material and solidity of construction excite, or at any rate ought to excite, far more of regret than satisfaction,—regret that permanency should be conferred upon bad taste, and worthy material squandered away upon worthless design.

Instead of stimulating, as it should do, to greater carefulness and study on the part of the architect, costliness and physical beauty of material appear to be not unfrequently substituted for them, as being nearly all-sufficient in themselves, and capable of making amends for his short-comings and errors. Hardly will any one deny, that what is merely modelled in small, in clay, may be, in point of its artistic value, incomparably superior to something else of its kind executed on a more imposing scale in marble or bronze. Wherefore, then, do we find such paramount importance attached to the mere vehicle of an architect's ideas? It is for him, as artist, to ennoble the cheapest, even what some turn up their noses at as *sham;* and to confer on them an æsthetic charm and value far surpassing the intrinsic market value of the material itself, be the latter ever so great.

Some have pushed their strict puritanical fancies so far as to condemn, not merely graining, but even the staining of woods, in order to impart to them greater depth and richness of hue than they naturally possess, and to bring out their veining more clearly. Yet, upon the same principle, they ought—which, however, they do not do—to protest against the use of French polish, or against the practice of dyeing stuffs. Some, again, are so over-strict and exquisitely scrupulous as to maintain that the more natural the imitation—the more complete the resemblance—the more skilful the execution—so much the worse and more unpardonable, the dishonesty being all the greater. According to them, bad graining or marbling is less reprehensible than good, because the former shows itself to be merely paint-work, whereas the other may be such a successful imitation as to pass for being the material itself which is so imitated; and, perhaps, for even a very choice specimen of it. Strange doctrine! Nor do those who would enforce it by inveighing in the outrageous manner they do against "shams" as if they were positive moral delinquencies, impress us with any high opinion of their own moral judgment. Their indignation quite overshoots the mark: by representing such harmless, even if tasteless, deceptions to be positively culpable, and to be placed in the same category with lying, cheating, and defrauding, they leave it to be inferred that the latter are scarcely more reprehensible or injurious to society than the former. One reviewer certainly overshot the mark egregiously when, in a fit of most virtuous wrath against shams and deceptions, he pronounced artificial flowers—poor innocents!—to be "detestable things;" one of the crimes he alleged against them being, that they do not droop, fade, and decay like real ones! *Risum teneatis?*

The "lies" which are so bitterly declaimed against by some,—whose morality seems to be of a cheap and tawdry Brummagem kind,—are at any rate exceedingly white ones; and in regard to them we may fairly say,—

Surely the pleasure is as great
In being cheated as to cheat.

If we are imposed upon, we are gratified; and even if we detect the deception, we may still be gratified by the skill shown in the imitation, by the beauty of colour and surface so produced, and by the charm of general design and *ensemble* to which the decoration so produced contributes. In my opinion, it is rather satisfactory than the contrary to know that it is possible to produce the same degree of beauty and ornateness with imitative and fictitious materials as with genuine and far more costly ones. That it is rarely done is not owing to the materials not being what they seem, but to the want of judgment in applying them. They themselves are quite passive; why then should they be made answerable for the bad taste and

NAPOLEON CIRCUS, PARIS.—DETAILS.





want of artistic feeling betrayed by those who make use of them?

One reason why decoration produced by cheap processes of execution, by fictitious materials, by graining, marbling, and cast ornaments, displeases is, that the display made with them is generally so ostentatious as to proclaim them at once to be "sham;" whereas, more sparingly, and more judiciously as well as economically employed, even "sham" could not be reproached with being at variance with good and indicative of bad taste. Most assuredly it is not so of necessity: if it is made to minister to vulgar tawdriness and paltry pomp, it is not because it is incapable of subserving in the same degree to elegance of design, and to the adequate expression of artistic feeling. There is a proverb which says that when the devil cannot swim he throws the blame upon the water; and those who rail so furiously at "shams," follow in the wake of that gentlemen. Instead of declaiming as they do against mock materials, why do not some of them show us artistic conceptions and ideas worthy of being realised in such as are both genuine and perdurable? Is it because they are conscious of lacking that sterling stuff within themselves which is capable of conferring artistic value upon the most ordinary substances, and of enhancing the worth of such as are intrinsically valuable, by making their brute matter the vehicle of mind?

By no means is it my intention or desire to put the substitutes for them upon a par with the real materials so counterfeited. In monumental structures,—be they public, or princely though private ones,—the latter alone should be employed; yet it is not therefore unwarrantable to make use of the others on less important occasions. It is, indeed, rather inconsistent first to encourage persons to cultivate a taste for architectural beauty and ornament, and then to tell them they must not attempt to gratify it if their means be at all limited. Beauty of design and skilfulness of execution together will ennoble even counterfeit. Deception it may be,—even hypocrisy,—yet assuredly of a very innocent and widely different sort from that which offends our moral sense. Of course much depends upon the materials being, although artificial, good of their kind, there being a very great difference of quality in similar ones. Skilfully and *conscientiously* wrought stucco is even superior, both in appearance and durability, to some of our building stone; wherefore, notwithstanding its greater first cost, it ultimately costs less than the "cheap and nasty" sort. As far as durability is concerned, "sham" will, in internal situations, last quite as long as the rest of the fabric. Scagliola columns will, perhaps, even outlive plaster ceilings and oak floors. We do not build our dwellings so as to endure for centuries; neither did our forefathers, which is, for us, rather a fortunate circumstance; since, had they done so, they would have inflicted upon us all the numerous inconveniences and discomforts attending the domestic architecture of a period of very imperfect civilization; which was such as to be scarcely suitable for imitation at the present day, even in point of taste. Genuine examples of it, no doubt, possess an inherent interest as undoubted relics, but surely bran-new Elizabethan houses, and similar pseudo-antiques, may be placed in the category of wholesale counterfeits and shams. At all events, it would be quite as justifiable to do so, as, like some overstrict persons, to class "grainings" and "marblings" with forgery and false coinage,—which is, by the bye, very much like confounding mere fiction with lying. Wherefore, too, should such hypercritics protest so strongly against the practices above referred to, on moral grounds, if they can adequately convict them upon æsthetic ones? Of counterfeits of the kind here in question, it will, perhaps, be said that we have no examples in former times; but then, is it not because the means of producing them had not been discovered or thought of?

In the Architectural Exhibition last year there were several specimens of both graining and marbling, which were no less admirable for excellence of artistic execution than for beauty of appearance. No doubt they might be very tastelessly applied, because such is not unfrequently the case with real as well as fictitious materials, as witness the so-much-be-wondered "Malachite doors," in the Crystal Palace. Wherever recourse is had to imitative materials, good taste will always recommend cautious sobriety, and carefully eschew that ostentatious display which is apt to provoke malicious inquiry as to cost, and as to the reality of substance. And one way of promoting good taste is to teach people to pay regard to actual æsthetic beauty, and not allow their judgment to be bribed by the worthiness of the material to tolerate vulgar and worthless design. Z.

THE NAPOLEON CIRCUS, PARIS.

Annexed are enlarged illustrations of the frieze shown in the elevation of the Napoleon Circus, given in a recent number, and the iron railing around the building. In our next we shall publish an elaborate view of the interior.

Fall of Moorfields Church, Sheffield.—In your notice last week of the fall of Moorfields Church, Sheffield—it is incorrect to state the contracts were carried out in accordance with the report of the Incorporated Society's Board of Architects,* the fact being, that the plans were returned three times for amendment, and were only sealed at last, subject to the terms of the report made to the society on the apprehended insecurity as shown in the construction. As the secretary of the Board of Architects, may I request you will be good enough to insert this contradiction.—Joseph Clarke.

* It was so stated in the Architect's communication, not by us.—Ed.

ELECTRICAL ILLUMINATION.

We have recently examined the inventions of Dr. Joseph Watson, at Wandsworth, in galvanic batteries and electric lamps, and are disposed to view them as important steps towards the attainment of cheap electrical illumination. By the introduction of new exciting agents, or electrolytes, the inventor claims to have made such galvanic arrangements as will yield a variety of colours so valuable, commercially, as to reduce the cost of the light to nothing, or something less. According to his own statement,—"By the use of a few substances introduced into our batteries, numbering in all not more than five, we are able to produce no less than 100 valuable pigments, transcending, by a great per-centage, the original value of the articles contributing towards their production. Our mode of producing these colours consists, not in any subsequent mixing of the products resulting from the working of our batteries, but has this advantage, that it is the result of the actual development of the electricity in the battery; and the materials employed aid extensively in the galvanic effect, since they act peculiarly in giving 'constancy,' from the want of which the best form of batteries at present in use are absolutely worthless for a practical purpose, such as lighting. Although it is scarcely possible to enter into the nature of the action occurring in our batteries without becoming tedious and unintelligible to the general reader, we will venture thus far to state that the 'constancy' of a battery can only be maintained by preserving the excited surfaces clean, and, what is still more important, the exciting fluid of its original strength and purity. To do this, the materials of decomposition must be removed from the galvanic circuit as soon as formed; and, as this can only be obtained by gravity, it is easy to see that all soluble products must always interfere with, and finally extinguish, any galvanic effect, in whatsoever form of battery produced. The resulting product must be insoluble; and in proportion to its insolubility and weight, so does the constancy and *power* increase."

Prussiate of potash gives, with iron, a blue colour, and chromate of potash with zinc a yellow; and mixing these salts in a battery of iron and zinc, the colour produced is a green.

A new electrode, and the use of an electro-magnet to regulate the changes in the current, so that the light can be burnt for any number of hours, are amongst the improvements claimed. That the complete regulation of the points has yet been attained we are not prepared to say: the light still flickers and varies to a certain extent; but if the battery prove commercially as valuable as Dr. Watson states, an important step forward has been made.

We may thus, too, obtain a cheap motive power.

THE NATIONAL COLLECTIONS IN THE TOWER.

A correspondent writes, in agreeable terms, to say that the armoury department at the Tower is regulated *exclusively* by the Board of Ordnance, and is not, as we have "asserted, dependant on the orders of the Constable." We were fully aware of this fact, but we felt, and still feel, that the Constable of the Tower, as the recognised chief authority, would have but to speak to obtain improved arrangements, and, beyond this, that he is *bound* to interfere, if he would discharge his duty properly. The public must have some individual to appeal to. What does a Government Board care for responsibility? The Master-General of the Ordnance ought, perhaps, to be looked to, but, of course, he knows nothing of what is done. He has a sort of representative in the armoury; a good public servant; but admittedly ignorant of antiquities, and possessing only the old armory knowledge required to arrange bayonets as stars, or form trophies with all sorts of arms in all sorts of ways, as you see them at Windsor and elsewhere.

In Mr. Hewitt's Guide-book, it is shown that the receipts, by 6d. a head, amounted, in 1839-40 (84,872 visitors), to 2,121*l.*; and in 1840-41 (95,231 visitors), to 2,380*l.*

We are unable at the moment to refer to later reports, but may safely assume that the receipts are now even greater. We doubt if they spend of this sum 500*l.* a year in purchases. The writer's own *cautious* account is, that "a large portion of the moneys arising from the exhibition of the Tower armories is applied by the Board of Ordnance to the purchase of additional suits of armour and rare specimens of ancient weapons, hitherto wanting to complete the chronological series; the *surplus being transmitted to the Paymaster-General, to be applied to the public service.*" What service is paid with this; and why should any of the amount be applied to any other purpose than the improvement, enlargement, and preservation of the national collection?

What we, on the part of the public, ask chiefly for is, the appointment of some properly qualified person to see that the money is wisely spent, that no opportunities for proper acquisition be lost, and that the collections be truthfully arranged and intelligently exhibited. There must also be a better understanding between the heads of departments than now exists; so that we may not find the public bidding against the public, as was the case at a sale of antiquities on the 10th inst. when the Tower and the British Museum, it is stated, were bidding against each other for a suit of Greek armour, from 50*l.* up to 250*l.*; some of the Museum people looking on all the time and wondering who it could be that was running up the public to such a figure!

BUILDING AND OTHER MEMS. IN IRELAND.

St. Patrick's Cathedral at Dublin has been undergoing a series of restorations, repairs, &c. At the east end the most important works have been effected: two flying buttresses and the two large arches of lady chapel or chapter-house have been completed. The walls of chapter-house have undergone restorations. Twenty-seven windows of Caen stone, with dressings, &c. are finished. It is said the completion of the roof will cost 1,000*l.* A vaulted fire-proof room for papers and muniments has been added. An additional building (in connection with Deanery schools), adapted for an infant-school, lecture-room, &c. has been erected. On the north side the ground has been lowered to a depth of 4 feet, and much damp saved thereby. Four new lancet-lights of Caen stone (and appropriate glazing, with zinc lattice-work for protection) have been added in this wall, which, we are told, excavations for sepulture, &c. rendered precarious. This is one of the many ill effects arising from intramural interment, which has been carried to a great extent in some parishes of Dublin, to the detriment of the inhabitants. The choir of the cathedral has been altered and modified. In the portion set apart for the congregation, the floor has been lowered in some parts fully 4 feet, and cushioned sittings have been added. The remaining half occupied by stalls of prebendaries, &c. with the pews in connection therewith, has been remodelled, the seats have been lowered, and the frontings are partly of ornamental carved oak. In the organ-loft, also, alterations have been effected. Mr. Kingsmill, builder.

All the great circular ribs of the Southern Hall, Dublin Exhibition building, are now fixed. The circular apse of the gallery is nearly completed, and the vertical frame-work of the front towards Merrion-square is in a permanent condition. The injuries done by the late storms were, by an additional force of hands and labour, speedily repaired. The iron lattice-work of the galleries is being fixed. A number of the metal columns for the support of the central girders of the nave have been erected in their places. One of the galleries is nearly ready for roofing. The interior fittings, we are informed, are being speedily completed. Additional buildings, we believe, for refreshment, retiring-rooms, &c. are in progress of erection at the extremity. The fulfilment of the works within the stipulated time is confidently spoken of.

Mr. Dargan has advanced 14,000*l.* in addition to the 26,000*l.* already given by him to the committee of the Great Dublin Industrial Exhibition, making a total of 40,000*l.* up to the present. It is estimated that ever yet it will require an additional sum of 10,000*l.* to complete the arrangements for opening satisfactorily, and we are given to understand that Mr. Dargan is prepared and willing to contribute this sum, or more if necessary. We need scarcely allude to the munificent spirit which prompted this undertaking and now exhibits the determination to effect its completion with credit to the country and without reference to pecuniary consideration.

Public works in connection with Lough Erne, for the prevention of periodical floods are talked of. We understand that the enlargement of the outlet at Beleek is contemplated. A petition to the Legislature is in course of signature. Lough Corrib has risen lately 8 feet over its usual level.

We are informed that the Commissioners of Public Works have ordered casts to be made (for the Dublin Industrial Exhibition) of the various architectural details in the well-known "Castle of the Lynches," one of the most striking relics of antiquity in the neighbourhood of Galway. Mr. P. Nugent has been declared the contractor for the execution of same under Mr. Roberts, C.E. A local contemporary states that the casts are to be presented to the Royal Irish Academy after the Exhibition. We trust this step of the Commissioners, which manifests an appreciation of architectural antiquities, will lead to the preservation from ruin and destruction of many ancient buildings and monuments under their control.

We mentioned some time since that an Athenæum is to be erected at Cork. A meeting has been held, at which Lord Viscount Bernard attended, to consider the question of purchasing an additional piece of ground for the purpose. The committee of the late National Exhibition have had a meeting also. The large archway from the Corn Exchange to the Fine Arts Hall, leaving a passage between the market and the exchange, has been built up. The Fine Arts Hall, which still contains Mr. Murphy's large organ, is standing, although much damaged by the late storms. The glass in lantern-light is completely destroyed, and we are told that during the gales this building was raised from the ground at intervals, and fell with a crash after a tremendous oscillation.

NEWS FROM MELBOURNE.

THE CHISHOLM EMIGRATION.

Having received a letter a short time ago from a friend in Melbourne, I am advised to forward you some extracts from it, and I have no doubt they will be interesting to a large portion of your readers. The writer is a young man who sailed from London 12th June, 1852, in the ship *Scindian*, chartered by the "Family Colonization Society," otherwise Mrs. Chisholm. He is well qualified to judge about much he speaks of, having been engaged here as clerk in a firm connected with the building trade. His letter is dated Nov. 15th, 1852. He says:—"We arrived here Oct. 11th, after a tedious and disagreeable voyage, but my two previous letters by homeward bounds will have prepared you for this, and after a good experience now, I have no hesitation in saying the Society under whose auspices we came out is a dead ——. Our captain, a good, kind-hearted man, and one who has been long engaged in the trade, says he has 'brought out to this colony soldiers, convicts, and free emigrants, all of whom were much better treated than we were.' Talk of 'grouping' and 'attention to morality during the voyage,'—there was no such thing. The emigrants elected me chaplain, and I read prayers regularly; being also referee, &c. in all sorts of disputes, having many disagreeable duties to perform. We lost four fellow-passengers during the voyage, and I am very thankful to God that no epidemic broke out; else, in our crowded state, it is fearful to contemplate the consequences. We paid 4s. to be conveyed to Cole's Wharf, about eight miles from where the ship lay, besides paying for our luggage. The crowd here was immense, and I had not been ashore half-an-hour when my carpet-bag was stolen, in which was my diary and many other things I intended sending you: the thief was caught, and is to be tried in two days, when my

property will be restored, no doubt. You know the Society says,—'Tents are provided for the emigrants upon landing, in which they can stay until they obtain employment.' The tents provided for us were of a wretched description, and only sufficient to hold the females and children by hard squeezing, the men keeping watch and ward outside on the ground or on their luggage. I was fortunate, for in about two hours after landing, who should come down to the tents but J. G. K——t, late of Limehouse, who has the Government barracks in hand, besides an appointment of 500*l.* per annum. He kindly offered me and Mrs. D. an empty room in barracks for a day or two until we could find lodgings, which we did on the third day after. We have got one small room, for which we pay 1*l.* per week, and our firewood and water cost us one more: no furniture. However, money is plentiful here: the gold to be seen in the shop-windows is immense. This place is like a fair every day, from the arrival of vessels, and men coming from the diggings. On Sunday, at chapel, I met J. A——s, formerly a clerk at Messrs. Cubitt's, who had come down from the diggings to purchase goods: he has been very successful, and says he hopes, by the middle of next summer, to have got enough to be able to come home again and retire. This town is well laid out, the streets being all at right angles and 80 feet wide from curb to curb; the houses being mostly built of a coarse soft granite, colour of Aberdeen: many are also built of brick, and there is likewise a coarse soft sandstone they use. Many quarries of the above sorts are now to let within a few miles of Melbourne, but there are no men to work them, the quarrymen being amongst the most successful gold diggers: there is also good brick-earth in the vicinity, but no brickmakers: they, too, are successful diggers: a machine which could be worked with horse power would pay splendidly. Bricks are now selling for 13*l.* per 1,000; countess slates, 16*l.*; duchess, 13*l.* and cannot long be had for that. Bricklayers and stone-wallers receive from 20s. to 25s. per day; masons, 30s.; carpenters, 25s.; painters and plasterers, 20s. and all other building trades in proportion: but very little is doing, all the buildings being at a stand for want of hands. Labourers on the roads get 10s. per day; wharf ditto, 15s.; draymen, 4*l.* per week and their rations. The New Gold Escort Company are giving their men 1*l.* per day and rations of a superior kind, a horse, of course, to ride on, also quarters, when in town, equal to officers', and many of the young men now arriving are joining it to gain experience, and very many more go off direct to the diggings. Everything is enormously dear here, and fortunes are being rapidly realized by many. The 4-lb. loaf is 2s. 6d.; the best joints of meat 4d. per lb. (considered very dear); tea, 2s.; sugar, 1s. 6d.; a glass of ale, 6d.; a bottle of soda water, 1s.; ditto lemonade, 10d.; ditto ginger beer, 9d. and not enough to be had at that. I have had several long walks in the country, but have no time in this to say much about it, except that in my excursions I have seen many traces of gold, and washed a little about four miles from Melbourne, but not enough to pay at present. I fell in with a district, about eleven miles from Melbourne, where there were thousands of tons of lead ore lying on the surface, some specimens of which I picked up and took to a friend of mine, a practical assayer, who, upon submitting it to the crucible, found it contained a large admixture of silver: what a splendid spec for an English company, or for our old neighbours P. and W. Co. of S. Lane.

I visited Geelong, paying 16s. per steamer, and found it a beautifully-situated town, and destined to be the principal port in this bay, as I have no doubt they will in time build docks there: it now contains 22,000 inhabitants, and is rapidly on the increase. I found things in much the same state as at Melbourne,—all public works stopped for want of labourers: there are many very pretty brick houses here,—bricks the same price as before stated, and all imported from Sydney and Hobart Town; so also of much joiners' work and dressed stone. They have an excellent sandstone, of yellowish colour, which hardens by exposure to the weather, but no quarries are being worked, all are to let: excellent brick-earth is also got in the neighbourhood, but no makers."

What follows is not interesting to the general reader or public: he concludes by stating that he does not intend going to the diggings; but is offered an engagement (which he says he will accept, to gain colonial experience) to look after a person's business who wishes to go for a two months' trip to the diggings: he is to have 5*l.* per week and his board. T. D.

HEATED AIR AS A MOTIVE POWER.

INSTITUTION OF CIVIL ENGINEERS.

On the 15th inst. a paper was read "On the Use of Heated Air as a Motive Power," by Mr. Benjamin Cheverton.

The author stated that Sir George Cayley had written on the subject in 1804 and 1807, and had subsequently built several engines, but that the Messrs. Stirling, of Scotland, produced the first really efficient engine working by means of heated air, in the year 1827; that in the same year Messrs. Parkinson and Crosley brought forward their Air Engine; that Mr. Ericsson, following more closely the arrangements and form of the ordinary steam-engine, constructed an air, or a "Caloric Engine" as it was termed, in 1833. Messrs. Stirling patented further improvements in 1840, and in 1845 their engine was described to and discussed at the Institution of Civil Engineers. In 1851, Mr. Ericsson brought forward his present form of engine;—and the principle acted upon in both these latter inventions, and announced as an important discovery in motive mechanics, was the reiterated use of the same caloric in the production of power. The mechanical means of realizing this idea were described, and it appeared that in both inventions they were substantially identical. The ejected hot air, by being brought into contact with an extensive metallic surface of wire gauze, was deprived of its heat, which the next moment was imparted to the incoming cold air, and thus the ultimate use of the furnace was only to supply the unavoidable waste of caloric by radiation.

This view of the subject was strongly contested, as being inconsistent with the best-established laws of nature, and as involving the idea of the possibility of the creation of power. It was argued, at some length, that the employment of caloric, as a motive agent, consisted in the development, from molecular forces, of a dynamic force, and as such, was directly amenable to the third law of motion—that of action and reaction being equal and opposite. It was contended that sensible caloric was not an indication of the presence, but of the abeyance of mechanical action; that these were interchangeably convertible quantities; and consequently, that a working force could appear only as heat disappeared—a conclusion entirely opposed to the assumed principle of the "caloric engine," that "caloric could be made to operate over and over again." It was admitted, however, that there was an apparent anomaly in the application of the law of action and reaction, when caloric was in question, in the fact, that its quantity was not less after than before the generation of steam power, if it were estimated conjointly by water and temperature. But it was explained, that a cause might have two classes of effects, and might require two distinct and different measures, to indicate its entire efficiency; that while caloric might remain intact, under the aspect adverted to, it lost by a declination in the intensity of its temperature, for which the equivalent gain was a dynamic force—a conclusion as adverse as before to the idea that such force could be acquired without cost.

It was contended, that the "caloric engine" was analagous to a non-expansive high-pressure steam-engine, which it would exceed in wastefulness of heat, if it were not provided with, what its inventor improperly termed, a "Regenerator;" the office of which, it was insisted, was simply to absorb the unutilized sensible caloric of the escaping air, which, as compared with steam, was in very large proportion to the efficient caloric; and to afford another opportunity for its being converted into force, thus compensating for the loss of expansive pressure. An explanation, founded on these considerations, was given of the continued action of the engine, for some time after the fire was withdrawn,—a fact which had been advanced in support of what was styled the untenable hypothesis of a "regenerator of force."

Although the mechanical effect of heat might be proved to be independent of the chemical condition, if not, also, of the physical constitution of bodies, it was admitted that economy of fuel, as being a distinct question from that of economising the caloric already in possession, was eminently a practical matter, only to be determined by experiment; and in this point of view it was explained in what manner the reception of heat, at a much higher temperature than steam, was greatly in favour of air as a motive agent; but, on the other hand, many adverse considerations were adduced, tending to show the impracticability of the system in its present form.

In conclusion, it was shown, that the "Caloric Engine" did not rest on true principles exclusively its own,—that its merits stood upon common ground with those of the steam-engine—and therefore that even should the performances of air be found superior to those of steam, it could not be anticipated that the former would immediately supersede the latter; but, as far as public statements could be relied on, the performances of the air-engine on board the "caloric ship," *Ericsson*, were very unfavourable to the pretensions of the promulgators of the plan.

The discussion was commenced by an exposition of the several systems adopted by Sir G. Cayley, Stirling, Parkinson, and Crosley and Ericsson, illustrating them by diagrams; whence it appeared, that the most preferable mode of heating the air was that of Sir G. Cayley, by directly traversing the incandescent fuel; that the great improvement recently introduced by Ericsson was the wire-gauge regenerator, which, however, formed an integral part of Stirling's original design. The practical difficulties of the immense dimensions of the heating-vessels and cylinders, and the rapid destruction of the metallic parts, were fully considered; and it was admitted, that although, at present, there did not appear to be any positive recorded results more advantageous than by the use of steam, it would be wrong to discourage the attempt to use heated air, and to overcome the inherent difficulties of the system.

Allusion was made to the appendix, to a Tract, published by Mr. A. Gordon,* wherein it was shown, that the volume of the gases into which 1 cubic foot of anthracite coal was decomposed under atmospheric pressure, was 219,250 cubic feet; that the volume of air required to sustain combustion, was 14,273 feet: the mechanical power developed was 473,000,000 lbs. raised 1 foot.

On the 22nd, the evening was devoted to a discussion on the paper, when the opinion most generally expressed was, that the engine could not be regarded as a successful innovation.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

This society met on Wednesday, the 23rd inst. at their rooms, 32, Sackville-street, Mr. T. J. Pettigrew, F.R.S. F.S.A. in the chair. Six new members were announced as elected.

The following presents were made to the society: From the author, "Essai sur le Pavage des Églises au Quinzième Siècle. Par L. Deschamps de Pas." From the author, "Report on Excavations made on the site of the Roman Castrum at Lymne in Kent in 1850. By C. R. Smith, F.S.A." From Mr. S. I. Tucker, Etching, by Francis Grose, of the "Connoisseurs." The original painting, also by Grose, is in Mr. Tucker's possession, and was exhibited. Mr. George Vere Irving read a very elaborate paper on the Roman Camps in the Upper Ward of Lanarkshire, which he illustrated with upwards of forty original drawings. This paper is of great length, and as some conversation took place at its finish between Messrs. Irving, Warne, Egan, and Duesbury, we may present our readers in our next with particulars of the arguments used by the author, and the description of the paper generally.

* In the *Builder*, vol. x. p. 423.

Mr. Lynch exhibited an engraved Etruscan Mirror, which formerly belonged to the Condi di Milano. Mr. Syer Cuming identified this as Etruscan or Celtic on account of the torque round the neck of the chief figure represented. Mr. Lynch also placed on the table a piece of needlework said to be by Mary Queen of Scots. Mr. S. I. Tucker exhibited four deeds of conveyance of a very early date: the most interesting is one of the time of King John, being a conveyance of two acres of land from John de Haverland to Remer de Burg for the consideration of twelve pence per annum. This document is witnessed by a great many persons. The seal attached, as well as the whole deed, are very perfect. It is the property of Mr. Hobler, of Bucklersbury.

THE HOARDED STATUE AT CHARING-CROSS.

At Charing-cross the passers-by are amazed at the towering hoard which has been reared there within a few days. Some imagine that preparations are being made to *gild* Royalty; others apprehend a design to blow up the figure (a catastrophe that once befell the figure of William III. in College-green); and again, some suppose that the ground is to be cleared for the colossal effigy at Hyde-park-corner!

A bill-sticker with pole and paste-can, eyeing the captivating breadth of surface, wistfully remarked,—"Wot a pity so fine a show-board should be lost—and in such a jolly good sitivation! Vy, I'd just give 'alf-a-crown a foot throughout for my hexpostion till Parlyment's up!"

Now, here is a good and economical suggestion. This lofty beacon or Rubric post—being 30 feet high (double the altitude of an *advertising van*) and about 80 feet round, giving 2,400 clear feet "*pour les grandes affiches*"—would pay exactly 300*l.* Besides, a proper distribution of colours in squares, according to Mr. Owen Jones's arrangement of the *primitives*, might give a pleasing effect. Of course, the whole superficies should be first lined out, and lettered, expressing the colour of each bill, as R. red, Y. yellow, B. blue, G. green, &c. &c.

It may be as well to state what has transpired—that the inclosure is erected for the purpose of taking a cast from the equestrian statue, for Sydenham.

"Castor."

IRON AND OTHER METALS.

Some improvements in the manufacture of sheet-iron have been patented by Mr. Bellford, of Holborn, on the part of a foreign correspondent, the object of which is to produce it of a quality resembling as nearly as possible the Russian sheet-iron; and this is effected by a combination of rolling and hammering processes. The peculiar features of the invention are stated to consist—1. In manufacturing sheet-iron by rolling or hammering the sheets when piled together in a heated state, and with powdered charcoal between the sheets composing the pile.—2. In hammering or rolling sheet-iron when laid up in piles composed of hot and cold sheets alternately, for the purpose of planishing the same.

An extension of Heath's patent improvement in steel has been granted to Mrs. Heath for seven years by the Privy Council. Should the question now at law be decided against the patent, however, its extension will of course fall to the ground.

A fine lode of argentiferous lead ore, it is said, has been discovered at Esgairgad-fach, in Wales, and two companies are now proceeding to work it. At Rhyd-talog another lode of lead ore has been found, and is also in the hands of a company. The price of lead has been on the rise of late, and is thought likely to continue further to advance in price.

Copper is also still advancing. So much as 140*l.* a ton is said to have been lately paid for it, and even 150*l.* is freely talked of as the next advance.

Pig-iron in the London market has recently receded to 55s. and 56s. At Llanelly, there has been a great fall in the value of pigs, which, it is believed, will now continue to go down for some time. In Scotland, too, prices have gradually given way, closing at 53s. 6d. cash for warrants, at which there were no buyers. The coming fall seems to be ominously foreshadowed in the following quotation from an extreme upholder of high prices. "In accordance with a peculiar feature of the trade, while prices are going up the greatest eagerness is exhibited on all hands to buy; but no sooner is the supposed culminating point attained, than an universal uproar is raised that it has gone too far, and the object of each and every one seems to be to lend a hand in beating it down again. Upon this policy many of our manufacturers and dealers have been shaping the course of their transactions, while among others a needless clamour has been raised, and persevering efforts made to effect a reduction, by absolutely refusing to do business with their old connections, and by abstaining from making purchases, even for daily use."

Wages are still rising, and are likely, we should fear, to produce additional embarrassment during the fall which is setting in. The desire for increased wages was naturally produced by the uncalled-for rise in prices, nevertheless, the authority just quoted adduces the rise in wages as a reason for sustaining these prices.

ARCHITECTS AND THEIR PUPILS.

Allow me a word as to a pupil's learning the art of an architect according to his indentures. I know an instance where a bold youth (who gave a premium) practically avows, without concealment, that this consists in carrying off a copy of the designs of his master of ten years' accumulation; and even vindicates his correctness in leaving by mistake a key in a private office box containing papers intended for his master's purposes only, having previously made use of them. Will you kindly say whether or not it is understood that a master in taking a pupil gives up his drawings to copy; whether entering private boxes and inspecting private papers be correct; and if not what course would be advisable to stop it? I know what was the *morality* of it when I was a pupil, but I never knew the *law*.

C. M. S.

*** A pupil has no *right* to do these things, and irrespective of this we are disposed to think few high-minded youths, who deserve to be architects, would act in such a matter contrary to their "master's" wishes, and *take* what he desired to *withhold*. Our own feeling we confess would be to say to those who were earnestly seeking information,—copy what you like,—make what use you can of any information we have gathered. We shall not be a thought the poorer, and if it make you a thought the richer, or otherwise prove serviceable to you in after-life, we shall rejoice. Mind, however, we suppose you a gentleman: our weaknesses are in your keeping, and we look for no betrayal. You are not here as a scoffing spy, or a mean pilferer. Let there be mutual confidence and trust, so that in after-times we may both refer with satisfaction to our connection.

"HIGH BRIDGE," PORTAGE, NEW YORK.

On the Buffalo and New York City Railway is an immense but slender-looking wooden bridge, like a tramway on a very high scaffolding, which spans the Genesee Valley at Portage, in Wyoming county, and forms the chief object of interest on that line. An illustration of this bridge, with some particulars in reference to its construction, are given in the *Canadian Journal and Record of the Canadian Institute*, from which we quote the following details:—

The bridge was designed by Mr. Silas Seymour, the chief engineer to the company. The piers on which the trestles rest are of ashlar masonry, of compact sandstone: their base is 75 feet by 15 feet: they are carried up with a slight batter to a height of 30 feet above the bed of the river, and coped with limestone blocks. Upon these are placed the timber trestles connected with each other by a system of braces and girders.

The trestles are 190 feet in height, from the top of the piers. At their base they are composed of twenty-one vertical posts, 14 inches by 14 inches, diminished in number to fifteen at the top; and in size to 12 inches by 12 inches. The lateral and longitudinal braces, and also the girders, are 6 inches by 12 inches. Each trestle or pier is said to be calculated to sustain a weight of 1,000 tons, in addition to its own.

The trusses resting on the top and connecting the several trestles or piers (which are 50 feet from centre to centre), are 14 feet in depth, and are composed of three framed girders with main counter and sway braces, in the usual manner. On the top of these trusses the track is laid.

The piers or trestles were commenced on the eastern bank, and as each trestle was completed the trusses were placed on them and the track laid; upon which a travelling crane was advanced, overreaching the space to the next trestle, and by means of which each stick of timber was let down to its place, until the whole of the next pier was completed, when the truss was placed and the crane advanced as before.

The whole length of the bridge is 800 feet, and each span (with the exception of that across a canal, which is 54 feet) is 50 feet. The arrangement of the structure is said to be such, that any particular piece can be taken out and replaced. Against fire, tanks of water are placed at convenient distances, and watchmen are employed day and night.

The total cost of the bridge was about 35,000*l.* and the quantity of material employed in its construction as follows:—

Masonry	9,200 cubic yards.
Timber	133,500 cubic feet.
Wrought-iron	49 tons.

It was estimated that the cost of a stone viaduct would have been about 250,000*l.* the interest of which, at 7 per cent. would renew the present structure every two years; and that the interest on the cost of a wrought-iron tubular bridge, of 500 feet span, with stone piers and suitable approaches, would renew it every third year. The masonry was commenced on 1st July, 1851, and the first locomotive passed over it on 14th August, 1852. The contractors were Messrs. Lauman, Rockafellow, and Moor, who were also the contractors for the whole line, and have long been connected with public works.

SIGHTS AND THE DRAMA.

Haymarket Theatre.—The purchase by Mr. Webster of "Not so Bad as We Seem," written by Sir E. B. Lytton for the "Guild of Literature," was an act of liberality and enterprize deserving public support. Mr. Webster gave for it no less than 500*l.* to the funds of the Guild, and, moreover, provided all the dresses for the Amateurs who played it in the first instances. It is inferior to the "Richelieu" or "Money" of the same author, but is, nevertheless, an amusing play, and should be seen by all the friends of the legitimate drama. Mr. Webster, Mr. Leigh Murray, Mr. Buckstone, and Mr. Keeley act admirably in it. The drunken scene at the end of the third act is immensely funny. The original scenery has been creditably reproduced by Messrs. O'Connor, Pitt, and Morris.

The Regent Gallery.—An elegant *salle*, under this title, has been built and opened in the Quadrant, Piccadilly, and here is now exhibited a historical diorama illustrative of the exploits of Napoleon Bonaparte. The views have been painted by Mr. Charles Marshall, and some clever scenic effects are introduced, but the views will scarcely stand the close inspection to which they are here subjected. Seen from a distance they would be more effective. Mr. Marshall's proper domain is the stage of the theatre. We do not desire, however, to disparage the exhibition, which, as a whole, is both instructive and pleasing.

Railway Matters.—It is said that 1,000 gas-lights will be required for the Great Northern Railway plant at Doncaster, which will annually consume about six million cubic feet of gas. The first-class carriages on this line are now warmed by metal tubes, filled with hot water, running along the bottom of the carriages.——The price of a through ticket from New Orleans to New York, *vid* Louisville and Cincinnati, is 28 dols.; distance, about 2,500 miles. In England, a "Parliamentary" third-class ticket for that distance would cost 10*l.* 10s.!

THE HOUSES OF THE LONDON POOR.



Fig. 3.—PARADISE-ROW, AGAR-TOWN.



Fig. 1.—COURT NEAR BERWICK-STREET.



Fig. 2.—INTERIOR OF HOUSE IN COURT.

EXPERIMENTS ON PORTLAND CEMENT.

WE have received the following particulars of experiments on Portland cement publicly made by Messrs. Aspdin, Ord, and Co. on their premises in Abingdon-street, Westminster; to which we willingly give insertion. In previous volumes of the *Builder* will be found the particulars of various other experiments on the same material.

I.—EXPERIMENTS ON COMPRESSION.

No.	Materials.	Size. In.	Thick.	Tons.	Results.
1	Neat cement	4 by 4	2 in.	30	Cracked, } Flaw in casting.
				50	Crushed, }
*2	Neat cement	4 by 3½	2	70	Crushed.
3	Neat cement	4 by 4	2	110	Crushed.
4	1 cement and 2 soft sand	4 by 4	3.	40	Cracked.
				60	Crushed.
5	1 cement and 2 sand	4 by 4	2½	30	Crushed.
6	1 cement and 3 sand	7 cube		110	Not affected.
7	1 cement and 3 coarse shingle	7 cube angles		110	Not affected.
8	1 cement and 3 sand	7 cube		110	Not affected.
9	1 cement and 3 sand	7 cube		110	Not affected.
10	1 cement and 4 sand	4 by 4	3½	40	Crushed.
11	1 cement and 6 shingle	4 by 4	3½	60	Broken.
12	1 felling stone	7 cube		110	Not affected.
13	1 felling stone	7 cube		55	Not a fair test, owing to a defective plate.
14	1 felling stone	4 by 4	2½	30	Cracked.
				40	Crushed.
15	1 cement and two stones	7 cube		70	One side flaked off, otherwise it remained unbroken, at 110 tons.
16	1 cement and 2 hard burnt brick	7 cube		110	Not affected.

* The blocks were all made between the 8th and 12th of January, 1853, and were shipped, per steamer, from Newcastle in the beginning of February.

II.—EXPERIMENTS ON COHESION.

Block of neat cement, 12 inches long, 4⅛ inches in thin part, 4 inches wide in shoulder, 2⅜ inches in middle, and 3 inches thick, was pulled in two by 18 cwt. Defect in casting,—as immediately after a block of same dimensions bore a weight of 31½ cwt. when one of the flanges sealed off. On replacing the block, it bore 34 cwt. when the apparatus gave way.

One cement and three sand, same dimensions, bore 20½ cwt.

Felling stone, 2½ inches square in centre, pulled asunder by 6¼ cwt.

III.—CROSS STRAIN.

Neat cement, 12 inches long, 3½ inches deep, 2½ inches wide, and 9½ inches in bearing, broke in the centre with a weight of 42 cwt. in the scales.

Felling stone, of same dimensions, broke with a weight of 10 cwt.

IV.—EXPERIMENTS ON ADHESIVE POWER.

Two blocks hard felling stone, each 13 inches long, 6 inches deep, 5½ inches wide, cemented together with pure cement, bore a suspended weight of 3 tons, when the lower stone gave way near the joint, but not *through* it, the joint remaining undamaged.

Nine fire bricks, jointed with neat cement, were pulled asunder with 23¾ cwt. in the scales, the centre brick giving away, the cement joints remaining perfect.

Six fire bricks, jointed with 1 cement and 1 sand, 11¾ inch bearing, broke at the second brick from the bearing point, with 5½ cwt. suspended from the extreme end.

Ten fire bricks, 1 cement and 2 sand, 1 foot 7½ inches projection, bore 3 cwt.

A fire brick beam, 14 inches wide, 9 inches deep, 6 feet 4 inches between the bearings, jointed in neat cement and weighted on a horizontal space of about 2 feet 4 inches in the centre, broke through the *bricks* in two places, with a weight of 20¾ cwt.

A fire brick beam, 14 inches wide, 10 inches deep, 5 feet 3 inches between the bearings, jointed in neat cement and weighted over a horizontal space of about 2 feet 4 inches in the centre, broke through the *bricks* in two places near the centre, with a weight of 30 cwt.

All the cement experimented on was mixed between the 8th and 12th January last.

PROVINCIAL NEWS.

Lincoln.—The Corn Exchange and Market Company here have resolved to issue specifications for erecting, by tender, a new roof to the Exchange, on the principle of the Grantham Exchange-hall; the exchange-room at the same time to be lengthened considerably, and the walls heightened in proportion. To enable the shareholders to carry out these improvements, a charge of 4s. per annum, or 2d. each market-day, will be established on the re-opening. This room will be finished according to the plans of Messrs. Langwish and Thompson.

Norwich—Owing to a heavy fall of snow, according to the *Norfolk Chronicle*, and to the defective state of the roof of the Guildhall, the city surveyor, Mr. Benest, considers the building to be in an unsafe condition. On the north side a bulging of the wall is visible.

Colchester.—A coloured plan of the exterior of the intended new church for the parish of St. Mary Magdalen, in this town, has been placed on view in High-street. The exterior is to be of flint, with stone dressing. The church will consist of nave, chancel, and transepts, with south porch. The length of nave and chancel is 84 feet. The transepts are 65 feet from north to south, and 20 feet wide inside. The width of the nave is 26 feet, and of the chancel 23 feet. There is a small gallery at the west end to accommodate seventy children, and in which will be placed the organ. An octagon bell-turret occupies the south-west angle. There will be 515 sittings, all in open benches of deal, stained and varnished. The roofs are open and stained. At the junction of the cross are four arches facing the cardinal points, and the ceiling of this portion is to be groined with moulded ribs at the intersections, and filled in with boarding. The chancel ceiling will be panelled, with moulded ribs. The site, given by the rector, is what was known as Magdalen-green. The cost of the edifice will be about 2,000*l.* and 500*l.* will be required as a repairing fund. A subscription has been commenced, and already amounts to nearly 1,000*l.* The design for the church is furnished by Mr. F. Barnes, of Ipswich, architect.

Burford.—It is now arranged to build a new church on Milton-heath. Mr. J. H. Langston, M.P. of Sarsden-house has promised five acres of land with a donation, and to draw the requisite materials gratuitously. A relative of his will also subscribe 1,000*l.* The 1st of March has been named for laying the foundation-stone.

Brighton.—A new Congregational Chapel is about to be erected on a site at the top of North-street. Six architects were invited to compete. The committee have selected a design in the second pointed style, by Messrs. J. James and R. Brown.

Marlborough.—The parish of Pershute, acting on the recommendation of Mr. Wyatt, have decided on rebuilding their church, except the tower. About 1,000*l.* are required for this purpose, of which the parish has consented to raise by rate 330*l.*

Bristol.—The carpenters here are out on strike, for 6d. a day of increase on their former wages, on the ground of a rise in the price of provisions. The masters have refused to comply with the demand of the men, who nevertheless persist in standing out.

Saltash.—A Plymouth paper says that the preliminaries of the suspension-bridge contract with Mr. C. J. Mare, M.P. are now nearly completed, and that the works will be commenced forthwith. Mr. Campbell, Mr. Mare's engineer, was to be at Saltash in course of a day or two, and the necessary appointment of officers, clerks, &c. was to be at once made.

Shuckburgh.—The church here has recently been partially restored at the sole expense of Sir Francis Shuckburgh, bart. The ceiling has been renewed and panelled, the chancel floor paved with encaustic tiles, a chancel screen erected, and the Shuckburgh Chapel separated from the chancel by a pair of open iron gates. The east and several other windows have been filled with stained glass. The restoration has been executed by Mr. Holland and Mr. Bonehill, of Warwick, and Mr. Watson, of Napton.

Liverpool.—The Baths Committee, says the *Liverpool Chronicle*, have given instructions to the engineer to prepare a plan for rebuilding the pier-head baths, with an engine of sufficient power to convey salt water to other baths in different parts of the town at any future time. The baths are said to be in so ricketty a state, that it would be better to renew than to repair them.——At a council meeting of the Free Public Library, Museum, and Botanic Gardens, it was stated as the committee's opinion, that a rate of 1d. in the pound will be required to meet the expenses of the library and museum and gardens for the present year, and the interest and redemption-fund of the money borrowed. There was also a recommendation to apply to the Lords of the Treasury for permission to borrow the sum necessary for the purchase and fitting up of the buildings in Duke-street. The proceedings were confirmed.

Southport.—From seventy to one hundred new houses, says the *Preston Chronicle*, are about being erected here, in addition to two hundred built in the last two years. There are only two houses to be let in the whole town, and engagements are made as soon as the foundations are laid, by new tenants applying. Workmen of all classes are in great demand. The contract has been made for the direct line to Manchester, *viâ* Wigan. A Welsh firm have contracted to make the line for 70,000*l.* the company finding the iron.

Seaham.—Preparations are now in progress for the immediate erection of a town-hall and mechanics' institute in this place; and the Marchioness of Londonderry has undertaken to provide for and conduct a bazaar in July next, the proceeds of which will be appropriated towards the erection. Mr. T. Oliver, jun. is the architect.——The first sod of the Londonderry, Seaham, and Sunderland Railway, another of those small rootlets which are destined to feed the great trunk and branch lines, was turned by the Marquis of Londonderry, at Seaham, on 8th inst. The line will be made without an Act of Parliament, being about six miles long, and having termini at Sunderland and Seaham. It is a private speculation on the part of the Marquis, and is estimated to cost about 40,000*l.*

Newcastle-upon-Tyne.—Since the council of this town announced their attention of awarding premiums for the two best designs calculated to improve St. Nicholas-square, by the erection of suitable buildings on the unoccupied ground on the north side, adjoining the Corn-market, including a music-hall, capable of holding several thousands of people, they have received thirty-two designs from competitors residing in various parts of the kingdom. The council have not yet decided on any of them. Many of the plans contemplate the raising of the Exchange—not only with the intention of improving it, but to suit the general appearance of the front, and ensure harmony to the whole design. The estimates of the several competitors vary from 8,000*l.* to 50,000*l.* according to plan and details, accommodation, and external splendour. The drawings have been open to the inspection of the council and their friends.

Greenock and Paisley.—The slaters of Greenock lately resolved unanimously to memorialize their employers for an advance of 4s. per week in their town wages, and of 6s. when employed in the country. The rate asked is 24s. in town, and 30s. in the country. The joiners also memoralized their employers for an advance of 6d. per day. The engineers and other trades are holding similar meetings for the same object. The joiners of Paisley struck work for an advance of 2s. per week. The whole of the employers, it is said, with the exception of one firm, have given in to the demand, and the men have returned to work: those, however, in the employ of the firm alluded to are still out.

Helensburgh.—The foundation-stone of the new place of worship for the Helensburgh Free Church congregation, was laid on Monday week. The church is in course of erection on the site

of the old building, the congregation worshipping at present in the ragged school-house. The new church will accommodate 500 worshippers.

Arbroath.—According to the local *Guide*, so many improvements have been made in the High-street of this town within the last ten years, that it would not be recognised by one who had only remembered it as it then stood. The *Guide* states that another addition to its changed features has just been made in shape of premises erected with a Caen stone front, from a design by Mr. Charles Edwards, of Dundee, architect. The mason-work was executed by Messrs. Maxwell, of Arbroath; joiner-work by Mr. Caird; and plumber-work by Mr. Keith. The ground floor is to form three large shops, and the upper portion, offices, &c. or a hotel. Eretions at Springfield-terrace are being proceeded with, as are planting and other improvements on the town common. The mason-work of the parsonage-house in connection with the new Episcopal Chapel is finished, and the place of worship itself is pretty far advanced, the chantry having attained its full height. The sculpture work is on an extensive scale, and progressing rapidly. At the springers of the arch of the main door, are two figures of flying lizards, o'ertopped by a monk on the one side, and a nun on the other.

Notices of Books.

"*Press Orders.*" Edited by Albert Smith. London: Kent and Co.

Under this title Mr. Albert Smith has reprinted on ninety-one pages the various articles which have appeared in the daily and weekly papers, on the abolition of the newspaper privileges in the theatres, with what good end in view, beyond keeping its editor's name before the public, we can scarcely guess. There was sound reason for a change in the system, but we have no sympathy with managers in the affair: they had planted a system, and manured and watered and cultivated it to the utmost of their ability; but finding it had grown larger than they expected, and not wanting its fruit just at the moment, they with drum and trumpet called on all whom they had led into rearing it to help them cut it down; and having succeeded, they raise a loud shout of triumph over their own giant slain. We speak as impartial lookers on, grieving by the way at the dirt which, here and there, has been thrown on the public press,—a press which is at once the ablest and the honestest the world has ever seen. In those cases where managers have, unasked, informed us that our "orders would be admitted," we have, on principle, so seldom availed ourselves of the privilege, excepting for the purpose of giving that publicity to novelties which managers desired, or for the convenience of persons actually connected with the paper, that we are not in any way affected by the change.

There are few persons who owe more to the kindly consideration of the press than Mr. Albert Smith, and he would have acted more wisely and shown a better feeling had he taken a more private mode of "throwing his stone at a great evil," than that which he adopted. We can scarcely suppose that his present entertainment, clever and varied as it is, would have attained the popularity which has attended it but for the friendly feeling of those who are connected with the periodical press towards one who had been a fellow labourer. A few days ago an erudite German, who has himself ascended the "monarch of mountains," speaking of his impressions in London, said, in our hearing, that nothing had astonished him more than the fact that "in this the intellectual capital of the world, crowds should be found, day after day and week after week, for so long a period, to listen to Mr. Smith's entertainment." We are very much disposed to believe that our German friend is not alone in his wonderment.

Revival of Vandalism at the National Gallery; a Reply to Letters in the Times. By Morris Moore. London: John Ollivier. 1853.

Mr. Morris Moore may have unimpeachable motives, and a good case, when he reproves the authorities at the National Gallery for "brick-batting" the pictures, but he is unquestionably an indiscreet advocate. A writer who says, at starting, he has "never yet seen, in any work by a living Academician, even the faintest indication of any one quality necessary in a work of art," can scarcely command the confidence of an unprejudiced reader.

The two Academicians known, he says, to have declared that the pictures recently cleaned at the National Gallery have been extensively injured by the operation, are Messrs. Hart and Lee. We understand Mr. Unwins is about to resign the keepership.

Miscellanea.

The Discoveries at Leominster.—In respect to the excavations and discovery of the foundations of the ancient Priory Church in a garden now belonging to the Union Workhouse, the *Hereford Times* states that a memorial has been addressed to the guardians, requesting that the excavations may be permanently exposed as a study, both for antiquaries and for the inhabitants in general. Communications have been received from a gentleman connected with the antiquarian department of the British Museum, and also from one of the secretaries of the Archæological Institute of England and Ireland, requesting that they may be furnished with every particular of the discoveries made, considering that they will throw light on the earlier portions of our English history.

Church-heating by Gas.—At Berlin, a successful experiment, it is reported, has just been made, to heat the newly-built St. Philip's Church by gas. The building contains 90,000 cubic feet of air, and a consumption of only 700 cubic feet of gas is said to have sufficed to raise the temperature 22 degrees Fahrenheit, for the whole duration of divine service.

The Working Classes and Patriotism.—The writer of a letter signed "A Working Man" (page 77, *ante*), appears to think he is greatly wronged by all those who are his superiors in station. He considers that the working classes in this country are all slaves,—that the Amalgamated Engineers who have *patriotically* given a lift to the French mechanics, were certainly right in so doing,—and states as a great grievance that those persons who possess the means of building dwellings, forming drainage, and supplying water to the houses of the working classes, have the power of making rules and laws for the protection of their capital so invested. He also appears to be labouring under the illusion, that since the dwellings of the class of persons to which the Amalgamated Engineers belonged were not kept clean and healthy *for* them, their allegiance to the English crown is annulled, and they may go and do just what they like, just where they like, and therefore may enlist in the service of a foreign power and fight against the country in which they were born, and to which nation they belong, and such act shall not be treasonable! Great jealousy exists among the working classes of all nations in reference to the employment of foreigners instead of native workmen, and this feeling certainly exists among the fickle French; and therefore those who are now tutoring the French into an equality with our engine manufacturers, may expect, as soon as their pupils have obtained all the knowledge they can out of them, on the first opportunity that offers, to be expelled from the country, as took place in 1848, with many English artizans.* In such case, or in case of war, we would inquire where these engineers would go for a refuge and a home? Without doubt they would directly claim protection of the British crown, and a right to seek asylum on our shores. In the mean time I will ask, as one of the prominent features of "A Working Man's" argument about severing the claim of a native country, is the want of drainage, supply of water, &c.—how they find these things abroad,—better or worse? With regard to "A Working Man's" definition of what a slave is, I would say that excepting those whom he mentions as slaves of vices, passions, &c. there are none in this country to whom the expression, according to his rendering, will apply. It is to the interest of the employed to work, as it is to the employer to engage his labour: this is the broad principle whatever are the details of the relation in which they stand to each other: if it were not so, the man would not work, and his employer does not possess power to compel him unjustly. Let "A Working Man" say whether his master can make him, by appeal to any court of law in this realm, do a day's work without a day's payment. If he can "A Working Man" is right in so applying the term: if he can not, I contend the interest of the employed is as great as the employer's, and is regarded as much by the laws of the land.—M. L.

* Engineers among the number, as we happen to know One poor fellow, we recollect, on his expulsion was obliged to leave his own children behind him because their mother, whom he had also to leave, was a French woman This, with tears in his eyes, he himself told us. Many such cases must have occurred.

Builders' Benevolent Institution.—On Tuesday last, a meeting of the friends and subscribers to this charity, which was founded, as our readers know, for granting pensions and giving relief to aged and decayed members of that profession, was held in the London Tavern, Bishopsgate-street, for the purpose of electing five pensioners upon its funds, and other business; Mr. George Bird, the treasurer, in the chair. The report showed that the amount of subscriptions and donations for the year ending the 24th June, 1852, amounted to 889*l.* 18s. 6d. and the directors had much pleasure in stating that they had added to their funded stock, the total amount standing in the names of the trustees being 3,250*l.* The ball recently held at Willis's Rooms, under the management of Mr. Joseph Bird, had been very successful. The report, after calling attention to the establishment of a branch society at Brighton, the results of which had proved very gratifying, concluded by expressing a confident hope that all who are interested in the welfare of this charity will not only continue their support, but will use their utmost endeavours to obtain additional subscriptions and donations, in order that the increasing demands on the funds of the institution might be met, and still further extended. The balance in hand at the banker's at the present time amounts to 450*l.* The chairman, in opening the proceedings, stated that he had been requested by Mr. Peto, M.P. who was unavoidably absent, to take the chair. They had met on this occasion to elect five pensioners, three male and two female, from a list of sixteen candidates, and he hoped that as so many would be disappointed they would not relax in their endeavours to increase the funds.

Oxford Architectural Society.—At a meeting of this society held on Wednesday, 16th inst. Mr. Street read a paper upon Domestic Architecture, in which, after commenting upon the want of success exhibited in our modern attempts at its revival, as compared with those for the revival of Ecclesiastical Architecture, he proceeded to inquire how far this was the result of unreality on the part of its revivers, or of the incompatibility of the style with modern wants. He argued that the great rule to be observed in all architectural work was that of reality in every arrangement and every detail, and then showed how egregiously unreal all imitations or adaptations of Classic Architecture were, and how almost equally unreal were the modern attempts at revived Mediæval Domestic Architecture. The faults of the latter were, among others, the disuse of the pointed arch in construction, the attempt to obtain irregularity of outline and arrangement where neither is necessary, and the constant habit of perpetuating the worst features of modern house-builders in internal decorations and furniture. He proved by many examples that in the thirteenth and fourteenth centuries architects used pointed arches, traccried windows, open roofs, and the like, as well in domestic as in ecclesiastical work. Upon the question of adaptation to modern wants, he went into detail, showing that the use of sash-windows, for instance, did not necessarily involve any departure from proper principles; and that so far from this, if properly treated, they became rather ornamental than the contrary; and he suggested some method for their arrangement, protesting, at the same time, against their introduction in a sham way, as is commonly the case in buildings in Oxford. He then showed how far some departure was necessary from old precedents in order to enable Pointed architecture to meet all the requirements of the present day; and observed, that unless it did so its existence could never affect people in general to the extent to which such an art ought.

Cambridge Antiquarian Society.—On 14th instant,—the Rev. J. Fenwick, of Corpus Christi College, in the chair,—amongst other presents to the society were a collection of forty-two casts from seals in his collection, by Mr. G. A. Lowndes, B.A. of Trinity College, made by Mr. Ready, who exhibited a curious panel representing the Temptation of St. Anthony. Mr. C. H. Cooper communicated some notes concerning two stone coffins found on the side of the Castle-hill, at Cambridge, in 1785, obtained from the Kerrich manuscripts. Mr. C. H. Newmarch, of Corpus Christi College, made a communication to show the cause of the floors of certain Roman houses at Cirencester being double, and the continuance of the fresco painting on the walls to the lower floor.

Frightful Death from Molten Lead.—James Grange, a plumber, while lately in the employ of Messrs. Saunders and Woolcox, builders, Guildford-street, was engaged in melting nine pounds of lead in a ladle, when in lifting a ladle of water off the furnace, a quantity of it fell into the lead, which instantly spirted over his face and body, and frightfully scalded him about the face, head, and neck. The lead ran into the eyes, and produced two moulds of the exact shape of his eye. Erysipelas set in, which shortly afterwards terminated fatally. Verdict,—"Accidental death."

THE NEW "SMITHFIELD" AT COPENHAGEN FIELDS.—We regret to observe from a report to the Common Council by the Markets Committee, and which the council have adopted, that it is designed to proceed at the earliest possible period with the formation of this market, and that for this purpose even a tenant-right until next Michaelmas twelvemonth for brick-making in the fields, has been purchased from Mr. Pocock for 1,000*l*. Half an acre of ground suitable for an opening into the Caledonian-road, has also been bought for 826*l*. and other proceedings taken, and the council has sent back the report to the committee to be carried into execution.

ELECTRO-TELEGRAPHIC.—A Paris correspondent, Dr. J. B. Mitchell, who happened to observe a recent paragraph in the Paris papers translated from the *Builder*; and another correspondent, Mr. W. Purkiss, simultaneously suggest that the wires of telegraphs carried along the streets might be run along the crown of the common sewers, suspended by galvanized wall hooks, and a trifle out of the headway. The suggestion reminds us of one long since proposed in our columns, for the concentration of gas and water-pipes in a subway like a sewer, so that access might at all times be had for repair or inspection. The ramification of telegraph wires through the streets, of course, adds considerably to the grievance of street breaking and obstruction, and increases the necessity for some such line of subway as that suggested. Were water, gas, and telegraph companies to unite in the expense of forming subways, the cost would in a few years be defrayed by the saving of expense in reiterated street-trenching, and re-paving. —— The half-yearly meeting of the Electric Telegraph Company was held on Wednesday in last week, in Lothbury, Mr. J. L. Ricardo, M.P. in the chair. The secretary, Mr. J. S. Fourdrinier, read the balance-sheet. The capital account to 31st December showed that the shares amounted to 330,000*l*. the debenture-fund to 64,000*l*. liabilities to 44,985*l*. and reserve-fund to 73,403*l*.—total, 512,388*l*.; and that 479,993*l*. had been expended, leaving a balance of 32,395*l*. The revenue account gave the receipts of messages, &c. at 40,087*l*. leaving a balance over the expenditure of 13,855*l*. After payment of the dividend of 6½ per cent. the balance would leave a sum of 3,130*l*. to be carried to the reserved fund. The report was adopted and the dividend declared.

FALL OF ROTHERHAM MECHANICS' INSTITUTE.—Having noticed in the *Builder* of the 5th ult. an account of the late accident at the building now in course of erection for the above institution, and the Building Committee being blamed, I think it only fair towards them to state (as I did in my examination by the Coroner at the inquest) that I did not apply for a clerk of the works at the commencement of the building, nor until I reported upon the works in November, when, in consequence of the continued wetness of the season, I suggested that one should be employed until the roof was put on.—W. BLACKMOOR, Architect

THE METROPOLITAN CENTRAL RAILWAY TERMINUS.—At a Court of Common Council last week, the City Improvements Committee brought up their report on this scheme, recommending the corporation not only not to sanction the measure, but to empower the committee to oppose it in Parliament if the Bill of the proposed company proceeds. A discussion ensued, and the report was at length ordered to be printed, and its consideration adjourned by a majority of twenty votes.

BANK COMPETITION, DUBLIN.—In the competition, just concluded, for the best plans for a new bank to be erected in Dublin, the first and second premiums have been awarded respectively to Messrs. Carmichael and R. Johnston.

SEWER ACCIDENT.—On Tuesday in last week, in Budge-row, Cannon-street, City, while a number of men were engaged in forming a new sewer, a sudden fall of earth took place, which completely embedded one of the workmen. The other hands entered the sewer from Queen-street, and by digging away the rubbish succeeded in extricating the unfortunate man still alive, but much crushed, though no bones were broken.

AMSTERDAM.—A new theatre is to be built at Amsterdam by the municipality at an estimated expense of 32,000*l*. It is to be of gigantic proportions, and surrounded by covered bazaars.

MILDEW ON WALLS.—A correspondent inquired some time ago how to prevent this. A writer in the *Journal of the Society of Arts*, says, by washing the wall with a solution of corrosive sublimate, say 3 ounces to a gallon of water every six or eight months, the mildew will be prevented forming.

"ALLOWAY'S HAUNTED KIRK."—We rather regret to hear that the old churchyard of Alloway, the scene of Burn's "Tam O'Shanter," has been levelled and all the gravestones removed.

COPYHOLD ENFRANCHISEMENT SOCIETY.—We have received the prospectus of a society for this purpose. It appears that the number of enfranchisements and commutations, 1841 to 1851, has been—Clerical, 149; Collegiate, 131; Lay, 121;—Total, 401. The payments in full, 88,231*l*. 12s. In the shape of rent-charges, 2,362*l*. 19s. 7d. The acreage, 896a. 1r. 8p.

FORM OF CHIMNEYS.—Some erroneous views, as I think, were stated at a late meeting of a society of architects; and I agree with one who said, chimney-pots should be spread out in a funnel shape, so as effectually to prevent the wind from blowing down the chimney. But the same gentleman seemed entirely to have forgotten the true purpose of the lily-shaped opening, when he gave it as his deliberate opinion, that, because that form was good at the top, inasmuch as *it gave room for the heated air to expand* as well as prevented all down-draught—*therefore*, the best flue theoretically was funnel-shaped, gradually expanding from the fireplace to the top. And this additional reason which he gave in support of his theory is clearly wrong. The place at which the air is most heated, and therefore, most expanded, is at the fire: as it ascends, it cools and becomes reduced in volume, the heat being conducted away by the walls of the chimney. Now the higher the column of heated air in the chimney, the greater will be the pressure of the atmosphere at the bottom, and consequently the better the draught. But since the air contracts as it ascends, so also should the flue, in order to prevent the cooling air from spreading laterally, and thus diminishing its ascending momentum. I would humbly suggest, then, that the best form of flue theoretically is (exactly the reverse of that proposed above) an inverted funnel, widest at the base, and tapering upwards in a concave curve—the form of which must depend on the particular cooling influences to which each chimney is exposed. It may not be found necessary in practice to attend to this fact in the case of long chimneys, for then the column of light air is so high as to ensure a good draught, but I should think it would be of considerable importance when the chimney is short and difficult to manage. If we had no wind, the form of chimney described above would be complete; but we must have recourse to the spreading top as an expedient to prevent a blow down. It is rather a necessary evil than a positive good, for it acts like a small valley to collect the rain and snow, and drain them into the chimney. This objection might, however, to a great extent, be obviated by providing a groove at the bottom of the cap, from which the water might be spouted to the outside through proper openings.—STUDENS.

TENDERS

For building the South Metropolitan Schools at Sutton, Surrey. Mr. Edwin Nash, architect. Quantities supplied by Messrs. Balham and Gritten.

Myers	£22,230
Kolk	20,968
Piper	20,900
Locke and Nesham	20,725
Wm. Hill	20,717

For the New Medical Benevolent College, Epsom. Mr. E. N. Clifton, architect. The quantities furnished by Messrs. Eppy and Lansdowne.

Norris	£29,770
Hicks	29 200
Saunders and Woolcott	27,800
Lucas and Brothers	27,000
Locke and Nesham	26,890
Jay	25,890
Higgs	25,252
Perry	24,750
Myers	24,725
Glenn	22,903
Pauling	21,890

For building a Chapel at Baldock, Herts. Quantities provided. Mr. J. Elliott, London, architect.

Cooper	£1,298
Glasscock	1,203
Rowland and Evans	1,095
Cardwell	1,000
Parker	970
Turner and Sons	939
Rudkin	929
Lumm	899
Gilder	861
Baker and Sons, near Lincoln	820

Delivered for National Schools and Residence, Sandown, Isle of Wight. Mr. Woodman, architect.

G. Pelly	£1,167	10	0
W. Attrill	1,140	0	0
— Damp	1,078	6	0
W. Jolliffe	1,060	0	0
B. Cooper	869	18	3

TO CORRESPONDENTS.

"W. W." (we do not thoroughly comprehend the position of matters), "L. B.," "Sir R. L." "T. P." "C. W." "A. B." (we cannot interfere in private disputes), "Paulatim," "F. W. S." "J. C." "T." (under our mark), "F. F." (ditto), "W. L. D." (mentioned some time ago), "R. W." "W. H. S." "O. H." "Country Parson," "J. E." "J. L. D." "J. L." "J. J." Birmingham (we cannot advise), "One Interested" (could see plan, we suppose, at Office of Works, Whitehall), "W. M." (will appear), "J. H. C." "*Credat Judæus*" (we do believe, at any rate), "H. G." "J. P. H." "T. P." (see last number), "Mr. L." "T. J."

ADVERTISEMENTS.

BUILDERS' BENEVOLENT INSTITUTION.—The FIFTH ELECTION of PENSIONERS (Three Males and Two Females) took place at the LONDON TAVERN, BISHOPSGATE-STREET, on TUESDAY, FEBRUARY 22, 1853. Mr. GEORGE BIRD, Treasurer, in the Chair.

The successful candidates were—

John Wilkins Brighton	1,535	Ann Stevens	1,166
James Bonster	1,491	Elizabeth Wood	975
Joseph Purnell	1,262		

The others were—

Robert Manning	441	Ann Fagan	344
William Williams	50	Sarah Larner	349
John Barlow Irwin	38	Ann Roser (Brighton)	328
Charlotte Tippett	758	Jane Saunders	221
Caroline Hillstead	401	Sarah Goodliffe	183
Mary Smith	421		

Feb. 24, 1853. A. G. HARRIS, Secretary.

N.B.—The Offices of the Institution will be removed at Lady-day next, from No. 476, New Oxford-street, to No. 19, Southampton-street, Bloomsbury-square.

THE ARCHITECTS', BUILDERS', and CIVIL ENGINEERS' DRAWING CLASSES, conducted by THOMAS J. HILL, Architect. Offices, 12, Helmet-row, Old-street.

Morning Classes ..... 10 till 4.
Evening Classes ..... 7 till 10.
Saturdays excepted.

The architectural department comprises plans, elevations, and sections in every style both ecclesiastical and domestic. Working drawings of every description. Geometry, perspective, and ornamental drawing as applied to cabinet makers, upholsterers, and decorators.

The civil engineering department comprises all descriptions of bridges, tunnels, aqueducts, &c

A special class for architectural colouring three times a week. Taking out quantities and abstracting every Tuesday.

A large collection of models as well as an extensive architectural library are at the use of the students.

Terms to be had on application at the offices.

CHURCH DECORATIONS.—Altar and Communion Cloths, General Church Furniture, Robes, &c. at very reduced prices.

An Illustrated Priced Catalogue may be had by application of the Clergy or Churchwardens.

HARRISON, Church Decorator and Robe Maker, 62, Chancery-land. Contracts for Church Cushions, &c.

PAPER-HANGINGS, by E. T. ARCHER'S patented Machine, Blocks, Cylinders, and Artistical Labour, at his Manufactory for all kinds of papers adapted for internal decorations. PANELLED DECORATIONS fitted up on the walls of the extensive Show Rooms, in every known style, and for all purposes, by artists of known merit.

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PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 23, Great Portland street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers	from 9d. per yard.
Painted Marble, Granite, and Oak Papers	from 9d. do.
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PLANS, ELEVATIONS, DRAWINGS of MACHINERY, &c. lithographed or engraved.

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Contracts for the supply of three establishments.

WANTED to HIRE, for about four months, a good SECOND-HAND THEODOLITE: every care will be taken of it, and security given for its safe return.—Address to A. T., Mr. Charles Gamon's, Solicitor, Norfolk-street, Manchester

TO ALL ENGAGED IN BUILDING.

J. BAUGHAN, SASH and DOOR MAKER to the Trade, at the lowest possible prices, 6, Great Ormond-street, Queen-square, and 43, 44, Kenton street, Brunswick square. A large quantity of Doors and Sashes in stock. Goods securely packed and forwarded to all parts of the country, and for exportation. By inclosing a postage-stamp a full list of prices will be returned.

TO ARCHITECTS, BUILDERS, &c. &c.

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DISSOLUTION of PARTNERSHIP.—HENRY PASK (late Johnson and Pask), Baker-street, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.





N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET, CHANCERY-LANE.

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Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises as above, where they have greater facilities for business, including Steam Machinery and are enabled to furnish every description of Joiners Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.





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AN Architect and Surveyor in the country requires a competent ASSISTANT both for office and general out-door engagements, a steady, useful man, about 35 years of age and upwards, may anticipate a permanent situation. Address, giving full particulars, terms, age, &c. &c. E. F. *Mercury* Office, Hertford.

TO PARENTS AND GUARDIANS.

THE ENGINEER and SURVEYOR of a rapidly-increasing Borough in the Midland Counties, consisting of 50,000 inhabitants, where a Board of Health is established, is in want of an ARTICLED PUPIL, with a moderate premium.—An early application to Messrs. COLLINSON and CLARKE, Stationers, Mansfield, near Nottingham, will be attended to

APPRENTICE WANTED.—A respectable Youth, who has a taste for drawing, is Wanted as an APPRENTICE to the CARVING and GILDING Business. A premium required.—Apply at No. 35, Thayer-street, Manchester-square

APPRENTICE.—An opportunity offers of APPRENTICING a YOUTH to the WRITING, IMITATIONS of WOODS and MARBLES, DECORATIVE PAINTING, &c. He will have an opportunity of acquiring the whole of the decorative branches, including the Writing and Embossing, and Glass, &c.—Address, J. W. PACEY, Writer and Grainer to the Trade, &c. 14, Prince's-terrace, Caledonian-road, Islington.

WANTED, an ARCHITECTURAL DRAUGHTSMAN, who understands perspective, can colour elevations, and make fair drawings from rough sketches.—Address, stating terms, to be sent to A. B. Mr. Furber's, Above Bar, Southampton.

WANTED, by a Plumber and Glazier, a steady active MAN, capable of taking the management of the Painting department; he must be a good workman as a painter and paperhanger. The situation is in the country, and would be permanent to a suitable person.—Address, stating qualifications and wages, to A. B. care of Mr. Rowe, Bookseller, Westgate, Mansfield, Notts.—Feb. 16, 1853.

TO SURVEYORS AND ENGINEERING ASSISTANTS.

WANTED, a few competent SURVEYORS and LEVELLERS; those accustomed to town surveying preferred. They must find their own theodolites and levels.—Address, stating terms and reference, to ALPHA, Mr. Charles H. Lewis, Bookseller, 11, Market-street, Manchester.

TO BUILDERS, CONTRACTORS, AND OTHERS.

WANTED, by a Carpenter and Joiner, a SITUATION, so as to occasionally assist in an Office. Understands the preparing of drawings, and the routine of an office. No objection to the country.—Address, ALPHA, National Coffee-house, 1, Little Turnstile, Holborn.

WANTED, by a Gentleman, highly connected, and a first-rate Architectural Draughtsman, a SITUATION as Clerk or Principal in an Office, or as Clerk of Works.—Well versed with Gothic, Elizabethan, and Italian Perspectives. &c. and the usual duties of an architect. First-rate references given.—Address, A. B. 38, Tavistock-place, Tavistock-square.

WANTED, a SITUATION as FOREMAN, or CLERK of WORKS, in town or country, by a Young Man, age 25, by trade a carpenter, and who has had the care of a business in the country for several years. Can take out quantities, and measure work on hand, and is willing to make himself generally useful.—Address to A. B. 23, Bartlett's-buildings, Holborn, London.

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WANTED, a SITUATION, by the Advertiser, who is a practical man, good surveyor and draughtsman, and used to conducting work both for private speculation and contracts.—For references and particulars, apply to B. B. Mr. Reader's, Hemingford-place, Barnsbury-park, Islington.

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WANTED, a permanent SITUATION as PLUMBER, GLAZIER, and PAINTER. Apply to J. B. R. 27, Brook-street, New-road, Fitzroy-square, London.

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TO ARCHITECTS AND SURVEYORS.

A YOUNG MAN, aged 22, having just completed his articles with a highly respectable firm in the country, wishes to engage himself in an architect's or architect and surveyor's office in London. He is a neat draughtsman and ornamental writer. Highly respectable references can be given. Moderate salary required. Letters addressed to D. A. R. 8, Windsor-terrace, Vauxhall road, will be forwarded

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THE Advertiser, who is thoroughly conversant with Ecclesiastical and Italian Architecture, preparing Finished, Contract, and Working Drawings, Specifications, and general management of business, is desirous of an ENGAGEMENT.—Address, N. F. 18, Bridge-street, Westminster.

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VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRABBS, Belvedere-road, where terms may be obtained.

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A liberal discount to the Trade.

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THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern

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Manufacturers of

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The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride is made in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively, is understood. And the attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of proving its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in their name, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 80 to 100, that is, 80lbs. of Pattinson's Patent will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work internally and Painting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

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LIVERPOOL	Mr. Richd. Cooke, 7, Rise-lane.
MANCHESTER	Messrs. Johnson and McGowan.
LEEDS	Mr. James Douglas.
SUNDERLAND	Messrs. T. and E. G. Jepson.
DEVONSHIRE AND CORNWALL	Mr. John Young.
	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND..	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND.	Mr. John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 21, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages to be obtained by PAINTING the RAILS, as exhibited by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of Shareholders, held on the 25th August. That invention not only saves a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The importance of making a line of rails as much as possible resemble a continuous bar of iron, and which fish-jointing accomplishes, is increasingly appreciated by engineers. A remarkable instance occurred during the late floods: a train passed safely over some fish-jointed rails that were under water; and it was afterwards found that for some distance the whole of the ballast had been washed away. Had the line been fastened by keys only, there can hardly be a doubt that a serious accident would have taken place. The adoption of this system of jointing on the following lines, proves the estimation in which it is held: and there are other lines on the point of applying it:—

Eastern Counties Railway,
East Indian,
Edinburgh and Glasgow,
Egyptian,
London, Brighton, and South Coast,
London and North-Western,
Midland,
Morayshire,
North and South Western Junction,
Waterford and Limerick,
York and North Midland,
York, Newcastle, and Berwick,

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders, held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr. Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company draw attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be formed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been largely adopted by the engineers of the following Railways:

Dublin and Belfast Railway,
Great Western,
Hereford, Ross, and Gloucester,
Midland,
Midland Great Western (Ireland),
Northern Railway of France,
Newport and Abergavenny,
South Wales,
St. Germains and Versailles,
West Cornwall,

The Permanent Way Company have received gratifying testimonials in favour of this form of rail from I. K. BRUNELL, Esq. C.E., G. W. HEMANS, Esq. C.E. Dublin, and other eminent engineers.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede or replace wooden sleepers. They are adopted on the

London and Derry and Coleraine,
East Indian,
Midland,
East Lancashire,
Londonderry and Enniskillen,

and several other lines.

Extract from the Directors' report to the 1st half-yearly meeting of the London and Enniskillen Railway:

"The trial afforded by six additional months' working has also confirmed your directors in the favourable opinion expressed by them respecting the Cast-iron Road of Mr. Peter W. Barlow.

"It has fully answered the expectations formed of it, and there can now be no doubt that its adoption, coupled with the lessened wear and tear from the use of light engines, will effect a material saving in the maintenance of permanent way."

The Permanent Way Company confines itself entirely to the granting licenses to use their various patents, which is done upon very moderate terms.

These several systems have been adopted hitherto to an extent of upwards of 600 miles on the above-mentioned railways.

Every information may be obtained by applying to Mr. CHARLES MAY, C.E. 3, Great George-street, Westminster; or to WILLIAM HOWDEN, Secretary, 26, Great George-street.

GREAT EXHIBITION—CLASS XXII.

"CHUBB AND SON—FOR LOCKS, PRIZE MEDAL AND SPECIAL APPROBATION."

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IT will be noticed that but one other Lock-maker in the United Kingdom, out of the immense number of Exhibitors in this department, has received the award of "Special Approbation." The undoubted character of CHUBB'S Locks for simplicity, durability, and safety, against all surreptitious attempts by thieves to pick or open them, has thus been recognised and rewarded. These Locks have now been used for more than thirty years by Bankers, the Governments of this and other Countries, and by many hundreds of thousands of individuals, and no instance has ever occurred of any robberies having taken place through these Locks having been picked or opened by false keys. The great care exercised in their manufacture, and the moderate prices at which they are sold, still cause them to maintain their pre-eminent position as the most secure Locks for general as well as special purposes.

CHUBB and SON have from time to time invented and applied such improvements in the manufacture of their Locks, so as to combine the greatest security with that simplicity which is essential to Locks used for ordinary purposes. They have lately added, besides other improvements, a Patented Invention of great simplicity, which will in future be applied without any additional cost.

CHUBB and SON have not been in the habit of publishing Testimonials of the practical worth and efficient security of their Locks and Fire-proof Safes, the universal approval by all purchasers having rendered this course unnecessary. They, however, think it proper to bring before the public the following Testimonials:—

Recent Attempt to rob the Dundee Bank frustrated by Chubb's Lock.

"Dundee Bank, Dundee, Feb. 6, 1852.

"GENTLEMEN,—I suppose it will be gratifying to you to receive the following Testimonial of the security of your Locks. An attempt was made upon this Bank on the night of Saturday last by a set of thieves evidently quite accomplished in their profession. The part of our property which they selected for their operations was an iron door secured by one of your Locks, in attempting to pick which there can be no doubt all their ingenuity was at first expended, as the only alternative was the tedious and laborious one of boring into the Lock, in order to destroy it. Before this could be accomplished a sudden alarm made them take to flight; but the work done in boring, &c. could not have occupied less than four or five hours, plainly showing that they despaired of being able to open your Lock in that time. And as in their flight they left all their implements behind them, including a perfect set of lock-picking instruments, it is also seen that they were amply furnished for their work, had they believed it practicable.

"So far as the construction of your Locks is concerned, their safety seems very efficient; all that appears to be wanting is, that they should be enclosed on all sides in case-hardened steel, and their security would seem to be complete.

"I am, Gentlemen, yours obediently,

"Messrs. CHUBB and SON, "GEORGE C. BOASE, Cashier,
"57, St. Paul's Churchyard, London."

In the Bankers' Safes made by CHUBB and SON, the plan of covering the Locks with case-hardened steel plates is adopted, and has been so for some years.

On the morning of Monday, Feb. 9, 1852, the counting-house of Messrs. Arthur and Smith, Bridewell-street, Bristol, was found to have been burglariously entered during the previous day, and after forcing open several desks the thieves turned their attention to an iron Safe, the door of which was secured by CHUBB'S Lock. This they first unsuccessfully endeavoured to pick, and then tried to destroy it by drilling through the door, but were completely foiled. CHUBB and SON have received the following letter on the subject from Messrs. Arthur and Smith:—

"Bristol, 17th February, 1852.

"GENTLEMEN,—In reply to your favour of yesterday, we have to say that our repository was provided with one of your Locks, upon which, no doubt, the thieves first tried their ingenuity in attempting to pick it, but failing in this, they had recourse to drilling. "We are, Gentlemen, yours respectfully,

"Messrs. CHUBB and SON, "ARTHUR and SMITH.
57, St. Paul's-churchyard, London."

"Messrs. CHUBB and SON, "83, Limekiln-lane, Liverpool.

"GENTLEMEN,—On Thursday last our shop was, for the third time within the last two months, attempted to be entered by thieves, which attempts, owing to your Lock being on the door, we are happy to say were frustrated. So determined were the parties to succeed, that considerable force must have been used, as the woodwork was torn away, as if by a crowbar. "We are, Gentlemen, yours, &c.

"21st February, 1852." "A. and J. LAWSON and Co.

THE PRIZE MEDAL, WITH "SPECIAL APPROBATION,"

HAS BEEN AWARDED FOR

CHUBB'S FIRE-PROOF SAFES,

BY THE JURORS OF THE GREAT EXHIBITION.

CHUBB and SON have the pleasure to state that the only Fire-proof Safes in the United Kingdom which have received the award of "Special Approbation," were of their manufacture. The decision of the Jury, made after a full and careful consideration and comparison of the merits of the Safes exhibited, is therefore conclusive of the great superiority of CHUBB'S WROUGHT-IRON FIRE-PROOF SAFES, as being the strongest against the attacks of burglars, and giving the greatest security to Books, Deeds, and Papers, from fire.

Many thousands of these Safes have been supplied to Bankers, Merchants, and others, both at home and abroad; and in every case they have given efficient protection from fire and thieves. Many Safes which are sold as Fire-proof, are made of the thinnest plate iron, and must necessarily be crushed, and the contents destroyed, in case of timbers or brickwork falling upon them. CHUBB and SON'S Safes are made of double casings of strong wrought-iron, the intermediate spaces being filled with the best proved non-conducting substances; they are fastened strongly together with rivets, dovetails, and angle-iron, so that if the whole building in which they may be placed should fall, they would remain uninjured. The whole of them are fitted with CHUBB'S improved Detector Locks.

The Visitors at the Great Exhibition would not fail to notice the Koh-i-noor Safe and Cage, and the Safe containing the magnificent Jewels of A. J. B. Hope, esq. M.P. both of which were manufactured by CHUBB and SON. The Safe used by the Executive Committee for securing the 360,000*l.* taken as admission-money, was also made by them.

A decided testimony in favour of the efficiency of CHUBB'S Safes to preserve Books and Papers from Fire, was borne by Mr. Braidwood, the Superintendent of the London Fire Brigade, at a meeting of the Institution of Civil Engineers in 1849, when the subject of "Fire-proof Buildings" was under discussion. Such an opinion, founded on the great experience of this gentleman, will speak for itself.

From an Article on the Great Exhibition in the "Illustrated London News," May 24th, 1851:—

"Various contrivances to protect books, papers, and valuable documents against the ravages of fire are exhibited in the Building. They resolve themselves into two classes—those which resist the action of fire from being non-conductors of heat, and those which give off a gaseous material. The best specimen which we have seen is manfactured by Mr. Chubb, of St. Paul's Churchyard. Its case contains such an extreme thickness of non-conducting matter, that we should not hesitate to trust any document with it, no matter how important, in any moderate fire."

As to the security of these Safes from the attacks of burglars, the following facts are submitted. From the "Stamford Mercury," Jan. 19, 1849:—

"BURGLARY.—On Friday night last, the offices of Mr. Wilkinson, solicitor, in Peterboro', were entered by thieves, who picked the lock of the door, and so obtained an entrance. The chief point seems to have been a large iron chest in Mr. W.'s office; this at the time contained a considerable amount in cash—notes, gold, and silver—which had been omitted to be paid into the bank during the day. The chest was one of Chubb's celebrated make; in this the burglars broke their picklocks, which were abstracted by means of a magnet the following morning. Having failed with the lock, they next tried to force open the lid; but here again they were foiled: the metal was too tough to break, and too solid to be wrenched or cut, and the thieves were baulked of their expected prize. Money appears to have been their object, as beyond the trifling damage done in opening the desks, &c. nothing was injured or taken away."

Extract of a Letter from F. W. GUNDRY, Esq. Bridport, dated April 16th, 1849, addressed to CHUBB and SON.

"I had my office broken into last night, and several locks smashed; one of your iron chests fortunately resisted the attempts of the robbers, although they tried hard."

Desperate Attempt to open CHUBB'S SAFE completely baffled.

"128, Cross-street, Manchester, Feb. 3, 1852.

"SIRS,—My premises have been entered twice by thieves in the course of the last two months, and an attempt made to open my safe, which is one of your make, and has one of your Patent Locks upon it. I have the satisfaction to state to you that they did not succeed in either case in opening the same. The last attempt was made on the evening of Friday last, the 30th of January.

"I am yours obediently, "JOS. CLARKE.

"Messrs. CHUBB and SON, 57, St. Paul's Churchyard, London."

In the above instance the thieves had picked no less than eight Locks of the ordinary kind, and then tried the Safe Locks with such violence as to break one of their picks, a part of which was found in the Lock. Finding themselves thus foiled, they attempted to force open the Safe, but it resisted all their efforts.

STRONG-ROOM DOORS AND FRAMES, WROUGHT-IRON AND FIRE-PROOF,
OF ALL SIZES, KEPT ON SALE.

DETAILED PRICED LISTS OF SIZES OF ALL THE ABOVE ARTICLES WILL BE FORWARDED ON APPLICATION.

CHUBB AND SON, 57, ST. PAUL'S CHURCHYARD, LONDON.
28, LORD-STREET, LIVERPOOL;
16, MARKET-STREET, MANCHESTER; AND HORSELEY-FIELDS, WOLVERHAMPTON.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture;—

In Cases, 300 feet ..... £1 16 6 } In sizes 40 by 30
" 300 feet ..... 2 14 0 } to 43 by 31
Cases included.
Smaller size at less price per case.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.
BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.
Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to
T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for
RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of
ROUGH PLATE GLASS THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.
The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 6 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NONTRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.
For further information apply to Messrs. JAMES HARTLEY and CO., Wear Glass Works, Sunderland.
N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER
Will be forwarded Gratis, on application, "post-paid," to
Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

PLATE GLASS.—ALFRED GOSLETT respectfully begs to inform the trade that the Plate Glass Tariff has recently undergone a complete revision, that Plate Glass generally, but more particularly LARGE-SIZED GLASS, has been considerably reduced in price, and that he is prepared to forward tenders for the supply of any quantity upon application. Soho Crown, Sheet, Patent Plate, Plate Glass, and Wholesale Looking-glass Manufactory, 26, Soho-square.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and gilding work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

TO BUILDERS, PLUMBERS, &c.
JAMES MILES'S cheap ENGLISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, Church-street, Shoreditch, near the Eastern Counties Railway Terminus. Cases of foreign sheet, various sizes, 41s. 200 feet; crates of sheet, 14 to 16 oz. 2½d. per foot; good crown C C C, 18, 31s and also C C, 15, 23s. per crate; patent plate; Hartley's ROUGH PLATE; stained, ground, and ornamental glass; crown squares of every size in stock; sheet lead; pipe; patent gas-pipe; solder and plumbers' brass work of all kinds; white lead, oils, and colours, at low prices; LARGE STOCK OF PAPERHANGINGS; old lead bought in any quantity, or taken in exchange. Sashes glazed and primed in oil at very low prices, in any quantity.

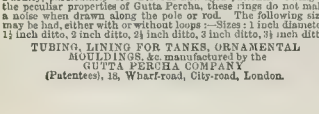
E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD STREET.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Richly-cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

GAS CHANDELIERS, LANTERNS, LAMPS, &c.—The extensive stock of Messrs. BROOK and CO. 119, Bunhill-row, consisting of gas chandeliers, bracket, hall lanterns, table lamps, and lamps of every other description; also stained glass, gas moons, &c. TO BE SOLD without reserve, for cash only, at a considerable discount from actual manufacturing cost. 119, BUNHILL-ROW.

TO BUILDERS, PLUMBERS &c. &c.
THE SUNDERLAND CROWN GLASS COMPANY, Peerless-place, City-road (a few doors from the turnpike).
Crown Glass in crates and squares, Foreign Sheet Glass, Polished and Patent Plate, Ornamental and Stained Glass, Water Closets, Sheet Lead, and Patent Pipe, Plumbers' Brass Work, and every article in the trade.—N.B. Depôt for Hartley's Patent Rough Plate Glass.

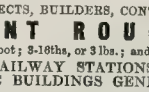
TO BUILDERS, PLUMBERS, &c.
ROBERT METTAM'S CHEAP BRITISH and FOREIGN WINDOW-GLASS WAREHOUSE.—Established 1784. Cases of Foreign Sheet, various sizes, from 35s. per case of 300 feet; good Crown C C, 18s. per crate. Rough Plate, Patent Plate, Crown, Sheet, Stained, Coloured, and Ornamental Glass of every description.—Glaziers' Patent Diamonds, &c. Builders' Sashes Glazed at 3d. per foot super.—Price Lists forwarded on application, post free.



NOISELESS RINGS.
GUTTA PERCHA CURTAIN & CORNICE RINGS.—These Rings have been much approved by the Faculty, particularly for nervous and aged patients. Owing to the peculiar properties of Gutta Percha, these rings do not make a noise when drawn along the pole or rod. The following sizes may be had, either with or without loops:—Sizes: 1 inch diameter, 1¼ inch ditto, 2 inch ditto, 2¼ inch ditto, 3 inch ditto, 3½ inch ditto.
TUBING, LINING FOR TANKS, ORNAMENTAL MOULDINGS, &c. manufactured by the GUTTA PERCHA COMPANY (Patentees), 18, Wharf-road, City-road, London.



SAW MILLS, GILLINGHAM-STREET, PIMLICO.
TIMBER of any size, PLANKS, DEALS, and BATTENS, &c., sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge.
Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.



TO BUILDERS AND OTHERS.
SEASONED WOODS by the Patent Desiccating Process for SALE, at E. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.
Incorporated by Special Act of Parliament, 16 Vict. c. 35.
Edinburgh ..... 36, St. Andrew's-square.
London ..... 126, Bishopsgate-street.
To secure the advantages of this year's entry, proposals must be lodged at the Head Office, or at any of the Society's Agencies, on or before 1st MARCH.
ROB. CHRISTIE, Manager.
Tables of rates and forms of proposal may be had free on application at the Society's Offices, 126, Bishopsgate-street, (corner of Cornhill), London.
WILLIAM COOK, Agent.
** Medical Referees paid by the Society.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

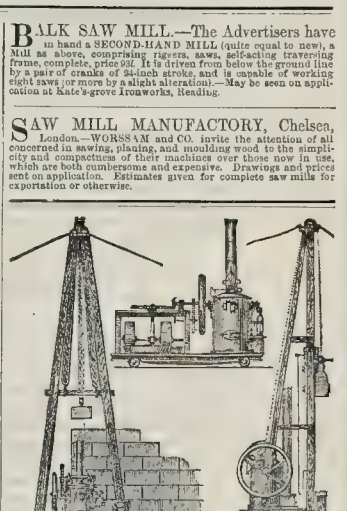
A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at low price, at DRUCE'S, 70 & 71, Wharf, Oncru's road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge, are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.
The Company beg leave to call the attention of the trade to their NEW MOULDING MILL, the largest ever established, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.
The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

DURRAND'S "BONDED and SUFFERANCE WHARF," TIMBER-PRESERVING WORKS, ROTHERHITHE.—BETHELL'S process consists in preparing timber with creosote, or oil of tar, and is particularly applicable for Railway Sleepers, Bridge Timber, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges. And also for use in the colonies, as being perfectly impervious to the attacks of all land or marine insects. PAYNE'S, Sir W. BURNETT'S, and MARGARY'S processes, in addition to their preservative properties, are likewise non-combustible, and are, consequently, adopted in her Majesty's Dock-yards, as a preventive of fire in Ship Building; and are also extensively used in House, Farm, and general Building.
Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.
Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 3, Charlotte-row, Mansion-house, City.

BALK SAW MILL.—The Advertisers have in hand a SECOND-HAND MILL (quite equal to new), a Mill as above, comprising riggers, saws, self-acting traversing frame, complete, price 95l. It is driven from below the ground line by a pair of cranks of 24-inch stroke, and is capable of working eight saws (or more by a slight alteration).—May be seen on application at Kate's-grove Ironworks, Reading.

SAW MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw mills for exportation or otherwise.



A SAVING of TIME and MATERIALS with solidity of Building.
NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 46, Albert-street, Manchester.
TESTIMONIAL
From the Trustees of the Birkenhead Docks.
"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.
"Nathan Gough, esq.
"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.
"I am, Sir, your obedient servant,
"JAS. ABERNETHY."



IMPROVED SLUICE COCKS for Water, Gas, or Steam, brass-faced, and Sluices raised by square thread, engine-turned Screw, working in Brass Nut, in every respect as good as can be manufactured, are offered at the following prices per inch:—

2 inch,	3 and 4-inch,	5 to 9-inch,	10 to 15-inch,
17s.	16s.	13s.	12s.

Lithographs of the improved self-lubricating, and various other constructions, with descriptions and prices attached, may be had on application.
Single purchase Builders' Cranks, as above, fitted with Two Handles, and Wrought Iron Braces and Spindles, with Belt to throw in and out of gear, price 90s. each. Delivered in London free.
BARRETT, EXALL, AND ANDREWES,
Katesgrove Iron Works, Reading.
Agents in London—DEANE, DRAY, and DEANE, where the above may be seen.

The Builder.

SATURDAY, MARCH 5, 1853.

IF the leading men and corporations, throughout the country, could be made to feel strongly that by setting before the public the *chefs-d'œuvre* of painting and sculpture, and aiding in the conservation of fine monuments of architecture, they would be doing more to advance the manufactures of their several departments than they could hope to achieve by the most tempting premiums they might offer to their artizans, we should see a rapid movement towards the establishment of Museums and Picture Galleries in the provinces. We have been slow to stir in the artistic education of the people, and are paying pretty dearly as a nation for the short-sighted neglect: let us hope, however, that we are now interesting ourselves in earnest to remedy the evil as speedily as may be. The movement is certainly more general at this time than it has ever been, and appears to be carried on with sounder views. The noise of it seems even to have startled our neighbours, the French, and is being used as an argument there to induce steps to make the schools of design and public collections more available for the improvement of their manufactures. England knows well, says one of their inspectors of provincial museums, that she is in the greatest danger she has yet risked of losing, by the high perfection of French industry, the credit and market of the world. And although quite satisfied that it is far easier for France to improve to the utmost her machinery (in which England now excels), than for England to make up her present deficiencies in art and taste, the writer says, but do not go to sleep in tranquil disdain for the weakness of England in matters of art. "We have to do with the most ambitious, the most laborious, and the most obstinate of our rivals. If they hope to take from us the genius of industrial art, by the foundation of museums and schools, let us, if possible, take from them the genius of perseverance, and found better museums and better schools."* Long may this be the only strife between France and England,—a battle wherein both will be gainers.

The Act for enabling town councils to establish public Libraries and Museums, defective as it is in some respects, will facilitate greatly what is desired, and should be taken advantage of by all provincial authorities. To set this forth and afford suggestions for the establishment, arrangement, and architectural construction of picture galleries, museums, and libraries, a book has just now been published, and may be usefully consulted.† It is exceedingly well timed, and contains much useful information on the subject. We will allow Messrs. Papworth to state their own views by quoting their preface:—

"Museums, libraries, and picture-galleries stand separately upon the title-page of this essay, and the occurrence is not accidental. Although the reader may remember that a museum is defined as 'a collection of literary and scientific curiosities, and of the works of artists and learned men,' he is requested to consider that in these days each branch of the old museums has grown so extensive (if to be really useful) that only a metropolis can afford to gather portions of a nation's stores under one roof; and that at last it is discovered that even the British Museum is no longer universally thought capable of displaying every acquisition; indeed, proposals are weekly made for the separation of the various divisions of the Museum, and their transportation to other localities. We do not attempt to pronounce upon such a separation in that particular instance, nor to publish academical designs for large buildings; but seeing the spread of the establishment of minor museums, either dedicated to a particular object or so restricted in their opportunities of acquisition as to be either incapable of extension (as many already are by testamentary disposition), or of growing with even moderate quickness to a state of repletion, we thought it a duty, perhaps a profitable duty, to lay before the public some account of the matters chiefly necessary for consideration, in so far as regards the establishment, formation, security, accommodation, and conduct of such institutions; in the hope that the money which might otherwise be wanting for desirable purchases may not be extravagantly expended beyond recall, that the buildings erected may be adequate to the suitable display of their contents, and that the collections themselves may be not only completely preserved, but arranged in a manner sufficient for use and enjoyment."

In opening their remarks on the architectural arrangement of galleries, the authors give the following opinion as to the cost of such buildings:—

"When a town is to be enriched with a collection of pictures, the general feeling of the public must decide whether the edifice raised to receive the gallery is to cost more, and how much more, than the price of the floors, walls, and roofs. No very great error can be committed in taking, as a general notion of expense, that every lineal foot of wall space for pictures, planned in an economical manner, and not like some museums, may be multiplied by 7*l.*: this will give a sum that will provide, in a substantial but plain manner, a building with the necessary appurtenances above enumerated, for a private client. The additions necessary for a public establishment ought to raise the limit of expenditure to 10*l.*: this falls considerably short of the expense, for instance, of the National Gallery, possessing 670 feet linear of wall surface for pictures; that is to say, our limit of expense would be 6,700*l.* The difference between this sum doubled (on account of the rooms of the Royal Academy), and the actual cost, may be supposed to represent the amount expended on account of the site, for decorating the elevations, entrance saloon, &c.; to which must be added, that the size of the rooms also involved modes of construction much more expensive than we recommend."

On what data they arrive at the price named we do not know. The utmost it conveys, however, is this, if correct, that a gallery *may* be built for 10*l.* per foot lineal of wall surface for pictures.

The opinions of several artists on the best mode of lighting picture-galleries is stated, and amongst the illustrations (ten plates) are plans, &c. of St. Geneviéve, Paris; Museum of Natural History, Paris; the Pinacotheka, Munich; and some designs by the authors.

Those who would hereafter build public picture-galleries to answer their purpose efficiently, must first ask themselves, in each case, of what kind is the collection to be? Is it simply to be an aggregation of pictures, or an institution where the history and progress of art may be efficiently studied?

Mr. Dyce, in his pamphlet on the National Gallery, just now published,* wherein he condemns unreservedly, and, in strong terms, the system heretofore pursued there, puts this question very pungently, and supposes there can be few now who think that the purpose of the National Gallery will be served by what, in popular phrase, is termed "a selection of the best works of the best masters." He asks those who think so, if there be any, to apply their opinion to the case of any section of a national library to convince themselves how untenable it is. "Suppose, says he, that—

"The formation of a collection of English dramatic poetry were in question, what should we think or say of the Trustees of the British Museum if they were to decide who were the best English dramatists, what were their best works, and to exclude from the library all but the comparatively few productions they might happen to think desirable? Would such a proceeding be tolerated for a single moment? Would it be endured that they—that any body of men, however eminent—should possess the right to withhold from the public any attainable materials for literary knowledge and criticism; that, in fact, they should have it in their power, actually or virtually, to pronounce a judgment on the comparative merits of authors, the accuracy of which could only be tested by the very comparison which the judgment has the effect of preventing. Yet there is no difference between such a proceeding and the restriction of the national collection of pictures to such works as might happen to be considered the best."

He maintains, with justice, that the collection can aim at no lower object than to exhibit the whole development of the art of painting. The examples of which it consists must, therefore, range over its whole history, and be arranged in schools with that end in view.

The inadequacy of the present Board of Management, with a keeper not a responsible officer, "but a mere servant, acting under the orders of the Board," is such, in his opinion, that there is no remedy for it short of its entire abolition. What he proposes is, that the management should be vested, as it now is, in the Treasury, but that "some officer should be appointed to take charge of all business relating to the National Gallery, to be responsible for the immediate management, and to whom the public should look for the success or failure of the undertaking." This officer, amongst other powers, is to have the nomination of a certain number of qualified persons to give advice on questions submitted to them. If it be true, as stated, that the author of this pamphlet is to be the new Keeper, we must suppose that the present system of management will be abandoned, as he could scarcely take office otherwise in the face of his published opinions as to its inefficiency.

If the collection is to exhibit the regular development of art in various countries, the architectural arrangements of the gallery must of course be made to serve that end; and this, therefore, becomes a question of pressing importance, a new building being contemplated.

One other question arises, and that is, whether the National Gallery ought to be confined exclusively to pictures, or be a part, only, of a museum devoted to all departments of the Arts of Design. Theoretically there can be little doubt that the National Gallery should exhibit the development of *all* the arts of design.

Practically there may be some objections against bringing all our works of art under one roof, but unquestionably each separate establishment should be viewed and treated only as part of a whole.

"For myself," says Mr. Dyce, "I do not hesitate to express my hearty conviction that no gallery can be worthy of this age, and of this nation, which does not accomplish that, *mutatis mutandis*, for architecture and sculpture which, I have contended, and, I hope, proved, it ought to do for painting. In truth, there is not a single reason for the formation of a national gallery of pictures which may not be urged with equal cogency for the formation of a national gallery of sculpture, architecture, and their subsidiary arts of decoration; and when we consider the intimate relations subsisting between all the arts, and how important it is, both for popular information and for the purposes of

* "Discours lu au Congrès des Sociétés Savantes," at Paris, 21st January last: by M. Chennevières.

† "Museums, Libraries, and Picture Galleries, Public and Private; their Establishment, Formation, Arrangement, and Architectural Construction; to which is appended the Public Libraries Act, 1850, and Remarks on its Adoption by Mechanics' and other Scientific Institutions." By John W. Papworth and Wyatt Papworth. London: Chapman and Hall, 1853.

* "The National Gallery: its Formation and Management considered in a Letter addressed, by permission, to H. R. H. the Prince Albert, K.G. &c. &c. &c." by William Dyce, R.A. Chapman and Hall.

artistic study, that every obstacle to facility of reference should, as far as possible, be removed, it will be conceded that there are strong grounds for treating all our collections of objects of art as the sections of one establishment, and for such a local distribution of them as shall offer the greatest general advantages, while, to practical students of art, it occasions the smallest inconvenience and loss of time."

For architecture he asks what we long advocated, and what has been commenced at the Architectural Museum in Cannon-street, a collection of drawings, models, casts, and fragments, adequate to the great purpose of exhibiting the development of architecture, both as a science and a fine art, in all the various stages of its history.

This point seems to have been taken up warmly by the directors of the Sydenham building.

Vigorous steps, it appears, are being taken throughout the country to obtain casts of mediæval architectural works for their exhibition. From Tewkesbury we hear that Mr. Thomas Collins, of that town, has received instructions to take castings of the tomb of Abbot Wakeman (commonly called the starved monk), in the Abbey Church. The tomb is in a chapel dedicated to St. Edmund the Martyr, which was erected by the abbot himself, doubtless with the intention of having his body buried beneath. The company have purchased, we are told, nearly the whole of the collection of casts of mediæval architecture forming the museum of Mr. W. Day Keyworth, of Hull, amongst which are some choice examples from York and Lincoln Cathedrals, St. Mary's, and the Minster, Beverley, and other places, taken under the immediate superintendence of Mr. Keyworth, during the last ten years. We understand that he has instructions to prepare a cast of the whole of the celebrated Percy shrine in Beverley, for the same destination. In Wiltshire, too, Mr. Armstrong Howitt, late superintendant of works at the Wilts County Lunatic Asylum, has received a commission from the company to visit the various public buildings of that and the adjoining counties, with the same object in view.

A new museum has been opened in the Louvre, at Paris, called the "Museum of Sovereigns," which was originated exactly a year ago by a decree of the then Prince President, who wished, he said, to bring together, as in a sort of sanctuary, all that would recall great historical associations. Five saloons are devoted to it, and are called, the *Salle de Louis XIII.* the *Salle de Henri IV.* the *Salle de Henri II.* the *Salle des Bourbons*, and the *Salle de l'Empereur*. The gilt armour of François II. the armour of Louis XIII. the alcove in which was placed the body of Henry IV. after his assassination by Ravaillac; the colossal armour of François *premier*, Dagobert's iron throne, the helmet of Charles IX. and numerous relics of Napoleon, are amongst the most prized of its contents. Our informant speaks well of the arrangement and decoration of the rooms.

Returning to our earlier remarks, we urge provincial authorities to take into immediate consideration the importance of establishing public Museums, Libraries, and Picture Galleries in their several towns.

Large Iron Castings.—The double condensers and air pumps of a leviathan screw steam-ship have been cast in one piece at Glasgow by Messrs. Bennie and Co. of the Caledonian foundry. The height of the casting is twelve feet, the length twenty-two feet, and the breadth about eight feet. The weight of the mass is twenty-four tons, but the difficulty of the work was owing to the peculiarity of the shape and cuttings of the piece, more than to its size. A pressure of about 353 tons was required upon the metal while undergoing the casting process. The rim of a cog-wheel for the same vessel weighs nineteen tons, and is thirteen feet eight inches in diameter, and five feet eight inches broad in the face.

LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.

The sixth and last lecture was delivered by Professor Cockerell on the 9th instant, and embraced a consideration of the adaptation of classical and Italian architecture to the climate and purposes of Northern Europe, together with some remarks on perspective and opties as affecting architectural design; and lastly, on ornament and decoration, especially in sculpture and painting, as architectural accessories.

In the architecture of Northern Europe, the lecturer observed that no features could be of greater importance than windows. Pope had ridiculed the taste for "Venetian windows" in his day; but light, especially in our own country, was all in all. The Italians had a proverb that "where the sun's rays do not come the doctor is sure to come;" and certainly no building could be healthy or wholesome without an abundant admission of light. The unprecedented novelties and improvements lately introduced in the manufacture and application of glass greatly facilitated its employment; and it should be especially remembered that four times the amount of light was obtained by a skylight as by a perpendicular window. In the private banking office at the Bank of England an abundant supply of light had been obtained by a skylight with very little expense; and it was quite practicable, in a similar manner, to successfully imitate the classical *atrium* in modern buildings; the sashes for the glass being made to resemble the cords sustaining the canvas which protected the *atrium* from the glare of the sun. Churches might also be made to resemble the ancient hypæthral temples, and the desire of Alberti to shut out all sublunary objects from the sacred edifice might so be realized.

Many fine buildings had been spoilt by a too close adherence to Italian models, especially by the use of small windows. Those of Vignola were frequently no more than 3 feet 6 inches wide by 7 feet high, being quite large enough for the climate of Italy; but the French architects had wisely employed much larger openings; and in the inner façade of the Louvre a very magnificent effect was presented by the windows, which were more than 7 feet in width by 12 and 14 feet in height. Many old castles and chateaux in France might be referred to as exhibiting a profusion of windows of large size, introduced with admirable skill and effect. Now that the tax upon light was removed in this country, it was greatly to be hoped that the advantages of large windows would no longer be overlooked. Professor Cockerell exhibited a design for the alteration of the present National Gallery, particularly illustrating the improvement which might be made in the façade by the use of large and bold windows. The works of several Dutch architects showed their ability in the liberal employment of windows.

Sir C. Wren had attentively studied the Belgian and German versions of Italian architecture; and his not having visited Italy probably arose from his sense of the inapplicability of that style to our own climate. The architecture of Belgium was especially interesting to the English student, who could not visit any other neighbouring country with more benefit. In such small countries as Belgium, Sardinia, and Naples, fine architectural works were more abundant than in larger kingdoms; which, being more involved in warfare, paid less attention to the arts of peace. Belgium being so long under the protection of Charles V. and Philip of Spain, was enabled to cultivate the fine arts; and her cities being fortified and secure, many fine buildings were erected in their streets and squares. The town-halls and mansions, and the halls of the different guilds, were very remarkable works; and though not always regular in their architecture, a fine effect of light upon the richly-decorated interiors was produced by the fronts being nearly all occupied by windows, — an effect, indeed, which might be imitated with advantage in many of the narrow streets of London. In illustration of the gradation in the size of the columns in Belgian churches, noticed in the preceding lecture, Mr. Cockerell referred to a drawing of the church of St. Michael-Louvain, which presented, among other interesting features, a subdivision of the apse at the east end into five narrow Lancet windows. In the church of St. Michael, at Munich, the number of divisions was greater; these eastern windows contrasting strongly with the much wider openings in the aisles. The apses of French churches were frequently divided into three lights only, the arches being twisted into very unpleasant forms; and, in fact, the Belgian churches generally were much superior to those of France.

Among the other features peculiar to a northern climate might be mentioned roofs and chimneys. Palladio made the roofs of his buildings prominent and important; and he had been imitated in that respect in some English works. The effect of the massive boldness of the roof of the Louvre, and similar French buildings, was very striking to an English observer. In this country there seemed to be a horror of that important feature of a building. Houses were all built as if they had lead flats: an ostentatious display was made of a mighty front, with a prodigious parapet, and the roof altogether disappeared. This, in some of the new streets of London, had a very painful effect, and almost encouraged the hope that the old law of Augustus, limiting the height of the houses in Rome, might be re-enacted. The old roofs with dormers admitted the sun's rays into the street, whereas they were to a great extent excluded by the modern system. The roofs of Chelsea Hospital were displayed and composed with great artistic effect. With respect to chimneys, he might observe that they were skilfully treated in French and German buildings. Philibert de l'Orme had a chapter on the subject, with numerous elaborate designs, displaying great variety of architectural composition and effect. Vanbrugh had disposed the chimneys at Blenheim with much artistic skill; and at King's Weston, near Bristol, he had arranged them in the form of a tower, rising from the centre of the building, with an (open) arcade on each side, the piers containing the flues; and the effect of this crown to the building in the landscape was remarkably striking and beautiful. Clare Hall, Cambridge, presented another good example of the arrangement of chimneys; but Sir W. Chambers, on the contrary, had overlooked this point; as the irregularity and want of symmetry of the chimneys of Somerset House, as seen from the river, testified.

In considering the influence of perspective and optical illusion upon architectural designs, the lecturer again eulogised the attention of the Jesuits to these matters; and referred to Möller's elevation and perspective view of the cathedral of Marburg, which present a very remarkable contrast; the perspective giving a much less apparent altitude than is actually proved to exist by the geometrical elevation. This difficulty of reconciling the intended with the actual effect, and of designing a structure with due regard to surrounding objects, and to the points from which it could be viewed, was one of the greatest which the architect had to contend with. Vitruvius urged that it was a duty to seek to rectify these illusions; and recent observations showed that in the Parthenon the Greeks had in fact done so: but Perrault denied the theory of Vitruvius, and argued that the understanding of the spectator coming to his aid, enabled him at once to do so, without the exertions of the architect. It was obvious that the judicious management of lines and forms might greatly affect interior perspective; and Blenheim was well deserving of careful study in this respect. Many theatrical scene painters had become successful architects; and Vanbrugh's connection with the stage might account for the scenic character of his designs.

In considering decoration, the lecturer noticed first those mechanical repetitions of ornament, such as the echinus, dentils, modillions, &c. which, though exhibiting great merit and effect, might be executed by the workman; and next the higher efforts of the carver, the sculptor, and the painter. Great skill was necessary in the use of ornament, which, unrestrained by taste, was really a vulgar propensity. As Shakspeare observed, "the world is still deceived by ornament;" and "to hide by ornament the want of art," was a common practice justly stigmatised by Pope. The first consideration with the architect was to adapt his decora-

tion to the structural features of the building; as the Greeks did their columns, metopes, and triglyphs, to the primitive wooden type; and as the Italian artists applied their decorations to the various surfaces formed by the architectural lines. In the best Italian works the constructive features,—as entablatures, chain plates, quoins, key-stones, voussoirs, &c.—were made most prominent by ornament; verifying the language of the prophet Habbakuk, "The stone shall cry out of the wall, and the beam out of the timber shall answer it." The application of sculpture to architecture was best understood and practised by the Greeks, who rectified the rigidity of the straight lines of their temples by diagonal and flowing lines in the sculpture, and who adopted a different scale for their figures in the metopes, the frieze, and the pediment. They regulated the number and size of the figures in the pediment by those of the columns. In an octostyle temple there were from twenty to twenty-five figures in the pediment; in a hexastyle temple, from fifteen to eighteen; and in a tetrastyle building, only seven or nine; and the height of the figure was never more than three quarters of the diameter of the column. In the Madeleine and the Chamber of Deputies, the French had widely departed from these admirable proportions. They also (as well as English sculptors) had abused the employment of colossal statues in reference to site; and even Thorwaldsen's statue of Schiller, at Stuttgard, destroyed, by its magnitude, the effect of all the surrounding objects. In such matters the sculptor should be controlled by the architect, as would appear to have been the case in mediæval buildings.

In reference to painting, as an auxiliary to architecture, the professor dwelt upon the admirable effect of pictures of all kinds, in giving space and light to interiors; and pointed out the merits of the decorations of Pompeii and Herculaneum, and more especially of the works of Rafaelle, Julio Romano, Caracci, &c. illustrating the latter by a series of beautiful drawings, contributed by Mr. Gruner. Some references to the decorations of Sir James Thornhill and other English painters, terminated his remarks. In conclusion, Professor Cockerell thanked his audience for their attention to his necessarily limited course of lectures; and expressed his readiness to forward their studies by any information which he could supply to them personally and individually.

We congratulate the Professor on the excellence of his course.

THE ARTIST'S GONIAMETER.

AT a meeting of the Royal Institute of British Architects, February 21, Mr. Henry Twining described an instrument under this title to assist in obtaining correct representations of objects from nature, by pointing out the different angles at which they present themselves to the eye, as well as by finding out the vanishing points of their retiring sides. The instrument consists of a graduated semicircular plate placed horizontally on the top of a rod or pillar, so as to be raised or lowered at pleasure. Above this plate or dial is placed another having a vertical position, which is susceptible of being moved in a vertical direction round its axis, and which serves to mark the elevation and the depression of any point above or below the horizon.

By means of the goniameter the true position or distance of the ground-line of a picture is found, whether the plane intersected by it be on the same level as that on which the observer stands, or on a different level at a determinate depth below that plane. Hence, by observing the depression of the angle which the bottom of a picture attains below the line of the horizon, and comparing the interval thus measured from the horizon downwards with the height of the figures, or with the portion of the space between the ground-line and the horizon which they fill up, we find out the real distance from the observer at which they are situated, or at which the scene represented is supposed to commence. It is not until all this has been done by a process which, like the one here indicated, is *without* the boundary of the picture, that the means which the usual perspective problems furnish for marking out retiring distances *within* the picture can be considered to be perfectly correct.

In connection with the horizontal arc or plate is another index, consisting of three branches or wires placed at right angles, and which is susceptible of a horizontal motion. Its position is immediately above the horizontal graduated plate. The straight side of this plate is placed parallel with the picture, the angular dimensions of which are marked on the graduated arc. The cross wire of the index immediately above is then so directed that, to the observer's eye, it will correspond exactly with a given line of any object in nature of which it is wished to obtain the direction, or, in other words, the inclination with reference to the plane of the picture. A plan recommended by Varley for attaining this purpose, is to give to one of the limbs of a jointed rule the inclination which any receding line in nature may appear to have to the eye; but with this instrument we reverse the method, as it were; for we adjust the direction of a wire which is level so as to correspond with the horizontal, though apparently inclined line, of any retiring object; and then we find out, on the graduated plate connected with the wire, the exact position of the vanishing point to which not only the line just measured converges, but all those which extend in a direction which is parallel with it. Thus the true inclination of all horizontal lines is obtained by finding out, in the first place (and afterwards by transferring to the picture, according to a simple method, but which cannot here be fully detailed) the vanishing points of all level lines of objects.

The horizontal plate and index thus serve to convey clear and precise notions of the direction of the vertical surfaces of objects relatively to the plane of the canvas, whilst the vertical arc serves to give the angular elevation and depression of objects, or their extension above or below the horizon; a correct representation of nature, under various circumstances, requiring a perfect familiarity with both these principles. The advantages of this instrument, generally speaking, may be considered to consist in accustoming the student's eye, by its frequent use, to appreciate the perspective relations of objects, as it were, intuitively, and without embarrassing his mind, while sketching in the open air, with the intricacies of perspective problems and diagrams.

Mr. Twining offered some remarks in further elucidation of the subject, and pointed out several instances in which the eye is deceived as to the real size of objects in nature, and false representations of them are consequently given in pictures. Thus the sun, at different degrees of elevation above the horizon, is often made too large in paintings, and the reflection of its rays on real water becomes the cause of an optical illusion arising from the perspective foreshortening. A picture properly should be contained within a circular outline, so disposed that the visual diameter should subtend an angle of 50 deg.; and the distance of the spectator from the centre of the picture should be equal to that width or diameter. Such an outline, however, does not harmonize generally with the fittings and finishings of our rooms, and a rectangular shape is, therefore, usually adopted, of which the horizontal sides should subtend angles of 50 deg.; and the vertical ones angles of 40 deg. to ensure good proportions. In a picture representing a level scene, as a sea view, the horizontal line, or level of the eye, should be situated at about one quarter the height of the picture, equal to an angular elevation of 8 deg. to 10 deg. In a mountainous scene, viewed from a considerable elevation, the horizontal line would be proportionably raised to about two-thirds the height of the picture.

The introduction of human figures gives a standard of proportion to a painting, which requires much consideration on the part of the artist. At twenty yards' distance, the height of a human figure would subtend an angle of 5 deg. and the usual proportions of the figures in a landscape correspond to those of individuals who, in nature, might be situated at about that distance; two-thirds of this space, or thereabouts, being represented by the small interval which separates the picture from the observer. Such pictures being generally of small dimensions, must be viewed from a near position, and their due effect greatly depends on the choice of that position. Hofland, in his view from Richmond Hill, has introduced the figures correctly, at some distance from the ground line and below the eye of the observer. In such a picture, which has a very high horizontal line, the figures must be placed at least at 40 feet distance: if put in the foreground, they would destroy the effect of the landscape. Claude has violated the rules of perspective proportion by the manner in which the figures are introduced in his paintings, as they are always placed below the horizontal line even in level scenes, where the eye of the observer could not be situated above them. Vernet, the marine painter, Salvator Rosa, Wilson, and some modern painters, have committed the same error in the position of the figures with respect to the horizontal line, which Mr. Twining pointed out in some engravings taken from their works. In an engraving reduced from the original, which would be viewed more closely than that original, the error would be more apparent. The angular measurement of the real distance of figures from the observer which the instrument would afford, and which could be transferred to the drawing, would prevent the artist from committing like mistakes.

Mr. Twining explained the manner in which the vanishing point of all lines might be determined by the instrument, and transferred to the drawing-board. Artists generally assumed the vanishing points to be within the picture, but the instrument would give the exact position of them. In sketching from real objects, as houses or streets placed in different directions, the angular measurement given by the instrument would ensure greater correctness than mere linear measurement often taken by the eye on the pencil. Though opinions on æsthetical principles may fluctuate, yet the application of mechanical means, such as the instrument under consideration, must tend to the improvement of art generally, and not least to the correct delineation of architectural subjects.

In the course of the discussion which followed, the chairman, Mr. Mocatta, said that, as architects, they all understood the value of drawing by angles: they were already acquainted with Nicholson's centrolineal and other instruments, which had led them to understand the difficulty of fixing a vanishing point out of a picture. The instrument described by Mr. Twining appeared to be more applicable to landscape drawing than to architecture. They, as architects, were accustomed to make their perspective drawings by means of plans and angles obtained by rule from geometrical elevations and ground plans; but in sketching from nature they could not so readily apply the rules of perspective, as when they worked with plans before them. In such circumstances, inventions such as Mr. Twining's were of much value and interest.

Mr. G. Foggo considered Mr. Twining's invention, giving as it did a quadrant moveable on an universal joint, was peculiarly applicable to teaching pupils. In teaching perspective, there was always confusion and difficulty in respect to the accidental points, but with the new instrument they might be made much more simple. The student of perspective necessarily had such a mode of measurement in his mind, but it was much better to have the actual thing itself. In regard to the size and position of figures in pictures, it should be remembered that perspective, as applied to positive forms, was very precise; but whenever there was life and motion, that precision was deviated from. Thus the human eye possessed a degree of brilliancy and mobility which made it appear larger than it really was, and the artist who neglected that fact would produce that unpleasing effect always seen in photography. In the same manner the artist saw the sun surrounded by a halo which made it appear larger than it would if it were actually measured by any instrument. Turner would never have acquired his great reputation if he had merely drawn by lines: the student, however, must know how to do so in the first instance, and he could afterwards cultivate the poetry of art.

Mr. Nelson, Hon. Sec. observed that the principle was the same as that of sweeping a circle with the theodolite. He suggested that the invention was more adapted for the study than for the open air, and that it was less portable than the camera lucida.

Mr. Twining said that although, in one respect, the camera lucida had infinite advantages over his instrument, it must be remembered that the former taught nothing. A child might follow the outline given by the camera lucida without learning anything; but after a person had exercised his eye and

his judgment for a week or two with the new instrument, he would know a great deal of perspective. In reply to the Chairman, Mr. Twining added that he only took in 50 or 60 degrees with the instrument for a picture, though it might take in 160.

Mr. J. W. Papworth adverted to the known fault of the camera obscura and the camera lucida of distorting upright lines. Any instrument which gave a mechanical check to the unsteadiness of the eye in drawing would necessarily be a great boon; but it appeared to him that the eye was required to be perfectly steady in using Mr. Twining's circular plate Instruments were generally used under the pretence of saving time, but in reality to save study. He should, indeed, by no means recommend the use of instruments at all. Any gentleman who had practised photography would know that no greater number of sketches could be so produced than by the eye and hand. He believed the discovery was beginning to be made that the eye and the hand were the best machines for drawing.

Mr. Scoles, Hon. Sec. observed, that in his own practice with the camera lucida, he had found it an easy matter to prevent the divergence of lines referred to by Mr. Papworth, by having the drawing-board fixed (by the aid of a spirit-level) in a perfectly horizontal position: with this precaution, he had found the camera lucida of the greatest use in getting the main outlines, or even a geometrical elevation of a building. As Mr. Twining had observed, artists frequently made their angles too great in representing mountains. On one occasion, he was in company with several gentlemen accustomed to draw by the eye with every appearance of accuracy, and each of them made drawings of Mount Etna; but when the angle of the mountain, as taken by a pocket sextant, was compared with their drawings, it was found that they had all made it about twice as much as it ought to be. There certainly was a difference in the angle presented to the eye, and that obtained by an instrument; and it might be a question whether the latter or the former should be adopted by the artist.

THE CONVERSION OF EPPING FOREST.

For some years past a growing feeling has been evident on the part of the people of this country that the great increase of population, together with the increased wants of the lower classes, consequent upon their improved social condition, calls imperatively for the conversion of all waste and unfructifying land to beneficial and productive purposes. This has been particularly the case in regard to those large tracts of uninhabited and thickly-grown ground known as royal forests. The extreme trouble, however, of settling the innumerable claims and rights of those who from time immemorial have derived their privileges from the Crown, added to the disinclination on the part of government to interfere with vested interests of so exalted and time-honoured a character, for a long period rendered any great change in the disposition of these royal properties a matter of insuperable difficulty. Latterly, a more liberal view of the question on the part of those most capable of dealing with it has been followed by legislative enactments and a variety of efforts, which, doubtless, will eventually succeed in converting much that is now unproductive and useless into some of the finest and most valuable land in the kingdom.

Unfortunately, it is seldom that radical changes of a vast character are effected without a considerable waste of public money, some injustice, and much matter for regret. As far as regret for the loss of those sylvan scenes of "merrie England" now on the eve of giving place to the furrow and the farm, we must console ourselves with the reflection of the counterbalancing advantage to be derived by their conversion to utility.

How far this is attainable in one particular instance it is our present business to inquire.

An advertisement appeared the other day from one who holds the "honourable and ancient office of Verderor of the Royal Forests," in the county of Essex. It is addressed "To the freeholders of the county of Essex, more especially to those resident within and interested in the Great Forest of Essex,—Waltham, Epping, Loughton, Woodford, Chingford, Hainault, and Walthamstow." The writer observing that great changes have occurred since the laws and regulations of forests were efficiently carried out at forest courts, that a great increase of population has taken and is still taking place, and considering that 12,000 acres of land in this locality are now lying waste and unproductive, calls upon all those interested to apply to her Majesty for complete disafforestment.

There can be no doubt that since the discontinuance of the once rigorous forest laws, with all their attendant establishment of rangers and keepers, abuses have crept in, and the royal forest of Epping, like many others, has been prodigiously impaired in respect of its wood, and encroached on by settlers. The audacity of these intrusions, by which territorial right has been permanently established, can only be estimated by those acquainted with the neighbourhood. Of late years they have increased to an inconceivable degree, in proportion to the number of respectable squatters in freshly varnished suburban villas, which, mushroom like, from the prolific soil of civic taste and enterprise, have sprung up on the verge of the forest. The process is simple: first, a stump or two, then a rail, then an unpretending row of privet; and, finally, the land is fenced, enclosed, and claimed as indefeasible *freehold*.

The difficulty, with the present insufficient means at the disposal of the authorities, of opposing these intruders, and the almost impossible process of ejecting the trespasser when the trespass is complete, clearly points out the only way in which the remaining property can be secured from the grasp of these unscrupulous pilferers. Of poaching, deer-stalking, and the like, there is little to be said. Gins and traps have long ceased to be set for the hare and the pheasant, and the days are long passed since the peep-o'-day boy singled out a fat buck as he passed his place of concealment. In point of fact, there remains scarcely a trace of game in the whole eight-mile range of brake and brier from Walthamstow to Epping.

But poaching and pilfering, it may be easily conceived, are not the only evils attendant upon such an extensive waste, ill-regulated as it is, and within ten miles of the heart of the metropolis.

The advertiser tells us that, in spite of encroachments, pilfering, and land-jobbing, 12,000 acres of land are here lying in total unproductiveness. For this and the previous reasons, he would apply for disafforestment,—"taking care to reserve parks or spaces of ground for the recreation, not only of the poor inhabitants of the forest, but also for the artizans and mechanics of the great metropolis, who have been accustomed from time immemorial to seek health and relaxation from their labours by occasional visits to favourite spots during the summer months, and likewise to reserve inclosed spaces for all duly entitled foresters' cattle, under proper care and regulation."

At a time when so much importance is attached, as well as large sums of public money expended on the formation of peoples' parks, we think the proposition is deserving of serious consideration.

Twelve thousand acres of unproductive land! But, is it certain it could be rendered satisfactorily productive? It is proverbially *poor land*: considerable time and enormous expenditure would be requisite to bring it under cultivation; while the timber, which in the New Forest is of a description likely to remunerate for the labour, is in Epping of an inferior description.

Now the extraordinary spread of the metropolis eastward has already brought its limits within a very few miles of the district we are describing; and there is no reason to doubt but that a few years will see even that range considerably diminished. Two railroads,—one taking an easterly the other a north-easterly course, already encompass this vast forest, and other lines are actually before Parliament for intersecting the very woodland itself. An enormous population teeming from "manufacturing London" is in the habit of "seeking health and relaxation" in the spacious glades and tangled thickets of the forest. Epping Forest is even now a people's park on a magnificent scale. Why, then, not recover the *whole* for this purpose, converting it into a *royal park* for the benefit of the working classes of the metropolis?

A picturesque, a time-honoured, a well-known park is here ready made. At a "moderate cost" it might be cleared, drained (to the immense improvement of a largely increasing neighbourhood, at present greatly in want of it), altered, and converted. It might be intersected by roads, drives, and pastures, enlivened by the villages and townships existing in its confines, approached by railroads, still always

"A rural, sheltered, solitary spot,"

and a people's, a royal, park.

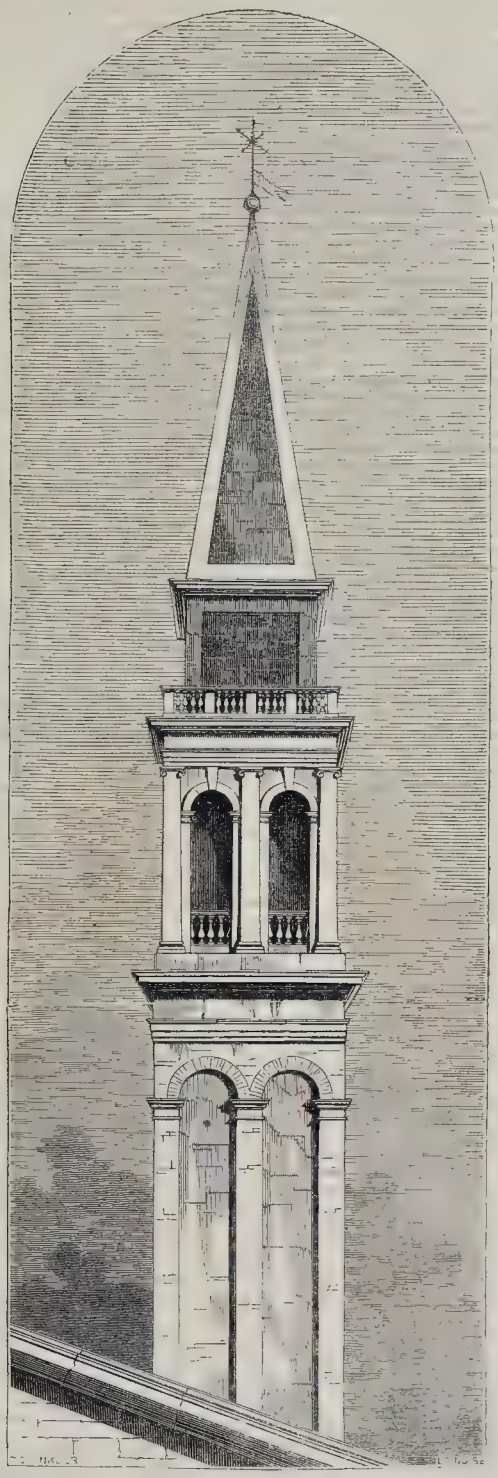
MIXED SUBJECTS IN STAINED GLASS.

THE SUB-DEANERY CHURCH, CHICHESTER.

Your correspondent, "An Antiquated Member of the University of Oxford," seems pertinaciously opposed to subjects of the "same size and sort as that at the Sub-deanery." Is he aware, after viewing this window "at his leisure," that the central subject *is* infinitely larger than the rest? Such is the case. With regard to the reference of subjects to each other, as he is not satisfied with the Babel window, and, of course, not with the Sub-deanery one, I will quote others within his reach. The "Surtees Papers," and "Hutchinson's History of Durham," vol. ii. pp. 252-7, contain an account of most of the glass that formerly adorned the cathedral there, amongst which many cases in point occur: one will suffice, —"The first towards the east, was the finest window, containing five long lights, *divided* by stone-work, having in the middle the picture of Christ crucified, and, above his head, a pelican pictured giving her blood to her young ones: on one side, the picture of *our blessed lady*, and the picture of *St. John the Evangelist*; and the picture of the *venerable Bede*, on the *north side of our lady*; and St. Leonard on the *south side of St. John*, all in coloured glass" (p. 250). This window will, I think, be found to be *symbolical* in its character, and an answer to his denunciation, of "such doctrines being manifestly unsound." The east window of St. Margaret's Church, Westminster, also partakes of the like character: it is also of five lights. The Crucifixion is pictured in the three central ones. Those of the north and south are occupied with pictures of St. George and Katherine. Without multiplying examples, I have therefore endeavoured to show, by these and my former letter, that the *necessary* lights to a picture of the Crucifixion, need not, as a matter of course, partake of its own character or epoch. * *

In answer to his two direct questions, I must inform him that stained glass is a *revived* art, and that as an *auxiliary ornament* it rests on the style and detail of the edifice of which it constitutes a part. I endeavoured in my last to show that each light of a window, in ancient practice, was considered complete in itself, irrespective of its companions, even to the minor parts in the tracery, the unity of the whole being left to unison of detail, and colouring. It occurs to common sense that the art in its revival (in construction at least), must depend mainly on laws deduced from such ancient examples as can be found, they being the results of ages of experience. *They* are found to be *mosaics*, composed of *intractable material*, bearing in their development an analogy to, and an incorporation of representations of, tapestry, altar hangings, vestments, mural paintings, encaustic tiles, architecture, armour, monumental brasses, heraldry, and the like, with which they were ever assorted. For these very reasons they bear no relation whatever to the shadowy pictures of Raffaelle, Titian, Domenichino, &c. they having secularised and sensualised the poetic and instructive symbolism of early Christian art. Besides which, their merits and beauty depend on opposite means: the one requires *bold and vigorous outline* as indispensable towards its combination and effect: the merits of the other require the *total absence of it*. It is for this reason (as I have said in my last) that the shadowy style of glass has ever been, and must continue to be, a failure, because, from its intractable nature, it is happily incapable of accomplishing that object: its mission is, therefore, sacerdotal, embracing the spirituality and symbolism of art, which it is so especially calculated to develope. Apprehendo.

M. Visconti has been appointed architect to the Emperor of the French.



TOWER OF S. FRANCESCO DELLA VIQUA, VENICE.

TOWER OF S. FRANCESCO DELLA VIQUA, VENICE.

THIS elegant and simple tower rises on the side of the crowning pediment to the street front of one of the largest and best proportioned churches in Venice. Sansovino is said to be the architect, while the front is attributed to Palladio: it is very similar in design and proportion to the Church *Del Redentore* and *San Giorgio Maggiore*, also by Palladio. It has two bronze statues representing Moses and St. Paul, the work of Tiziano Aspetti. The interior is very spacious and elegantly proportioned, and contains seventeen chapels. Amongst the many pictures is one of the Resurrection, by Paul Veronese. There are two enriched monuments in marble, one of which is to the memory of the Doge Andrea Gritti, who died in 1538. In the sacristy is a picture representing the Virgin surrounded by Angels, also said to be the work of Paul Veronese. The tower, as I have before said, is very simple and elegant: it has a lightness and grace which could hardly be expected from so few and simple parts. The darker shading in the upper portion above the balustrade shows where red brick is introduced.

T. C. T.

THE DIABLERIE OF ARCHITECTURE.*

THE excitement described was in nowise lessened when the magician produced still another engine, neither great in size nor complicated in form, but of an aspect than which nothing within the compass of the ten winds could possibly be more insidiously cunning. It was announced to have the suspicious name of "Set-square." The curiosity of certain of the learned brethren of the seminary so far prevailed over their sense of danger that they would have this engine passed before them for inspection; although others of the brethren warned them to beware. Happily, no mischief yet resulted, save only that the engine emitted a faint but evil odour, as of the smoke of the dæmon in the stronghold. But mark what followed!

The appearance of this deceitful engine was three-sided, with one single mysterious aperture in the midst of its form; its necromantic operation was with reference to the "Tea-square" of similar effect to the action of that engine itself upon the "Drawing-board;" the same incomprehensible coincidences were produced in a manner more than wonderful to behold.

The great lord Stock-brickee and his learned brethren now declared that they would no longer be denied,—that this engine must forthwith, for the safety of the seminary, be immersed thrice in the water of the unknown river. All remonstrance being unavailing, the magician Jones at length reluctantly consented; and the immersion was performed with due ceremonial. But, behold! no sooner was the engine placed in the sunshine on the sacred stone, to dry off the water which may never be wiped, when it curled up like a leaf in autumn, and withered into fragments with cracks which could never close; proving, beyond further question, how repugnant to the evil agencies is the influence of the good. Conscious of the detected wickedness of his engine, the barbarian necromancer displayed but little anger at its destruction (and of what avail would anger be against the power of Vitree-oo-voos the Old?), but contented himself with stating that it was of no moment, as he could dispense with the engine in the meantime, and his dæmon should fashion one anew on his return. The great lord and his brethren now demanded that the same test of the water of the unknown river should be similarly applied to the other engine "Tea-square;" but Jones refused with surprising obstinacy to agree to the measure, and declared that he must rather decline any further exhibition of his powers. He was, therefore, permitted to proceed; although with many misgivings, which, alas! were too speedily justified; and in thine own perfumed chamber, O Vitree-oo-voos the Old!

How to express that which next followed! The necromancer now produced a certain box or cage, of a dark metallic surface, which was formed, he said, in reply to a question, of the

* Some of our readers may perhaps consider an apology necessary for the devotion of so much space to the following *jeu d'esprit*. If so, they will find it in our desire to give variety to our pages, and to induce thought by collision.—ED.

skin of sharks. Touching some secret influence therein, he caused this cage to open, and therefrom he brought forth to view an unknown creature of an aspect unmitigably horrid. The designation thereof he stated to be "Compass;" although it was remarked afterwards that he sometimes applied to it, as if inadvertently, the significant and dire appellation of "Dividers." This was manifestly of animate form, as if it might be the "scorpion" described in the writings of Vitree-oo-voos the Old. From a single metallic head, in which a pair of eyes was apparent, there extended two elongated limbs or proboscides, likewise metallic, armed at the extremities, each with a single long piercing talon, or, as it subsequently proved, poisonous sting, by which, fixing them in the surface of the prostrate "elephant," the creature did traverse and pervade the same in a manner which hath no parallel on record, save the locomotion of the fabulous John with his seven-league boots. And as if this were not sufficiently wonderful, the creature would at a time perform marvellous gyrations round and round, and would now clasp together its hideous limbs, and again extend them apart to the most incredible dimensions. The entire absence of all development of an abdominal nature in this creature proved it to be, as would be supposed, altogether of a spiritual and necromantic kind; and it need scarcely be recorded that its evolutions were viewed with universal terror. The barbarian magician, avowing that this creature was entirely harmless, and even devoid of volition, suggested that it should be passed around for the inspection of the great lord and his brethren; but this was unanimously, and, as it subsequently proved, most wisely declined; and, on the contrary, it was ordered that the creature should be immersed seven times in the water of the unknown river. This order was, however, resolutely opposed by the magician; and the great lord and his brethren, after deliberation, consented to waive the point, on condition that the creature should be securely confined by a chain to a fixed point, at such distance as to prevent the possibility of its attacking the great lord or any of his brethren. This was accordingly done; and Jones was further directed to convey to the creature, in its own tongue, the order and supreme command of the great lord Stock-brickee, successor, younger brother, and chief priest of Vitree-oo-voos the Old, and of his learned and honourable brethren of the seminary then and there assembled in council, that while in their presence it should demean itself respectfully, quietly, and inoffensively, and strictly refrain from all endeavours to escape beyond the limits of its chain. The magician replied that he had no means of communicating any such order to the creature, but that he could pledge himself that the substance of it should be practically obeyed. O impotent or deceitful Jones!

There were next presented two creatures together. They were generally similar in size and form, and the great lord and his brethren considered them to be male and female. They were smaller than the previous creature, and therefore less alarming; but in figure they were so far like unto it as to be evidently of the same tribe. Their name likewise favoured this conclusion,—they were each called "Bow-compass." They had the same head, and the same elongation of limbs, as the "Compass," but the development of abdomen, which was before entirely absent, was now distinctly presented, although in the extraordinary form of an extension of the system upwards from the head. The nature of these creatures was therefore justly considered to be so far less dangerous than that of their predecessor; but there yet lay great wonders in the construction of their limbs or proboscides. For in either case, although one of these corresponded entirely with those of the "Compass," the other was altogether peculiar. The one had what appeared to be a wooden limb, as if the creature had been mutilated; and behold! the other was found to have a most formidable pair of jaws, or mandibles. But the great lord Stock-brickee and his brethren here interposed and deliberated; after which they positively pronounced both these creatures anathema, and would have no more knowledge of them, but wisely ordered them to be instantly confined in their cage made of the skin of sharks. "For," said the great lord, "one of such creatures is enough,—we read nothing of them in the pages of Vitree-oo-voos the Old."

Here the great lord Stock-brickee further inquired of the barbarian necromancer Jones,—at the same time warning him that he need not answer the question in self-crimination,—"whether he knew one of the name of Mulciber?" To this the magician, after some hesitation, replied "that he recollected a man of that name once in the Fusiliers, but that of late he had lost sight of him, and that he believed he was of Dutch extraction." The great lord rejoined, "that he and his brethren knew him well;" but the observation was sarcastical. The magician, however, replied, "that he had great pleasure in finding that he and they possessed a mutual acquaintance, and that he very well recollected now that he was a mild fair man and played billiards well." After some deliberation, the necromancer was instructed to proceed; and he accordingly introduced another of his agents.

This creature, which was of exceedingly vicious aspect, he denominated "Drawing-pen." It appeared to be of vermicular or snakish constitution, wingless, and furnished with prodigious metallic jaws or mandibles: and Jones explained the manner in which the creature did fill its mouth with ink and distribute the same by way of delineation on the "elephants" before mentioned. The great lord and his brethren inclined to the opinion that this creature could be no other than a dæmonian mosquito; wherefore it was ordered into immediate confinement in the cage with the "Bow-compasses."

Jones then produced a certain pen of wood, called "Lead-pencil;" but, as if there could be none of his engines of ordinary or reasonable nature, this was found to delineate, not as our pens do by means of ink, but by a hidden core of the most unaccountable action. It was agreed by the great lord and his brethren that this agent also must be a vermicular creature, dead and dried, and that the mysterious core therein must be either the spinal column or the intestinal canal.

Lastly, the magician displayed an implement of irregular form and unknown substance, which he caused to lick up from off the "elephant" the delineation produced by the "Lead-pencil." But the astonishment of the great lord Stock-brickee and his brethren had by this time become exhausted, and these marvels ceased to amaze their minds.

The "Drawing-pen" and the "Bow-compasses" being in close confinement in the cage of the skin of sharks, and the "Compass" also being chained to the table, the magician announced that the introduction of his engines was ended; and he was ordered to proceed to develop their operation.

And now, O pen of Bumble-bee! grand librarian and secretary and interpreter to the sacred, honourable, and most renowned seminary of Vitree-oo-voos the Old, now where is thy skill? is it not as nothing? for how to tell what followed is surely beyond thy powers!

Then did the barbarian and dæmonian Jones affect to commence the development of his secret powers. O Mulciber, thou red hot! Scarcely had the wicked magician made one single movement of that hideous and execrable engine the "Tea-square," when it very bitterly repented the great lord Stock-brickee and his learned brethren of the seminary that they had consented to dispense with the evil essence of that engine being proved in the water of the unknown river! For, as if the first motion of this most evil thing were enough to loose all evil creatures from control, behold! in a moment the cage of the skin of sharks was projected to the floor with the utmost violence and most alarming noises; and forth burst the dangerous creatures therein confined (whose commotion had so cast it down); and with prodigious bounds and extended jaws did they rush to the ten winds, till they fell exhausted and amazed before thy influence, O Vitree-oo-voos the Old! with the various editions of whose writings they severally came into collision where they lay. And at the same moment of time that most vile and treacherous creature the "Dividers,"—despite the command of the great lord and his brethren,—despite the solemn pledge of its magician master,—despite (with astonishment be it said) the pervading essence of all the editions of Vitree-oo-voos the Old in the perfumed chamber of Um-buggee,—did suddenly and recklessly rush in rage from the sacred table, to the utmost length of its chain, in full career towards the very seat of the great lord Stock-brickee on the throne of the delirious elephant with a thousand tails, set upon the ivory altar of Vitree-oo-voos the Old; and thence, being restrained by the chain, did fly furiously backward, O unhappy Bumble-bee! towards thee! and in its wrath, plunging into thine epigastrium its piercing talons with their most venomous stings, did so lacerate and drink up thy vitals, and poison thy poor bones, that thou didst fall down torpid in thy blood upon the marble floor of the perfumed chamber of Um-buggee! What followed let another tell; for thy spirit was now far away, with Vitree-oo-voos the Old!

The wicked necromancer loudly professed pretended grief, declaring upon his honour that it was entirely an accident, and that he was ashamed of his awkwardness; and he called for his dæmon, who forthwith appeared wild with drunkenness, and red hot as the tail of Mulciber.

But when the learned brethren of the seminary had every one fallen with his face to the floor, then did the great lord Stock-brickee descend from his throne and summon his attendants around him.

"Take up the virtuous Bumble-bee," said the great lord, "and lay him gently by the umbrageous source of the unknown river:" and it was done.

"Take up all the odious agents of the barbarian," continued the great lord, "and cast them into fire; and as for the wicked magician himself and his dæmon, bastinado them to the death, and bury them in silence and the ashes of their agents in the evil pit where the vipers are!"

But when the executioners, ten in number, advanced upon the barbarians and their engines and agents, the savage dæmon projected himself into his attitude as before, and, swearing by much that was evil and in tremendous tones, that his name was Corporal Timothee-o-Reillee, from the county of Cork, he scattered the ten executioners, every one maimed, to the ten winds; then bounding towards the great lord Stock-brickee like a drunken rhinoceros (if such a thing might be), he deliriously struck forth a furious blow into the very midst of that great lord, declaring that he would burst that great lord's boiler, and again in the twinkling of an eyelid smote the great lord's illustrious nose as the thunderbolt smites the rock!

Then fell down, like a star from heaven, the great lord Stock-brickee breathless upon the marble floor, for his spirit had left him; and sacred blood flowed from his nose to the steps of thine altar, O Vitree-oo-voos the Old!

And the brethren of the seminary every one arose; and he whose name is Donkee-doodle-doo, being the most aged and wise, came forward and cried out in tears, "O most malignant Jones! we will not further contend with thee; thy 'dividers' hath drunk the blood of the virtuous Bumble-bee; and thy most odious dæmon hath smitten to the torpor no other than this illustrious lord the chief priest and younger brother of Vitree-oo-voos the Old! what wouldest thou do more? Slay me where I stand, and depart in peace!" And the necromancer restrained his dæmon, else he would have slain him. "Take up thine engines and thy dæmonian things," continued he, "and their box, and thy wicked dæmon, and bring forth thy horses and thy three messengers, and depart all in peace; for it will long be remembered how thou hast brought the victory of Mulciber the Red-hot into the sacred seminary of Vitree-oo-voos the Old! Speak not another word (for the magician would have spoken), but begone in peace!"

Then did the dæmon laugh aloud till the liquor with which he was drunken ran out from his eyes; and the magician and he did gather together their engines and evil creatures, and did put them into their box, and did fasten down the lid thereof, and did deliver it unto the three messengers; and, bringing forth their horses, did mount upon them; and did so de-

part, with smoke-engines in their mouths and loud laughter on their wicked tongues!

The spirit of the great lord Stock-brickee, and the spirit of the librarian Bumble-bee, returned to them as before; but the visit of the barbarian necromancer and his dæmon to the sacred seminary of Vitree-oo-voos the Old, and the triumph of their master Mulciber, will never cease to be remembered and deplored!

K.

DIGGINGS IN CLAY.

THE CERAMIC ART.

A LECTURE delivered before the Literary and Scientific Society of Salisbury on porcelain and pottery, in course of last month, has been printed for private circulation, without the lecturer's name, but with the intimation that he was one of the jurors in Ceramic Art at the Great Exhibition, and that he has spent half a life in the collection of pottery. He is clearly an enthusiast in his subject, about which, as he tells us in this amateur effort, all his "thoughts are whirled like the potter's wheel." The lecture is an interesting one, though partaking a little of the "whirl" of an enthusiast's thoughts, and not very methodical. We shall take a flying glance through it, picking out any little promising nodule of superior clay which may come in our way, without any attempt to remould it into more orderly association of parts.

The materials we have to deal with are clay, flint, felspar, and kaolin, or decomposed felspar —the free gifts of nature—of no money value, and yet invaluable, and discovered on or near the surface. Cripples may form and fashion the clay; idiots be employed in its manufacture (purposely have been, in fact, to guard its secrets).

The ancient history of the art was rapidly passed over. Its existence is declared to be coeval with Paradise; and, at all events, the first book of "Chronicles" proves its extreme antiquity. The potters of Samos were celebrated in the times of Homer. Some have maintained that smelling-bottles, identical with those now (still?) manufactured by the Chinese have been discovered in tombs unopened since the days of the Pharaohs. It may not, perhaps, be too much to believe that the great sculptors of old, like Phidias and Myro, were co-operators with the potters of their day, encouraging them with their assistance, models, and designs, and thus lending immortality to their united efforts. Oriental China was introduced into Europe by the Portuguese in 1518. Princes and potentates were content with admiring the ingenuity of the East without imitating it, and it was nearly 200 years afterwards that the seed sown brought forth any fruit in Europe, and about 1706 that the first efforts of it were seen in Saxony.

The early history of the English potteries is a romantic one. The working of the clay was a secret there as at Dresden, sacredly guarded, and, for the sake of secrecy, idiots were employed. Astbury feigned the idiot to get admitted, and maintained that character while in the establishment for many years. He made from recollection notes of what took place, and drawings of the models and machinery used. The brothers Elers had brought the receipt with them from Germany. They lost it and fled, this time happily only to London, where they contributed to the foundation of the works of Chelsea, between the years 1720 and 1735. We must recollect what the Potteries then were: the population of a few straggling hamlets was, in 1738, 4,000; in 1838, 43,000. These poor potters are now among the mighty of the land. Minton, Copeland, Davenport employ about 1,000 hands each; Alcock, 500; Wedgewood, 50 plate-makers. In wages near 1,000*l.* per week are paid by the two first firms; and the statistics are every day more encouraging. Surely, if a plate could speak, and tell the history of its birth and education, its language would be universal. It is the personification and triumph of free trade. No prince or potentate could ever boast of more sponsors at the baptismal font. The clay of Devon, or the kaolin of Cornwall, is needed, though it be born in Staffordshire. Flints are brought from Kent to whiten the south-western clay; borax from Norway or Saxony arrives for the glazes: fashioned in clay, it is then fired (a process very often as dangerous and destructive as on the field of battle); it comes out of the furnace bisqued, and then it is printed; again it has to be fired to fix the print: afterwards it is glazed. So, having undergone six distinct processes (not to speak of gilding, if that be required), and having travelled from the distant provinces to the metropolis, it can be sold for as little as 3d.

In a paper just presented to the House of Commons of British manufactures exported from the United Kingdom to France, from 1848 to 1851, is this remarkable return.

Earthenware of all sorts:—

1848...	29,226 pieces...	value	£1,028.
1851...	296,871 „ ...	„	5,094.

This immense increase was the work of the Exhibition of 1851.

The lecturer properly urges the importance of connecting art and manufacture, and is anxious to induce artists of ability to design for China.

PROVINCIAL NEWS.

Yarmouth.—The disgraceful state of the Nelson Column here has at length forced itself into consideration so far, that a committee has been appointed to report on the best means of restoring its dilapidations. Better far to have, from the first, devoted it, as proposed, to the exclusive purposes of a lighthouse, useful to mariners, and symbolizing so bright a star as Nelson was, than thus to dishonour him by the neglectful dilapidation of a monument erected to his honour.

Stratford and West Ham.—The works connected with the formation of the Victoria Docks here are progressing, and during the ensuing six months the contractors will be put in possession of the whole of the land required.——It is computed, says the *Chelmsford Chronicle*, that the expense of carrying out a more extensive sewerage in the parish of West Ham will amount to no less a sum than 10,000*l.* It is proposed to extend the common sewer from West Ham to Orchard House, Blackwall, but the enormous expense it will incur is likely to delay the project for the present.

Banbury.—The consecration of Christ Church, Banbury, took place on Saturday week. The architect was Mr. B. Ferrey. On 18th November, 1851, the foundation-stone was laid by the Baroness North. The builder was Mr. Joseph Hope, of Oxford. The church consists of chancel, nave, aisles, and sacristy. Its length within the walls is 90 feet, width 57 feet. The west front, in South Broad-street, presents three gables. The tower is on the north side of the building, and is at present carried only to the height of the body of the church, and roofed over. The walls are of Bletchingdon stone, with freestone dressings. The windows of the nave and chancel are of five lights, with tracery: all the windows are Early Decorated, and filled with common glass. The aisles are divided from nave by arches supported by pillars alternately round and polygonal. The seats are low and open, and are of stained pine. The chancel and passages are floored with red and blue Staffordshire tiles. There are small galleries at the west end of the church.

Dover.—A groin at East Cliff, erected by Mr. C. Colyer at his own cost for retention of shingle in front of his property, to protect the latter, was carried away lately by the violence of the sea. Although the piling was imbedded in the rock, and firmly cemented, to a depth of 2 feet 5 inches, it did not prove effectual in resisting the force of the waves. The cost of putting down a groin of this nature is stated to be about 250*l.*

Wolverhampton.—Two stained glass memorial windows have been placed in the chancel of St. John's church, north and south of the communion-table. The "Six Acts of Mercy" are the subjects delineated,—three in each window. The representations are in the style of the middle ages, each forming a circular picture, the first being placed centrally above the other two, the spaces on each side of it being occupied by two angels with flowing scrolls. The windows were designed and executed by Wailes, of Newcastle-upon-Tyne.——The new market, according to the local *Chronicle*, was to be opened on 2nd inst. The market is in front of the Exchange, and is surrounded by four streets, giving approaches on all sides. The principal façades are in Exchange-street and North-street, the former of which is still unfinished. This front is composed of a central Doric portico of four columns, giving access to an internal portico, supported by sixteen. The front to North-street has in its centre a portico of the Corinthian order. The other two fronts are similar to each other, consisting of an arcade (which forms, as it were, the ground-work of the front designs) and rusticated arched entrances. The interior presents an open quadrangle of irregular figure, surrounded by a triple roof of cast-iron. The central compartment surrounding this covered area is entirely roofed with glass, each pane being upwards of 9 feet long. In the centre of the enclosed uncovered space is placed the fountain exhibited by the Coalbrook Dale Company at the Great Exhibition in 1851. It is raised on a pedestal 7 feet high, and it is intended to introduce four ornamental jets at the angles of the base. The whole will be surrounded by a basin 25 feet in diameter, supporting four ornamental gas pillars, composed of swans and bulrushes, according with the design of the fountain, which was partly modelled by Bell, the sculptor. The whole area circumscribed by the walls of the market is about 6,000 square yards, of which upwards of 4,500 are roofed over and fitted up for the despatch of business. The architect is Mr. G. T. Robinson. The office of clerk of the works and the arrangement of the fittings were entrusted to Mr. Lovatt. Messrs. G. and J. Lilley, of Measham, were the contractors.

Altrincham.—A system of pipe sewers with egg-shaped main, for this district, having been laid out by Mr. R. Rawlinson, as consulting engineer of the Local Board of Health, and the conditions of the Central Board having been assented to by the Local Board, the works have been contracted for at less than the estimated cost, viz. 2,000*l.* and are to be finished during the summer. Water-works, at high pressure, are also to be carried out at an estimated cost of 5,300*l.* The cost per house of both works is estimated at only 2½d. a week for thirty years, even on the present number of houses.

Bedford.—An estimate of the probable cost of a lunatic asylum for Bedfordshire, Hertfordshire, Huntingdonshire, and Cambridgeshire, has been made by Mr. Hill, the superintendent of the asylum at Clifton, near York. Mr. Hill estimates the cost of building an asylum for 400 patients, inclusive of fittings, machinery, apparatus for cooking, hot and cold water, and ventilation, at 29,610*l.*; one for 500 patients, at 34,713*l.*; and one for 600 patients, at 40,534*l.* This of course is exclusive of furniture, laying out grounds, &c. It is also exclusive of gas-works, entrance-lodge, farm buildings, chaplain's residence, &c.

Tamworth.—The parish church has undergone considerable repairs and improvements during the last few years. The restoration of the double spiral staircase, in the south-west angle, which, from the continual disintegration of the sandstone, had fallen greatly into decay, has since been followed by the renovation of the entire western face of the tower, which was not less dilapidated. A separate contribution was voluntarily made by the parishioners for the re-opening of the great west window, the tracery of which had been entirely destroyed, and the opening bricked up. The modern ringing-chamber has also been removed, and a roof of groined oak now springs from the stone corbels in the angles, at a height of about 50 feet from the ground. The tracery of a peculiar window in the east wall of the tower has thus been brought to light. A new clock, which chimes the quarters, has been erected in the middle chamber of the tower, the work of Mr. Dent. The staircase was restored by Mr. B. Ferrey, and the later works have been directed by Mr. G. G. Scott. Within the church itself, the erection of a reredos of Caen stone, from a design of Mr. Scott, has just been completed. The execution of the work, and its erection, were by Mr. John Philip, sculptor, of Regent's-park. A new font, of same material, and designed and executed by same architect and sculptor, has been placed in the nave, near the principal

entrance. Several family monuments have also been cleaned and restored, at private expense. The entire cost of the improvements, according to our authority, the *Staffordshire Advertiser*, has amounted to 755*l.* including 120*l.* for the new clock.

Leeds.—The Town Council have agreed to increase the outlay on the new Town Hall by 4,000*l.* which will make the total cost, with the land, nearly 49,000*l.*

Blackburn.—The Directors of the Local Waterworks Company, in reporting, at their half-yearly meeting, an increasing dividend of 6 per cent. free of income tax, state that during the last half-year they had laid down 1,070 yards of additional main pipes, making the total 24½ miles. The number now supplied with water was 7,419, an increase of 428 during the half-year, the gross rental of which was 3,519*l.* 14s. 4d.: the increase of rental had been 389*l.* 10s. 4d.

Newcastle-upon-Tyne.—The plans for the conversiou of the present eyesore, at the south end of the Newcastle Corn Exchange, into a beauty-spot, says the *Gateshead Observer*, "have this week had numerous inspectors in the Merchants' Court, and various have been the judgments pronounced. The council having left it pretty much to the architects themselves to decide what the building should be, the designs present a wondrous contrariety. You may select from amongst them a Christian church, a Grecian temple, a Mahometan temple, a Chinese pagoda, a palace, a theatre, a market-house, an arcade, a lock-up, or an *omnium gatherum*. There is a very good Grecian elevation; but is it not very ridiculous to propose the erection of long rows of handsome pillars, disclosing to the eye, immediately behind them, a blank wall?"

Forfar.—The sphinxes placed at the sides of the Peel monument here have been removed, and trusses put up. There is some talk of placing the rejected sphinxes on the top of the Academy buildings. The bust of Sir Robert is now ready, and will be placed on the pedestal shortly. The bust has been executed by Mr. Anderson, of Perth, sculptor.

Glasgow.—The new "Evangelical Union" chapel, in Dundas-street, of this city, was opened on 6th ult. The architect is Mr. Burnet, of Glasgow. The edifice is of the old Scotch Gothic style, adapted from the baronial to ecclesiastical purposes. It is seated for more than 1,100 individuals.

Dumbarton.—Arrangements are in progress for the immediate erection here of 200 dwelling-houses, capable of affording comfortable accommodation to an equal number of families, or 1,000 individuals. In addition to the above, Mr. Alex. Denny is about to put up fifteen workmen's houses, of a commodious description, which will be ready by Whitsunday, making upwards of fifty constructed by him within sixteen months. Altogether, there will be about 400 new dwelling-houses provided for the public of the town.

Guernsey.—The sample-wall, says the *Guernsey Comet*, which has been built under the direction of Mr. W. Gullette, of London, and which is designed to serve as a guide to the future contractors of the new harbour-works, is nearly completed. The masonry is random rubble, with binders, which saves much labour, and employs a large quantity of stone from the quarries, which would be useless were the work of a different description. The Messrs. Tostevin have erected the wall in question.

CAMBRIDGE ARCHITECTURAL SOCIETY.—On February 23rd the second meeting of this society for the Lent Term was held at the society's rooms. The Rev. T. S. Woollaston, M.A. of St. Peter's College, laid before the meeting the drawings for the proposed new fittings in St. Edward's Church. The estimated expense was stated to be 600*l.* of which 300*l.* has been already collected. Mr. H. T. Braithwaite, of Clare-hall, then read a paper on "Æsthetics in the Church." Its object was to justify the introduction of the arts into worship, and to point out how, and in what manner, they may best be rendered available for that purpose. He insisted strongly on the proper deference to be paid to the temper of the times, and on the study of architecture as a whole, not with partial views; supporting his arguments by reference to the arts of sculpture, painting, and music.

THE SEPULCHRE AT ALBERT GATE, KNIGHTSBRIDGE.

WILL you allow me a brief space in your valuable columns for the purpose of calling the attention of the authorities to the living sepulchre called a "Lodge," at Albert Gate, Knightsbridge. This "architectural beauty" is below the level of the park, and here a gatekeeper and his wife have to live and sleep. Within a period of eight years, two of its inmates have met their deaths, from diseases arising from its unwholsomeness and dampness, and its present occupants are, to all appearances, suffering like their predecessors.

What makes this piece of refined cruelty the more wanton, is the fact that it is carried out merely that Mr. Hudson's dining-room windows should have an uninterrupted view of the park. Surely, sir, our public places are not to be disfigured, or the public's servants consigned to living tombs like this lodge, for the sake of gratifying one person, however potent he may be; and it says but little for sanitary progress, or architectural improvements, that the Woods and Forests should suffer such a contrast as this dungeon to Prince Albert's Model Lodging-houses, erected at the next gate, to exist.

RUBY.

THE LATE ACCIDENT ON THE GREAT WESTERN.

ON Saturday, in last week, an inquest was held on the body of Mr. James Gibbs, of Clifton Park, Bristol, one of the directors of the Great Western Railway, who was killed near Ealing by the overturning of a first-class carriage in which he sat. The evidence as to the cause of the accident was very unsatisfactory. The coroner could not specify any special cause at all, nor could any remedy be suggested. The jury returned a verdict of "Accidental death." The deceased, Mr. Gibbs, it is stated in the *Bristol Times*, was the first person—out of the vestry—who subscribed to the restoration of St. Mary, Redcliff. He was then mayor, and the moment a deputation waited on him he put his name down for 100*l.* heading the list. Some twelve months or so subsequently, meeting Mr. Proctor, and referring to the work, he observed that he feared it would be long about, and would entail a great deal of trouble on those who took an active interest in the matter. He then added, "Could you not get forty persons to subscribe a thousand pounds each to the work, and have it done in our own time, without waiting for the slow process of small contributions? I should be most happy to be one for a thousand." This liberal offer, in making which Mr. Gibbs was solely actuated by principle, was discussed by a few of the vestry, and it was thought unadvisable just then to publish it with a view of carrying out the proposed plan. They thanked him, as he deserved, for his generosity, and said they would reserve to themselves the privilege of perhaps one day acting upon it. Mr. Gibbs said he was quite willing and ready to do at any time what he had said: about twelve months since, six or seven years having elapsed since his offer, he again spoke to Mr. Proctor, and inquired if they were yet prepared to accept it.

THE METROPOLITAN SANITARY ASSOCIATION.

AT a meeting held at the residence of Viscount Ebrington on the 12th ult. consisting of members of the acting committee of this association and other friends of sanitary reform, amongst whom were the Bishop of London, the Earl of Harrowby, the Marquis of Blandford, Lord R. Grosvenor, Sir Edward Buxton, bart.; Mr. Samuel Gurney, Col. Thompson, M.P.; Col. Sykes, F.R.S.; Mr. Monkton Milnes, M.P.; and others, it was determined to make efforts to relieve the association from pressing demands, and to raise money to prosecute its object during the current year.

This society has long been trammelled by debts contracted injudiciously at starting. A slight effort now on the part of the friends of sanitary reform will put it on a right footing, and enable it to aid vigorously the great object it has in view.

THE NAPOLEON CIRCUS, PARIS.

THE sectional view of the interior of the Napoleon Circus, on the next page, will serve in conjunction with the plan, view, &c. before given,* fully to illustrate the structure. The total cost, although not yet exactly known, may be called 26,000*l.*

The cost of the objects of art introduced, and the decoration generally, we will give more in detail, as affording useful material for comparison:—

The twenty paintings, forming the great frieze of the interior	£480
The decorative painting of ceiling, &c.	320
The thirteen bas-reliefs, forming the frieze on the exterior. The composition, model, and one cast in plaster† (60*l.* ea.)	780
The two equestrian groups, rather larger than nature. The model, one cast in plaster, and the casting in iron	460
The eagles, garlands, &c.	40
The capitals, mouldings, &c. in *Carton pierre*, and plaster	720
The ornaments in stamped copper, gilt, mainly in the ceiling	720
Making a total of	£3,520

The whole design shows most careful study, and the roof is a singularly clever piece of construction. In arranging this, M. Hittorff's desire was to construct a cover, so to speak, of a single piece, which, like the top of a cistern, or other polygonal vessel, should exert upon the walls only a vertical pressure. The trussed beam seen in the section (firmly bound with iron at each upright in the beam) occurs at each angle of the building (twenty in number), and rests on a continuous curb securely bound round its whole circumference with iron. These ribs are secured to each other by trussed beams, and the whole forms, as we have said, one rigid cover, without any horizontal tie.

We have before us the drawings in detail of this roof, and may find an opportunity hereafter to give our readers the advantage of them.

The pedestals, columns, entablature, and dressings generally, are of worked stone. The walls between are of rough stone. The roof is covered with zinc.

PROGRESS OF BATHS AND WASH-HOUSES.

A STATEMENT forwarded to us by the Committee for Promoting the Establishment of Baths and Wash-houses for the Labouring Classes, gives the following return for the year ended Christmas 1852:—

From the Metropolis:—

Name.	Receipts.
The Model, Whitechapel	£2,892 1 7
St. Martin-in-the-Fields	3,654 7 1
St. Marylebone	2,530 18 5
St. Margaret and St. John, Westminster	1,893 8 5
Greenwich	1,024 2 8
St. James, Westminster (Opened June 12)	1,003 10 3
Poplar (Opened July 19)	424 18 9
Total	£13,413 7 2

From the country:—

Liverpool— ‡Cornwallis-street Paul-street	£1,598 13 2 720 3 11
Hull	677 19 10
Bristol	597 18 7
Preston	395 9 5
Birmingham	1,508 5 9
Maidstone (Opened May 24)	276 0 8

There was an increase in 1852, in London, over the corresponding period of 1848, of 751,526 bathers, and 197,580 washers, and an aggregate in five years of more than 3,100,000 bathers and washers.

The aggregate amount of the bathing and washing accommodation in London, including the building (in Bloomsbury) now in progress, is 610 private baths, 13 plunging baths, and 565 compartments for washers.

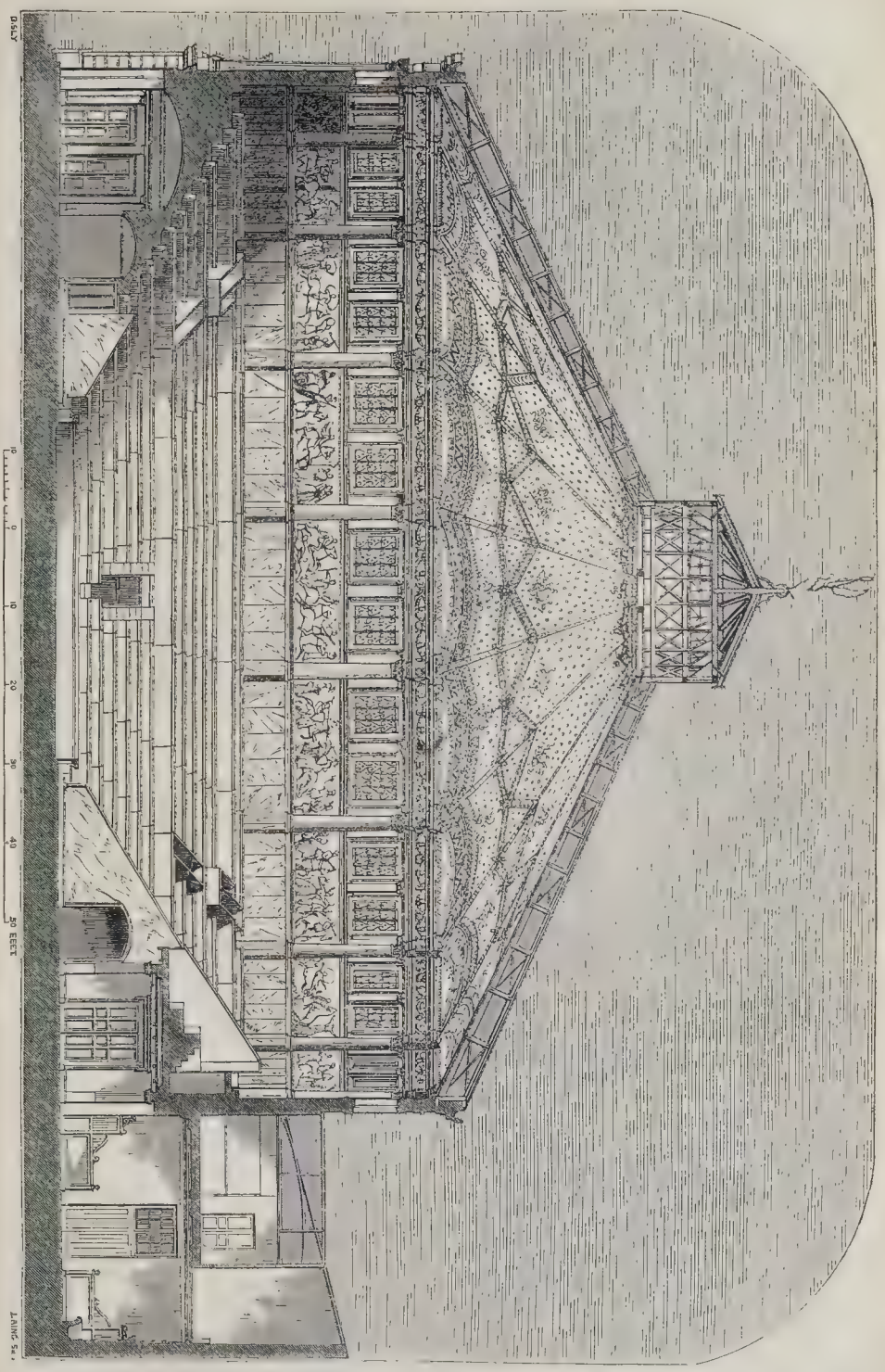
THE DESIGNS FOR THE PORTER MONUMENT.—A model sent in by Mr. E. W. Wyon has been selected from among the designs sent in to the committee for raising a monument in Rusthall churchyard to the memory of the late Mr. George Richardson Porter, of the Board of Trade.

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* See p. 103, & p. 104, *ante*.

† Seven of the spaces at the back do not contain bas reliefs.

‡ The wash-houses at the Cornwallis-street establishment are not yet completed.



INTERIOR OF THE NAPOLEON CIRCUS, PARIS.—M. HITTORFF, ARCHITECT.

SOUTHAMPTON IMPROVEMENT COMPETITION.

We are told that a case of some importance to professional readers is likely to occupy the attention of the law court of Southampton. In July 1851, the council of that ancient borough determined on laying out the public lands, which have hitherto been kept in a very disgraceful state. In order to procure a design they called the local architects and landscape gardeners together, and laid before them certain resolutions which were to be strictly adhered to in the competition that was to take place. Each competitor was warned that his plan must be prepared in direct conformity to the Marsh Improvement Act, and attention was particularly directed to certain clauses in that Act; one of such clauses being, that no buildings whatever, except a lodge, and that only 15 feet high, was ever to be erected on the public land.

The Marsh Improvement Act was obtained to enable the town to dispose of a portion of marshy land considered as useless for public recreation, and to dispose of the proceeds in adding to the appearance and comfort of the other lands which were to be for ever kept open for the use of every inhabitant.

The wording of the resolution and the selection of the plans were entrusted by the council to a committee of their body, called the Marsh Improvement Committee, to whom Mr. Guillaume was the surveyor, who assisted in drawing up these resolutions, and he furnished the competitors with the plans of the ground. According to our informant the committee took nearly eighteen months to consider their verdict, and then announced that they had given the first premium to the committee's surveyor, the second to Mr. Elliott.

Complaints are made to us that when the plans were exhibited it appeared the first design contained as its leading feature a domed conservatory about 100 feet in diameter as well as other buildings.

When the town-clerk sent round the resolution, he at the same time sent each competitor the following letter:—"Herewith I beg to enclose a tracing of the common lands intended to be improved, and also the particulars *agreed* to by the Marsh Improvement Committee." The selected design, it is said, sets the resolutions agreed to by the committee at defiance. Feeling this to be an injustice, and failing in obtaining even a consideration of the case, Mr. Rogers, one of the competitors, has sent in to the council, through his attorney, a demand for payment for the design submitted.

GAS.

The Liverpool United Gas Company have just been reaping the rich benefits now yearly deriveable from the reduced prices to which they were most reluctantly compelled, some years since, to come, after repeated protests on their part that such prices would ruin them, and, indeed, were utterly impracticable. At their half-yearly ordinary meeting, held on Tuesday week, the chairman said it gave him great pleasure to report the prosperous state of their affairs; and the report stated that the directors felt themselves fully justified in recommending the proprietors to declare a dividend at the rate of 5*l.* per cent. for the last half-year on the consolidated stock of the company paid up but not yet converted into stock; and 2s. 6d. per share on each of the 25*l.* A shares, on which a call of 2*l.* 10s. per share had been made. There had been a progressive increase in the business of the company during the last half-year. Mr. Radley, of the Adelphi Hotel, asked what prospect there was of the gas being [still farther] reduced in price. The chairman thought there was every prospect: they were rapidly progressing to that point, and at the first opportunity they should do it. Nevertheless they are rather long about it.——"The movement now going on at most of our provincial towns for the reduction of the price of gas," says a local paper, "is not without its effects in Thorne. The gas company last week agreed to lower this article from 10s. to 7s. 6d. per thousand cubic feet. It is to be hoped that this liberal reduction will meet with an equivalent response from the inhabitants by an increase in the consumption, especially as it is understood that the undertaking has hitherto yielded a very small return [and as small wonder] to the shareholder. The price is sadly too high compared with other places. As to the more humble inhabitants, what with the price of fittings and the wear and tear, we are afraid that they will not be enabled to participate in the reduction to such an extent as they might wish." As we have repeatedly pointed out, both landlords and gas companies would find it vastly to their benefit were they between them to relieve the inhabitants of towns entirely of such charges, at least in private dwellings,—as is already done, indeed, in some towns throughout the country.——At Perth the rival gas companies have each reduced the price of gas to consumers. The Old, or Perth Gaslight Company, reduced it from 7s. per 1,000 cubic feet to 5s. 10d. with a graduating discount on accounts above 2*l.* The New Gas Company have reduced their gas to 6s. per 1,000 cubic feet, and on same conditions as the rival company. ——The Newbury and Speenhamland Gas Company, at their fifth annual meeting lately, divided five per cent. profit on their business.——The inhabitants of Sutton Coldfield have resolved to establish a gas company for their town, with a capital of 2,500*l.* in shares of 10*l.* each. Nearly 2,000*l.* of the capital have already been secured.——The Doncaster Gas Company, we hear, have agreed to supply the Great Northern Railway plant there with their gas at 2s. 6d. a thousand cubic feet. It is said to be from consideration of the large quantity to be used that the price is so low,—a hint to *smaller* consumers, who have only to *combine* into one large or efficient demand on their gas companies in order to have their gas at a moderate rate. At all events, they may calculate the per centage on such a price as 2s. 6d. requisite and sufficient to cover additional risk or trouble in collecting smaller accounts: we scarcely think that *cent. per cent.* would be requisite, though in most cases it will be found that even that is not the limit. But the fact is, it is not the diminution of risk and trouble that enables a gas company to lower their demands on powerful companies so vastly as they often do: it is the fear of being superseded altogether by such a company manufacturing their own gas. We do not refer to the Doncaster Gas Company in particular, at the present moment, but to the general practice, and the true cause which generally induces gas companies to come to reasonable terms with powerful companies. ——The Wigan Gas Company have determined to greatly enlarge their present works. They have three gasometers capable of holding 80,000 cubic feet each, and a new one is to be made to be capable of holding 250,000 feet.——The old gas company at Perth have announced their intention of reducing the price of their gas from 7s. to 5s. 10d. "with an allowance to large consumers." The new company had just before announced a reduction from 7s. to 6s. ——The *North British Mail*, while complaining of the impurity of gas from the poisonous sulphuretted hydrogen, advises gas consumers to test their gas by dissolving sugar of lead in water, dipping paper in that, and then using this paper as a test by holding it in the stream of gas before it is lit. In such a case if the gas be contaminated with sulphuretted hydrogen, the paper will become quite brown, and it may then be certainly concluded, and as confidently represented to the gas companies supplying such gas, that, either from neglect or niggardliness, there is not enough of lime made use of in their purifiers, and that this is all that is required to be seen to in order to insure the purity of the gas from so poisonous a contamination. As well remarked by the *Mail*, it is not such poisonous gas as this that the public contract for. They ought, therefore, to resist payment till supplied with pure gas, whatever be the price.

A PAINTER'S CONTRACT.

A CURIOUS CASE.

In the Lambeth County Court, an action was brought by a painter named Smith against a house-owner, named M'Pherson. The sum sought to be recovered was 20*l.* under novel circumstances. The plaintiff stated that he had entered into a contract with the defendant to keep in repair four houses. The contract was for seven years, and bound him to paint the houses twice during that period, the first painting to be executed at the expiration of the first year, and the second painting to be performed at the end of the contract. He was also to keep the house in repair, and for which he was to receive five pounds per year for each of the four houses. When the first year of the contract expired, he sent in his bill of 20*l.* when defendant said that he should not think of paying him until the expiration of the contract—at the end of the seven years,—urging, that if he did so, he should have no security that he (the plaintiff) would paint the houses, which was the chief feature in his (defendant's) favour. It was in vain that he assured Mr. M'Pherson that his circumstances would not permit him to give seven years' credit; for defendant said, "Look to the bond." Thinking if he gave the houses a coat of paint, the defendant would soften down, he did so when defendant ordered him never to enter his houses again, and he now sued for the moiety of the contract.

By Mr. W. B. Davies.—When I was painting the houses I used what colours I thought proper. Painted one house black and another red. The contract did not specify that I was to paint the houses white. It was left to my taste (laughter). Black paint is not often used for painting houses throughout. It had a sombre tone (laughter): red colour gave a warm tone. It was a contrast, and according to his fancy. There was no other colour used. A rough painting of a funeral procession might have been executed upon the panels of the first-floor bed-room (laughter).

Mr. W. B. Davies said the plaintiff, because he found that his client would not pay him before the expiration of the contract, had adopted a most mischievous and disgraceful mode of putting an end to the contract. The court might fancy the horror of living in a house as black as darkness, but they could not conceive the expense and trouble of making a black house a lively white. All the black paint had to be burnt off, and the expense incurred by defendant in repainting had been over 20*l.* The contract set out that plaintiff was to leave the houses in the same state as he found them: this clause was sufficient to show that plaintiff had no right to frightfully disfigure them. He urged that plaintiff had put an end to the contract, and that defendant had a perfect right to forbid him entering his houses. Witnesses were called to depose to the expenses of repainting the black house: the red one appeared to be of some service.

The Judge said he thought the defendant had taken a cruel advantage of the plaintiff's ignorance, for he could not have supposed a little tradesman like plaintiff could give credit for 140*l.* and wait seven years for it. On the other hand the plaintiff had acted very wrong in painting the house black. He could not, in the face of the agreement, give a verdict for the plaintiff, but he should not allow defendant his costs.—Judgment for defendant.

Notices of Books.

Science versus *Sewers*. By an Engineer. London: Gilbert.

The author of the eight pages published under this title, struck by the simplicity, regularity, and economy with which large towns are supplied with water by means of the steam-engine, which pumps it to the place where it is wanted, says, why not in like manner pump filth away? Pump it away, we should say, by all means, when you cannot get rid of it as effectually by cheaper means; but take care where you pump it to. Our author will not aid you much here, for his proposition, seriously made, is to *discharge it into covered barges*, provided for its reception. These barges are each to be provided with a pump, and are to be met at suitable stations by land vehicles, into which the sewage is to be transferred and conveyed at once to the land as manure. He amusingly states as amongst the advantages of this arrangement, that "nightmen" would be rendered unnecessary, and that the atmosphere, which is now at times made insupportable by their operations, would be comparatively pure and breathable.

We take for granted that he has not calculated the number of "covered barges" that would be required for London, especially when there was no demand for the article, which would, of course, be the case during a great part of the year, and *might* be always. France would certainly protest against such an increase in our shipping!

The Roman Wall; a historical and topographical Description of the Barrier of the lower Isthmus extending from the Tyne and the Solway. By the Rev. John Collingwood Bruce, M.A. Second and enlarged Edition. John Russell Smith, Soho-square, London. 1853.

Hadrian, the Builder of the Roman Wall. By the same Author. J. R. Smith, Soho-square. 1853.

The remains of the great wall in the north are much more extensive and obvious than is generally imagined; and it has been a labour of love with Mr. Bruce, who is one of the council of the Newcastle Society of Antiquaries, to collect and publish all that is authentic and interesting as to it. His volume is largely illustrated by woodcuts and plates from original drawings taken on the spot, and the author's account of the wall is mainly deduced from numerous personal surveys. The second title above given is that of an appendix, containing a paper read at the monthly meeting of the

Society of Antiquaries at Newcastle-upon-Tyne on 4th August, 1852, in reply to "The Roman Wall: an Attempt to substantiate the Claims of Severus to the Authorship of the Roman Wall; by Robert Bell." It also contains some illustrations given in support of Mr. Bruce's defence of Hadrian as the builder of the wall. The rev. gentleman is an able writer.

A Summary of the Law of Patents, and of Extension of Patents; with Forms and all the Statutes. By Charles Wordsworth, Esq. Barrister-at-Law. London: Benning and Co. 1853.

In small compass Mr. Wordsworth has here given a summary of information as to—who may obtain a patent—for what a patent may be obtained—how to obtain it—form and operation of patent—licenses—specification—disclaimers and caveats—infringement, costs, injunction—patent, how avoided—*scire facias*—register of patents and of proprietors—prolongation of patents—confirmation—together with an appendix of statutes and forms and a table of cases. The whole constitutes a cheap and useful little volume, which will doubtless have a portion of that patronage among patentees and inventors, which, however, it must share with more than one competitor.

Official, Descriptive, and Illustrated Catalogue of the Great Exhibition of the Works of Industry of all Nations, 1851. By authority of the Royal Commission. Supplementary volume. London: Spicer, Brothers, and W. Clowes and Son.

The present supplementary volume need not be described at any length, considering that it is simply a continuation and completion of a valuable work which has already had a full notice in the *Builder*. As an *addendum* to the three volumes already published, the present must of course be had by all who wish to keep a complete record of the Great Exhibition. It contains the two reports of the Royal Commission *in extenso*, with all their appendices, itself an immense mass of valuable matter, which fills about one-half of the volume. The other half is devoted to some of the more dilatory contributions from exhibitors throughout the United Kingdom, India, and foreign States, with many engravings. The work as a whole is of universal interest and enduring value.

Miscellanea.

Wimborne Minster.—The east end of this fine old minster is so built up to that it is almost impossible to obtain a view of the beautiful triplet of the chancel. This window, simple enough externally, is almost unique in its internal arrangement. A number of bold mouldings, springing from light columns, form a trefoliated head, the upper part of which embraces the quatrefoil seen on the outside. The central tower is Late Norman, having interlacing arches running round it. The work above this arcade is quite a recent addition: it was added for the purpose of making good the one damaged by the fall of a broach spire which formerly surmounted this tower. The western tower and walls of the nave are Late Perpendicular. The choir retains its Early Decorated character: it is the purest part of the building. There is a fine crypt under the eastern part of it. The stalls are Jacobean—good of their date. High and unsightly pews block up the nave, and galleries encumber the transepts. These should be removed, to give due effect to the building: indeed, the whole church requires a judicious restoration. There lie the remains of St. Ethelred, beneath a brass made up from one of the fourteenth century; and also those of the pious Margaret, Countess of Richmond, who, amongst her numerous benefactions, contributed towards the charities of this town.—R. P. P.

Essex Archæological Society.—Colchester section.—On Friday in last week, the first quarterly meeting of this society was held at the Literary Institution, Colchester. Mr. John Taylor, jun. read a paper upon the discoveries at West-lodge, Lexden-road; and the Rev. E. L. Cutts followed with one on the defensive armour worn during the Middle Ages.

Architects' Benevolent Society.—The annual general meeting of this society is fixed to be held at the rooms of the Royal Institute of British Architects, on Wednesday, the 9th inst. to receive the report from the council, elect officers and council for the year, and for the general purposes of the society.

The Metal Trades.—Plates, bars, and rails are now beginning to follow the downward progress of pigs, which latter have also been on the decline in Staffordshire and Shropshire as well as in Scotland and Wales. The reduction, as usual, is attributed to the "small masters," whom, however, the great ones will probably be found shortly to follow. A reduction of 30s. a ton has taken place in the price of cut nails. "It is stated," says a Birmingham correspondent of the *Times*, "that the late speculations in pig iron, and which had the effect of raising the market in so extraordinary a degree, were transacted chiefly by bills, and not in cash, and these bills having (or about) become due, large quantities of iron are necessarily thrown upon the market." At the recent meeting of the Midland Railway Company at Derby, Mr. Ellis disclosed the fact that the directors had contracted for laying down heavier rails upon their entire line, not at the present advanced price (say, in so heavy a contract, 10*l.* 10s. or 11*l.* 11s.), but at the old rate of 6*l.* 10s. per ton. There are many other similar contracts, it is said, but not to the same extent, in course of execution in these districts, as well as in Wales and Scotland. Copper is at a standstill for the present at an advance of cent. per cent. Large offers of Russian copper have been made to some of the leading manufacturers: supplies may therefore be expected as soon as the navigation of the Russian seas and rivers is open. The effects of the present high price of copper, according to the *Times*, are beginning to be seriously felt by the Birmingham manufacturers. It is much feared that injury, more especially to the working classes, will be the consequence. Timely arrivals from Russia may possibly avert the results now anticipated. The metal-rollers have advanced their charges for rolling. Tin has advanced to 118*l.* per ton.

Alnwick Scientific and Mechanics' Institute.—On Tuesday in last week a *soirée* on a great scale was held in the Theatre at Alnwick, in aid of this institution. Between 600 and 700 ladies and gentlemen were present. Earl Grey, who occupied the chair, delivered a very interesting and appropriate address, after which no less than four lectures and a subsequent address were announced for delivery, and the four lectures were actually given, but the address was—fortunately, we should think—postponed. As it was, any one of the four lectures delivered ought to have sufficed, after the address by the chairman. The first was on "Meteorology, Clouds, and Poets," by Mr. R. Rawlinson, C.E.; the second on "The Natural History of Coal," by Mr. G. Tate; the third on "The Character and Writings of Addison," by Mr. P. Selby; and the fourth on "Plants, and their Poetical Associations," by Mr. R. Embleton. The entertainment was (of course) protracted to a late hour.

The Moustache for the Masons.—It may be recollected that in an article on the Masons of Edinburgh, quoted by us from the local *News*, the masons were recommended, on the score of health, to wear the moustache as a preventive to breathing the fine dust which so much injures the working mason and shortens his life. The recommendation was given by a grave professor at Edinburgh,—Dr. Alison, who would be the last, it is said, to countenance anything like puppyism—or continentalism shall we call it—on the part of our operatives. The practice of wearing the moustache, and even the imperial, is an old British one, as every one knows; but it is really from knowing its beneficial influence in lengthening the lives and protecting the health of German, French, and other continental masons that its revival in this country is advised; and the recommendation, we see, from the *Glasgow Reformers' Gazette*, is now being carried out by the Glasgow masons. That scamps as well as puppies wear an appendage useful to a workman is no reason why he should not wear it.

Destruction of Doncaster Church.—On Monday last the fine old parish church of Doncaster, (St. George's), was totally destroyed by fire, originating, it is believed, in overheated flues. The loss is vaguely estimated at 100,000*l.* and is not covered by any insurance. The west window had been lately filled with stained glass, as a memorial of the late Sir William Cooke, at a cost of 700*l.* The window at the east end of the chancel was filled with stained glass towards the end of last century, at a cost, it is said, of 1,000 guineas. Three smaller chancel windows lately completed cost 400*l.* Knowing the continual risk of fire, especially in flue-heated churches, we do think that churchwardens are most culpable in neglecting to insure such valuable property.

Royal Porcelain Collections.—In order that the instruction which the public were deriving from the inspection of the Queen's porcelain at Marlborough House might not be interrupted, her Majesty has been pleased to permit a second series of specimens to be made from the collections at Buckingham Palace, and exhibited at Marlborough House. This series is more numerous and varied than that recently removed. It consists chiefly of Old Indian of the highest order, and of an extensive series of Sevres, illustrating the styles of different epochs of that royal manufactory: among them will be found a curious *déjeûner* service, produced immediately after Napoleon's expedition to Egypt, in which the fitness of porcelain decoration is altogether sacrified to an affectation of forms and ornaments belonging to the age of the Pharaohs; also some very fine jewelled cups, and a superb bowl of hard porcelain which was executed expressly for Louis Seize.

Bridge on Dredge's Principle at Bothwell.—A suspension bridge has been erected at the rural village of Bothwell on the Clyde. It crosses on the site of the old ferry, and at a considerable elevation, approached by a new road on the level of the bridge-way, lessening the distance between Bothwell and the railway station at Blantyre. The work has been done at the cost of Messrs. H. Monteith and Co. proprietors of the Blantyre Works. The dimensions of the bridge are as follows:—273 feet span; entire length, 415 feet; breadth of platform, 7½ feet. It is constructed of malleable iron, with the exception of four cast-iron columns, 33 feet high, which, with a basement of rustic stonework, form the pier upon either bank of the river, and the entire weight of metal does not exceed 50 tons. The suspension-rods are only ¾ inch diameter, of the aggregate weight of 13 tons, and yet their ultimate sustaining power is calculated at nine times the weight of the platform when crowded with 1,250 persons. The iron-work of the bridge was, with the exception of the columns, entirely executed in a temporary smithy erected for the purpose; while the roadway was carried across the river without scaffolding, by means of block and tackle, and the basis for operation afforded by the progress of suspension itself from either side of the river. This bridge is, we believe, the seventieth constructed upon Dredge's patent. In consequence of the erection of the bridge at Bothwell, a stimulus has been imparted to the village. Operations are already in progress for the erection of a church in connection with the United Presbyterian body. Several new cottages have recently been erected; and a crescent of detached villas is projected on grounds contiguous to the new bridge.

Celtic Monuments: Society of Antiquaries.—On Thursday, in last week, an interesting paper was read at the Society of Antiquaries, Somerset House, by Mr. F. C. Luki, M.D. on Celtic and Transition Monuments, illustrated by a large number of drawings. He divided the Celtic Megaliths into those on plains more or less extensive, and those commonly on hills and elevated sites. The former he ranged under the head of Monolith, Ortholith, Parallelith, and Cycolith; and the latter, entirely sepulchral, under the head of Demi-dolmen, Dolmen, Cist-Vaen, Cromlech, and Peristalith. The Pseudo-Celtic, or Transition monuments, he ranked as Megalithic, Tumular, Microlithic, and Natural Rock, instancing Stonehenge as a Cyclotrilith under the first head. He considered Stonehenge was of two dates, and never finished.

Coast Defences.—There is to be a general brushing up, repair, and improvement of the national coast defences. Forts, magazines, barracks, and other works at Portsmouth, Dover, Portland, Plymouth, Milford Haven, Liverpool, Sheerness, Isle of Wight, &c. are to be repaired or built. The Channel Island defences also are to be strengthened, as well as those of Gibraltar, Malta, Mauritius, Halifax, &c. New barracks are to be built at Kensington, and various other works, such as drainage, hospitals, storehouses, &c. are to be seen to.

The Glass Trade.—At a conference of the flint-glass manufacturers, held at Birmingham last week (according to a circular issued by Messrs. Harris and Son), it was resolved that an advance of not less than 10 per cent. should be made on the present selling prices of plain, coloured, and cut glass, without reference to a general list of prices. This rise is attributed to late advances in fuel and other materials consumed in the manufacture of glass. Even the sand, which forms so large an ingredient in the composition of glass, has also advanced in price.

Artificial Malachite.—When a solution of sulphate of copper is precipitated in the cold by carbonate of soda or potash, the precipitate is at first voluminous, and of a blue colour, but left for awhile and then washed, it becomes more dense and of a green colour, and has the composition of green malachite as found in nature. A sort of malachite, it is also said, may be obtained by the re-action of coarse porous limestone on a solution of nitrate of silver, marking twelve or fifteen degrees, and, when the action ceases, by plunging the mass into a solution of an alkaline bi-carbonate, marking five or six degrees. The piece of limestone in the first case becomes covered with sub-acetate of copper, and this sub-acetate, in the next step, changes to malachite; or, if prolonged, to a double carbonate of copper and soda. The malachite is in small silky globules.

ENGINEER'S EMPLOYMENT BY IRON MANUFACTURER.—An action, Parsons *v.* Milburn, was tried in the Court of Queen's Bench on the 24th ult. before Lord Campbell and a common jury, at Nisi Prius. The plaintiff in this action was an engineer, and the defendant was a manufacturer of iron. The action was brought to recover 92*l.* 16*s.* for work done for defendant in altering and fixing an iron roof. Defendant pleaded the general issue, and also a set-off. It appeared that in 1850 defendant had engaged to supply the iron work necessary for a large sugar-bakehouse in Goodman's-fields. Plaintiff had been employed by Mr. Burton, the builder, to test some portion of the iron work, and he was still employed at the commencement of 1851, when defendant had completed the erection of the roof of the "lump-house," which, it was alleged, was so defective as to require considerable alterations. These were made by plaintiff, as he alleged, on defendant's orders; but, according to defendant, the builder was the responsible party. Plaintiff was also employed by defendant to put up the main roof, and the roof of the "clearing-house," but when the materials were sent up from Staffordshire, it was found that the parts would not fit, and it became necessary for plaintiff to have them altered. It had been agreed that the roof should be erected at the rate of 2*l.* 10*s.* per ton; but when the parts could not be adapted, which defendant attributed to a defect in the drawings, it was arranged, according to plaintiff's evidence, that plaintiff should keep an account of the men's time, and that defendant would pay a reasonable sum for the work. Defendant's right to set off 10*l.* for goods sold was admitted. The defence was, that defendant gave no orders about the alterations to be made in the "lump-house;" that there had been an agreement to do the work for 2*l.* 10*s.* per ton; and that defendant was entitled to set off not only 10*l.* for goods to plaintiff, but also 40*l.* in respect of a bill of exchange which plaintiff had drawn upon Mr. Burton, and, when accepted, endorsed to defendant. This bill was dishonoured, and Burton had since become bankrupt. Defendant admitted that plaintiff had required to be paid an additional price for extra labour, and that, upon that request being made, he, the defendant, remained silent. Plaintiff's counsel, in reply, said he was willing to allow defendant's set-off in respect of the bill, provided he would give it up to the plaintiff. This was finally agreed to, and a verdict taken for the plaintiff for 42*l.*

TENDERS

For building the Goldsmiths' and Jewellers' Annuity Institution Asylum, South Hackney. Mr. W. P. Griffith, Architect. The quantities furnished by Mr. C. B. Arding.

Richards, J. and Son	£2,396 0 0
Hayne	2,178 10 0
Arding and Son	2,168 0 0
Lee	2,064 0 0
Norris	2,033 0 0
Notley	1,990 0 0
Lawrence and Sons	1,933 0 0
Gadsby	1,927 0 0
Patience	1,910 0 0
Pritchard, H. and Son	1,880 10 0
Fowler	1,846 0 0
Coleman	1,790 0 0
Macey	1,780 0 0
Cooper	1,722 3 9
Perry (accepted)	1,667 0 0

For church at Bodles-street Green, Sussex. Mr. R. M. Hawkins, architect. Quantities not furnished.

Myers	£1,956
Edward Carter	1,933
White	1,441

TO CORRESPONDENTS.

"Lowestoft Church" (we have received four contradictory statements, and must wait). "I. C." ("Clear—Story" gives best idea of its derivation), "J. P." (Wren did not visit Rome), "W. H. M.," "T. B.," "W. S.," "A. K.," "Major A.," "J. R. W.," "Metropolitan Improvement," "H. C. P.," "A. U. T.," "J. T.," "A. P. H.," "A Subscriber," "Inquirer," "C. G.," "E. W. T.," J. M." (too late for examination this week), "W. B against our custom), "W. A.," "J. B.," "C. G." (apply to Sanitary Association), "E. C. S." (a soft pewter is sometimes used, rubbed down to face of stone), "W. H. C.," "F. C.," "M. and F." (request shall be complied with), "L. B." (see "American News"), "H. A.," "A Reader" (we do not recommend).

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

CHURCH DECORATIONS.—Altar and Communion Cloths, General Church Furniture, Robes, &c. at very reduced prices.

An Illustrated Priced Catalogue may be had by application of the Clergy or Churchwardens.

HARRISON, Church Decorator and Robe Maker, 62, Chancery-lane. Contracts for Church Cushions, &c.

ART UNION of LONDON.—To SCULPTORS. The Council regret that they have been unable to award the Premium offered for a bas-relief commemorative of the late Duke of Wellington, no work of sufficient merit in connection with the terms of the advertisement having been submitted. Sculptors are requested to send for their models on MONDAY or TUESDAY next, the 7th or 8th inst.

(GEORGE GODWIN,) Honorary
LEWIS POCOCK, Secretaries.

444, West Strand, 3rd March, 1853.

TO PARENTS AND GUARDIANS.

AN ARCHITECT and SURVEYOR in extensive practice has a VACANCY for an OUT-DOOR PUPIL.—Direct or apply in the first instance, to T. T. at the Library, 6, Brownlow-place, Queen's-road, Dalston.

A GOOD STAIRCASE-HAND WANTED, in the Country (about Ten Miles from London), for a Month.—Address, with full particulars, to Mr. GEORGE COOTE, Surveyor, Wickham, Essex.

A CIVIL ENGINEER, holding the appointments of Surveyor to the Local Board of Health, and Engineer to the Waterworks of one of the largest cities in the kingdom, is willing to receive a Young Gentleman as ARTICLED PUPIL. He must write a good hand, and possess some knowledge of mathematics and drawing. In addition to the usual routine of Engineering and Land-Surveying, he will have the advantage of being placed upon the most extensive system of sanitary works in progress in the Kingdom. For terms, &c. address G. E. C. Office of "The Builder," 1, York-street, Covent-Garden.

WANTED, a Practical, Ornamental, DRAUGHTSMAN, for interior decorations and fittings. He must be competent to make working drawings and finished sketches. One used to an architect's office would be preferred.—A liberal salary will be given.—Apply by letter only, to HOLLAND and SON, Randolph Works, Belgrave-square.

TO CARPENTERS AND JOINERS.

WANTED, in the Country, a good WORKING FOREMAN; he must be steady, active, and industrious, and willing to make up his time in any way that may be required of him. Wages 24*s.* per week.—Address (post-paid), with full particulars, to Mr. JOHN COOTE, Builder, Witham, Essex.

WANTED, immediately, to proceed to British North America, an experienced and accurate ENGINEERING DRAUGHTSMAN. A liberal salary will be given, and unexceptionable reference required.—Address J. B. at Waterlow and Son's, Stationers, Parliament-street.

WANTED, in an Architect's Office, a Gentleman capable of taking the MANAGEMENT of the GENERAL BUSINESS. He must be a good designer and expert draughtsman. None need apply who cannot give most satisfactory references as to their efficiency.—Application to be made, by letter only, to C. G. 20, Parliament-street, Westminster.

WANTED, a few active YOUNG MEN from the Country, that can do the plainest Carpentering Work.—Apply by letter, stating terms, addressed to R. C. 41 Jubilee-place, King's-road, Chelsea.

TO PARENTS AND GUARDIANS.

WANTED, in an Architect's Office, a respectable well-educated YOUTH, having a taste for drawing, as an Articled Pupil. There would be no objection to receive such youth under arrangements as a member of the family. Apply to Mr. CARVER, Architect and County Surveyor, Taunton, Somerset.

TO BRICKMAKERS AND OTHERS.

WANTED, a SITUATION as BRICKSETTER and BURNER. The advertiser has had twenty years' experience, and can have a good recommendation from his late employer, who has discontinued brick-making.—Address to JOHN DODD, Surbiton-hill Kingston, Surrey.

TO BUILDERS

WANTED, by a Young Man, aged 27, of active business habits a SITUATION as CLERK or MANAGER of OUT-DOOR WORKS; is a good practical measurer, well accustomed to the building trade, and capable of introducing business.—Address E. P. at Mr. Collins's, Stationer, 13, Great Winchester street, City.

TO ARCHITECTS AND BUILDERS.

WANTED, to APPRENTICE, a Youth in his Seventeenth year, as Resident Pupil to an Architect and Builder, of good business and respectability, where a thorough practical knowledge in both branches may be obtained. A Dissenter's family preferred.—Address, stating particulars, to Mr. EDWARD COPLAND, Chelmsford.

TO ENGINEERS, SMITHS, BUILDERS, AND OTHERS.

WANTED, by a thorough practical Smith, a SITUATION as FOREMAN. Undeniable references for the last twenty years will be given. Aged 45. No objection to the country.—Direct J. W. care of Messrs. Willcox and Keyte, Stationers, 44, Goodge-street, Tottenham-court-road.

WANTED, by the Advertiser, by trade a Plasterer, a SITUATION as FOREMAN, in town or country.—Has a practical knowledge of his business, and can have first-rate recommendations from the firm he has been in eight years, the last seven years head foreman.—Address, J. S. office of "The Builder," 1, York street, Covent Garden.

TO ARCHITECTS AND SURVEYORS.

WANTED, casual EMPLOYMENT, by a gentleman fully conversant with the duties of both professions.—Address, post-paid, B. B. 11, Stonefield-street, Islington.

TO BUILDERS AND OTHERS.

WANTED, by the Advertiser, a Situation as GENERAL FOREMAN of one or more jobs. Is a good surveyor and draughtsman.—For further particulars, apply to G. K. Mr. Reader's, Hemingford-place, Barnsbury, Islington.

TO MASTER PLUMBERS, GLAZIERS, AND PAINTERS.

WANTED, by a Steady Man, a Permanent SITUATION. He has had twelve years' experience in town as Plumber and Glazier, and has no objection to fill up his time in Painting; or he can do a little Gas-fitting, if required.—Apply, by letter, to A. B. 141, Tonley-street, Bermondsey.

TO ENGINEERS, &c.

A MECHANICAL DRAUGHTSMAN is desirous of obtaining some DRAWINGS, &c. to make at home. Apply, by letter to A. B. 4, Arlington-street, New North road.

TO BUILDERS.

A YOUNG MAN, aged 20, who has been four years in the employment of a London builder of eminence writes a good hand, and is quiet, desires a situation of an ENGAGEMENT in the country, at a moderate salary, with the view to further improvement. References unexceptionable.—Address, R. R. 20, Berwick-street, Pimlico.

EMPLOYMENT WANTED.—A Tradesman, who for many years has been a partner in a respectable London house, is, from the fraudulent conduct of the party to whom he advanced his capital, seeking for employment, in the position of a COMMERCIAL TRAVELLER, to which he has been long accustomed. References of the very highest character can be given as to ability and integrity, and security to any amount that may be required.—Apply by letter to S. G. care of Messrs Grosvenor, Chater, and Co. Wholesale Stationers, Cannon-street.

TO BUILDERS.

A BUILDER'S CLERK is open to an ENGAGEMENT in Town or Country. He is thoroughly acquainted with the duties of a builder's office, perfectly understands bookkeeping, writes a fine hand, and is an excellent draughtsman. Can offer unexceptionable reference to his present and other employers, and security, if required. Salary moderate.—Address, E. F. Post-office, Ewell, Surrey.

TO ARCHITECTS.

A GENTLEMAN accustomed to prepare finished drawings, details, and the general routine of business, is desirous of an ENGAGEMENT in an ARCHITECT'S OFFICE. Testimonials can be offered and references given.—Address, Z. Z. 24, Park-street, Gloucester-gate, Regent's park.

TO BUILDERS

A SURVEYOR of good practical experience, and accustomed to all the duties of a Builder's Office, is desirous of meeting with a SITUATION.—Address Mr. HOWARD, 65, Stanhope-street, Hampstead road.

AS CIVIL ENGINEER. — A Gentleman, who has been engaged on several German railroads, in the capacity of designing, is anxious for EMPLOYMENT in ENGLAND. Reference of the highest responsibility given if required.—Address, A. B. 13, Devonshire street, Bishopsgate

TO ARCHITECTS, &c.

AN experienced ASSISTANT is desirous of meeting with a SITUATION. Is well acquainted with Gothic and Italian architecture; fully competent to make finished and working drawings, prepare specifications, and has a practical knowledge of the various duties of the profession.—Address, B. B. 7, North street, Westminster.

HIGHGATE ARCHWAY-ROAD.—BUILDING LAND TO BE LET, on Lease for Ninety nine years, having a frontage of upwards of 2,500 feet to the High-road, and offering excellent sites for the erection of cottage residences.—For further particulars, apply to Messrs. HOGGART, NORTON, and THIST, 62, Old Broad street, Royal Exchange

LAND for BUILDING.—TO BE LET, at Lee, Kent, by the Merchant Taylors' Company, in the immediate vicinity of the Blackheath and Lewisham railway stations, an eligible PIECE of LAND, of Twenty-three Acres or thereabouts, for a term of ninety-nine years.—Plans and tenders to be sent in to the Clerk's-office, Merchant Taylors' Hall. Threadneedle street, where a plan of the ground can be seen and further particulars obtained. SAMUEL FISHER, Clerk.

BUILDING FRONTAGES, Grove-road, Upper Holloway; Queen's-road, Dalston; and High-road, Turnham-green.—TO LET, BUILDING FRONTAGES, with good roads and sewers, and one year's pepper-corn.—For particulars apply to Mr. HUGHES, Solicitor, 23, Old Jewry; and to view the Ground, at the Counting-house on each Estate.

BUILDING GROUND, for Small Houses, TO BE LET, on very advantageous terms, in a manufacturing locality, where such residences are much in request.—Apply to Mr. TRIBE, Isle of Dogs.

ORPHAN WORKING SCHOOL ESTATE, HAVERSTOCK-HILL.—TO BUILDERS and OTHERS. TO BE LET by TENDER, either in one or more lots, for a term of Ninety-nine Years from Christmas, 1852, a PORTION of this ESTATE, forming eligible sites for semi-detached villas, rows of houses and shops. Plans and particulars may be obtained by application to the Secretary, at the Office of the Corporation, 23, Ironmonger-lane; the Architects, Messrs. WERNER and ASHDOWN, 42, Charing-cross; or Messrs. TERRELL and CHAMBERLAIN, Solicitors, 20, Basinghall-street.—Sealed tenders to be delivered to the Secretary on or before TUESDAY, MARCH 22nd, 1853, marked, "Tenders for Land at Haverstock-hill." The corporation does not bind itself to accept the highest or any tender. JOSEPH SOUL, Secretary.

Office, 32, Ludgate-hill, February 22nd, 1853.

WATER-SIDE PREMISES.—TO BE LET, a PLOT of COPYHOLD GROUND, with the erections thereon, situate on the north-side of Upper Fore-street, Lambeth, possessing a river frontage and a street frontage of about 24 feet, by a depth of about 38 feet. Also a small Plot of Copyhold Ground, with the shed thereon, on the opposite side of the said street, containing a frontage of about 12 feet by a depth of about 80 feet.—For particulars apply personally at the Offices of Messrs. WILDSMITH and PARRIS, Architects and Surveyors, 5, Wolsingham place, Lambeth.

TO BE LET on LEASE, by the Committee for Letting the Bridge House Estates, the extensive PREMISES situate on the north side of the Westminster-road, Southwark, formerly used as the Freemasons' Schools. A plan of the property may be seen, and further particulars obtained upon application at the Architect's Office, Guildhall, London.

FERDINAND BRAND,
Comptroller of the Bridge House Estates.

TO BUILDERS AND BRICKMAKERS

TO BE LET, with immediate possession, superior and very commodious BUILDING PREMISES, with every requisite for carrying on an extensive business. Also, in Bickward, where a large trade has been carried on. About between thirty and forty acres of very superior Land. The above may be taken separately, or altogether.—Apply to Mr. PILKINTON, Bourn, Lincolnshire.

MAIDEN-LANE, King's-cross, near the Great Northern Railway Station.—TO BE LET, on lease, for any term not exceeding ninety-nine years, in one or more lots, a valuable PLOT of BUILDING GROUND, situate on the east side of Maiden-lane, and having a frontage of about 120 feet by a depth of about 180 feet. For further particulars apply to Messrs. PUGH, Auctioneers and Estate Agents, 6, Birkinham-street, Borough; Mr. ABBOTT, Auctioneer and Estate Agent, 44, Bedford-row; or to Messrs. PARKER and CO. Solicitors, 17, Bedford-row.

TO BUILDERS AND OTHERS REQUIRING SPACIOUS PREMISES.

TO BE LET, or the original LEASE from the Duke of Bedford, TO BE SOLD, No. 3, BEDFORD-STREET (immediately adjoining the terminus of the North-Western Railway).—Inquire on the premises, or of JOSEPH IVIMEY, Esq. 30, Southampton-buildings, Chancery-lane.

WHITESTONE, NEAR EXETER, DEVONSHIRE.

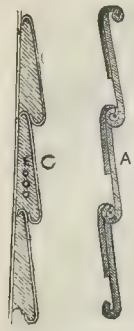
TO BE LET, on a Building Lease for a term of 99 Years, a CLOSE OF LAND, 2 Acres, situate in the parish of Whitestone, 4 miles from Exeter. It is surrounded by roads, in a picturesque and healthy locality, and well adapted for a VILLA RESIDENCE, 300 Acres of Shooting, with good coverts, may be rented, and Hounds are kept in the neighbourhood. The river Teign, a celebrated trout stream, is within easy walking distance.—For particulars apply to Messrs. ROBERTS and KINGDON, Solicitors, Exeter.

EXTENSIVE FREEHOLD PREMISES TO BE LET, adapted for a Timber Merchant, Builder, or Manufacturing Business, having, in addition to the present Workshops, Stabling, Yard (120 feet long), and Dwelling-house, considerable space on which to erect other buildings, and towards which the proprietor would contribute.—Apply to N. HOOPER, Esq. 3, Pump-court, Temple; or Mr. SMITH, 14, Greek-street, Soho.

TO BUILDERS AND OTHERS.

SEVERAL third and fourth-rate CARCASSES TO BE SOLD or LET, at a ground rent.—For particulars, apply to Mr. W. PARRY, Brick and Lime Merchant, Crown-wharf, Old Kent-road.

PATENT DATED 9TH DAY OF OCTOBER, 1852.



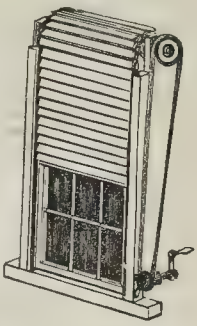
CLARK & CO.'s

NEW PATENT COMBINED IRON AND WOOD

REVOLVING SHUTTERS,

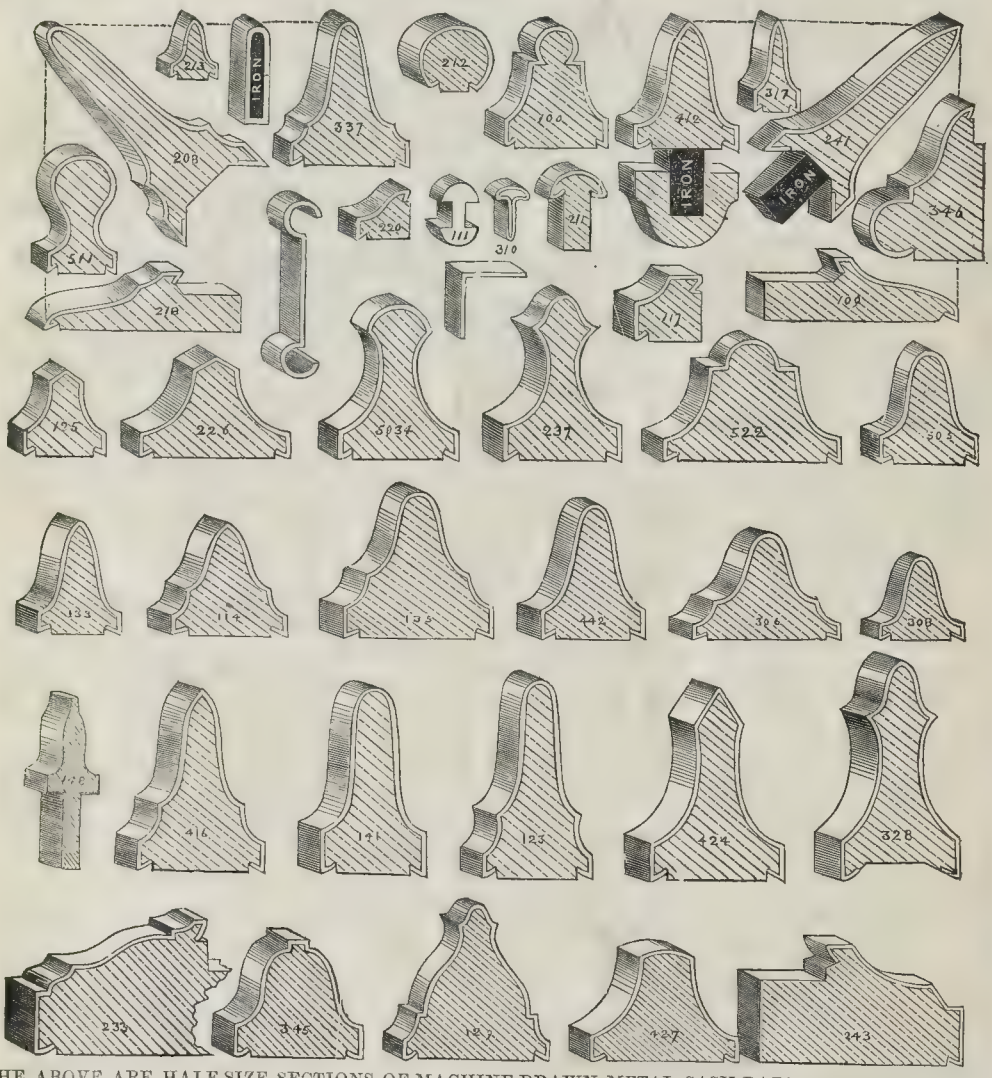
AND

IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.



The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section.
A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected together, and can be ROLLED EITHER WAY, greatly facilitating their application.
C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the laths to split, and combining the lightness of wood shutters with the durability and appearance of iron.
CLARK and CO. have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwelling-houses, thereby saving a large item in their cost (the fixing), and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the whole can be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.

IMPROVED DRAWN BRASS SASH-BARS AND STALL-BOARD PLATES.
ENGRAVING IN THE FIRST STYLE OF WORKMANSHIP.
PROSPECTUSES, ENGRAVINGS, AND TESTIMONIALS FORWARDED, ON APPLICATION TO
CLARK & CO. ENGINEERS,
PATENT SHUTTER WORKS, 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.



THE ABOVE ARE HALF-SIZE SECTIONS OF MACHINE-DRAWN METAL SASH-BARS FOR SHOP FRONTS
Selected from CLARK and CO.'S numerous Patterns. Can be had in Polished Lengths up to Thirty-two feet in One Piece. Are drawn on Wainscot Cores, moulded by improved Machinery.
SASH-BARS MADE TO ARCHITECTS' OWN DESIGNS WITHOUT ANY EXTRA CHARGE.
Full-sized Sections of the above, and numerous other Patterns, with Prices, and every Information, can be had on application to
CLARK & CO. 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

IMPORTANT.

BRICK and TILE EARTH. — TO BE LET, twelve acres (or any less portion) of valuable FREEHOLD LAND, containing a nearly inexhaustible supply of BRICK and TILE EARTH, of first-rate quality, and specially applicable for making the noted "Suffolk White" Bricks. Also CLAY for Red Bricks, and Pipes, and Tiles, or hollow perforated Bricks of every description. This land also contains Strata of Sand, Chalk, and Gravel. Situated in Suffolk, about two hours by railway from London, and 300 yards from a railway station. There is also water conveyance, very convenient for transit of the above goods to the London and other markets, to which large quantities are continually being sent from the immediate neighbourhood. To an enterprising man with a modern-e capital, the above will be found well worthy attention.—For further particulars, apply to H. CLAYTON, Patentee, and Manufacturer of Brick, Tile, and Pipe-Making Machines, &c., Atlas Works, Upper Park-place, Dorset-street, London. N.B. Clayton's Patent Brick Machine; also his Tile-making Machines, may be seen in operation at his Manufactory.

TO BRICKMAKERS.—TO BE SOLD, in consequence of the ground having been taken for public works, an entirely new EARTH-WASHING MILL, with chalk washing machinery, lifts, buckets, three-barrel force-pumps, and gearing complete. Also, if required, a Twenty-horse power Steam-Engine, boiler, and appurtenances, used for driving the same. The above may be seen in full work, by applying to Z. BOWDEN, Caledonian Brickfield, Holloway.

BRICKS.—Some capital Stock, Grizzle, and Place Bricks FOR SALE, delivered by barges to any part of the Thames.—Address to Y. Z. Office of "The Builder," 1, York-street, Covent-garden.

LUTON and DUNSTABLE, BEDFORDSHIRE.—BUILDING LAND.—TO BE SOLD or LET, on BUILDING LEASES, by Tender, several plots of Land, eligibly situate in and near the towns of Luton and Dunstable, in the county of Bedford.—For particulars apply to I. SEWELL, Esq. 101, Strand-street, London; Messrs. CLUTTON, Architects, 8, Whitehall-place, London; or to Mr. CUMBERLAND, Surveyor, Luton, Beds.—Tenders will be received up to the 26th day of MARCH next.

MUSWELL HILL, HORNSEY.—A Plot of FREEHOLD BUILDING GROUND TO BE SOLD, beautifully situated in the above locality, frontage 45 feet, depth 160 feet.—Apply to T. B. 14, Owens-row, Goswell-road.

NORWOOD, near the Crystal Palace.—TO BE SOLD, THREE FREEHOLD HOUSES, in a commanding situation.—Apply to Mr. FREDERIC LETT, Architect, 1, Stockwell-crescent, Clapham-road.

FREEHOLDS for ALL CLASSES in ALL COUNTIES.—The CONSERVATIVE LAND SOCIETY, 33, NORFOLK-STREET, STRAND.—The fifth purchase within five months, has just been made at Wood-green, Tottenham. All persons desirous of obtaining allotments on this eligible estate, may insure the result, by paying up shares in full at once, and all who join, by payment of the first month's subscription and fees, 12s. 6d. for one share, on or before WEDNESDAY, the 16th of MARCH, will participate in the advantages of the PUBLIC DRAWING for RIGHTS of PRIORITY of this and the other estates of the Society, at the FREEMASONS' TAVERN, GREAT QUEEN-STREET, on THURSDAY, MARCH 17th, at Three o'clock, Viscount HANDLAGH in the chair, being the SECOND QUARTERLY MEETING of the Conservative Land Society. The Wood-green property is situated midway, and near three stations on the Great Northern and Eastern Counties railroads, and is at an easy distance from Hornsey, Southgate, Enfield, Edmonton, &c.

CHARLES LEWIS GRUNEISEN, Secretary.

WANTED, in one of the Squares, or any dry and healthy part of the Town, a good FAMILY RESIDENCE, either to rent or purchase; the reception and three principal bed-rooms must be spacious; if with coach-house, and to let at an easy distance from Hornsey, Southgate, Enfield, Edmonton, &c.

WANTED to INVEST, Two Thousand Pounds in Ground-Rents or on Mortgage of Leasehold Property well secured.—Apply to Mr. ARBER, 1, Mount-street, Berkeley-square.

FREEHOLDS.—WANTED, to INVEST from 3,000*l.* to 5,000*l.* in the purchase of freehold property in the city of London, or any of the home counties.—Particulars to be forwarded to THOMAS DEANE, Esq. Solicitor, 13, Swithin's-lane.

ORGAN for SALE, suitable for a Church, price 150*l.*; contains 15 stops, swell to tenor C, 8½ octaves of Bourdon pedal pipes, 3 composition pedals, &c. and in a good case, with gilt speaking pipes in front.—May be seen at HENRY JONES'S, Organ Builder, West Brompton, London.

SAW MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw mills for exportation or otherwise.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7*s.* 6*d.* each, free on board at Newcastle-on-Tyne; or paid to London, 8*s.* Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Trays, &c. &c. manufactured by J. M. BLASHFIELD, Mill Wall, Isle of Dogs (near the West India Docks), and sold at No. 1, Praed-street, Edgware-road, Paddington.

TO BUILDERS, HOUSE-DECORATORS, &c.

MESSRS. HILL and SON, of 88 and 89, St. Martin's-lane, Charing-cross, have the most extensive assortment of PATENT BAIZES in every quality and width, and shade of colour, suitable for curtains, covering doors, &c.—Patterns will be sent upon application.

TO ARCHITECTS AND OTHERS.

MR. EDWARD L. PARAIRE is desirous of meeting Gentlemen who require COLOURED ARCHITECTURAL DRAWINGS. External, Internal, Geometrical or Perspective got up; outlines of same neatly coloured, with background, on terms that will ensure approval. Temporary assistance given in getting up Plans, Elevations, Sections, Details, and Working Drawings.—Mr. E. L. P. makes a consideration in his charge where competition drawings prove unsuccessful.
Address, 8, Rathbone-place.

LIGHTERAGE.—To Saw-Mill Proprietors, Timber, Slate, and Stone Merchants, or others, requiring Lighterage.—The Advertiser having a large number of Barges, is willing to undertake LIGHTERAGE at prices that defy competition.—CHARLES STRUTTON, 34, Commercial-road, Lambeth.

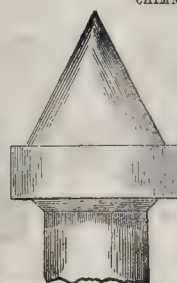
DO Builders BRUISE their OATS?—And if they can keep one horse, would they not like to keep a pair at the same expense? That's all. Then get MARY WEDLAKE'S MANGER FEEDING MACHINE. Portable mangles, 55*s.* 6*d.*; sieve filterer at 13*s.* 6*d.*; gorse crushers, at 12*l.*;—12*l.*, Fenchurch-street. Book on Feeding, 1*s.*; per post, 1*s.* 4*d.*; list of machines, with 140 cuts, 1*s.*; per post, 1*s.* 4*d.* Oat-brulers, chaff engines, domestic flour-mills for private use, so as to make one's own bread, &c.

IMPORTANT TO BUILDERS.



REGISTERED CAST-IRON CHIMNEY-HOPPER and CHIMNEY-BAR COMBINED, ensuring a perfect formation of the Flue, and rendering smoky chimneys impossible. One trial will cause their adoption in every building.
Price from 8*s.* 6*d.* each, according to size.
CAST-IRON KITCHEN SINKS, with overflow-pipe, 8*s.* 6*d.* each.
IRON PIPES and connections for gas, water, and liquid manure.
RAIN-WATER PIPE and EAVE GUTTERS, at wholesale prices. Also, O-G Gutters, Sash-weights, STABLE FITTINGS, pumps, tomb railing, cattle and pig troughs, and COLUMNS with caps and bases, and every kind of builders' castings, in stock, at LYNCH WHITE'S Iron Wharf, Upper Ground-street, London, near Blackfriars-bridge.

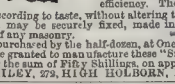
BAILEY'S "SMOKE GUARD," REGISTERED, FOR THE CURE OF SMOKY CHIMNEYS.



The principle upon which this "Smoke Guard" is constructed is just the reverse, of those in ordinary use, namely, "to EXPAND the TOP" of the chimney, instead of contracting it; or, in other words, to double the area of the chimney-top at the opening, where the smoke escapes, and at the same time protect it in such a manner that no wind can enter the chimney, from whatever point or with whatstrength it may blow. An examination of this "Smoke Guard" will show that these two important points are effectually secured, and in such a manner as to increase the draught of the chimney in proportion to the strength of the wind, by the current of air which is made to pass between the guard-ring and the chimney-top, and the great success they have met with is the best proof of their efficiency. The form may be slightly varied, according to taste, without altering the proportions or principle, and may be securely fixed, made in any material, without the aid of any masonry.
Labels may be purchased by the half-dozen, at One Shilling each, or Licenses will be granted to manufacture these "Smoke Guards" to any extent, for the sum of Fifty Shillings, on application to L. and E. BAILEY, 279, HIGH HOLBORN, LONDON.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the admission of pure air through an EXTERNAL WALL.



With single pulley, from 6*s.* each; with leading pulley, from 8*s.* 6*d.*
These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough; and of all respectable ironmongers, builders, &c.



TOZER'S PATENT VENTILATING GAS-STOVE, for halls, shops, offices, &c. price 35*s.* This stove is constructed on the principle of ventilation, combined with economy, the consumption of gas being only 3*d.* for twelve hours. The absence of all smoke and dust particularly recommends it for the use of Libraries, or wherever warmth is required. Also,
TOZER'S PATENT SUN-STOVE,
to burn coke, suitable for village churches, &c.
T. TOZER, Ironmonger and Manufacturer, 55, Dean-street, Soho.



NO CHIMNEY is WANTED for RICKETS' PATENT CALORIFERE GAS-STOVES, in churches, halls, or shops, and for conservatories, or any close apartments; a pipe can be attached to convey away the burnt air. These highly approved stoves are used at Her Majesty's Mint, Colonial Office, Bristol Cathedral, the Abbey, Tewkesbury, the Shops of Messrs. Winstanley and Son, Poultry, Mr. S. Matthews, Charing-cross, and many other churches, chapels, and other places in all parts of England.
Manufactory, 5, Agar-street, Strand, opposite Charing-cross Hospital.

GREAT EXHIBITION.—DRAWING-ROOM GRATES and FENDERS to which the GREAT or COUNCIL MEDAL was AWARDED.
J. L. BENHAM and SONS beg to intimate that these beautiful Stoves and Fenders which were so generally admired for their artistic design and elaborate workmanship, are now on view in their EXTENSIVE SHOW-ROOMS, and respectfully invite ARCHITECTS and Others engaged in Building to inspect them there.
WARM AIR STOVES for CHURCHES, HALLS, &c. &c. simple in construction, ornamental in design, and thoroughly effective, of various sizes and prices.
J. L. BENHAM and SONS' MANUFACTORY and SHOW-ROOMS, 19, WIGMORE-STREET, CAVENDISH-SQUARE.

PRIZE MEDAL for COOKING APPARATUS awarded to J. L. BENHAM and SONS.
The IMPROVED FAMILY RANGE will roast, boil, bake, fry, &c. &c. for a large family, with an average consumption of only 30 lbs. of coal per day. It has an open fire, is perfectly simple, and of moderate cost.
Specimens of these excellent and economical Ranges, and also of the most improved Broiling Stoves, Hot Closet, Hot Tables, Ovens, &c. &c. as lately exhibited in HYDE-PARK, may be inspected at the MANUFACTORY and SHOW-ROOMS. A Gas Cooking Apparatus is in daily operation.
J. L. BENHAM and SONS, Stove, Range, and Bath Manufacturers, Hot-water and Gas Engineers, &c. 19, WIGMORE-STREET, CAVENDISH-SQUARE, LONDON.

NEW HOUSES OF PARLIAMENT.—DEFRIE'S GAS STOVES, RANGES, and BATHS, just completed for two kitchens in the above building.—A great variety in stock upon the same principle. Gas Baths from 7*l.* by which a warm bath may be obtained for three-halfpence. Gas Cooking and Heating Stoves for all classes, from 1*l.* Defrie's celebraded Dry Gas-Meters,—45,000 in use. Testimonials at the office, 145, Regent-street. Manufactories removed from Hampstead-road and St. Martin's-lane to more extensive premises, New-road, near Albany-street.

IMPORTANT to the TRADE.—HOT-WATER and HOT-AIR APPARATUS MANUFACTURER, for warming churches, mansions, drying-rooms of any description. Architects, surveyors, builders, ironmongers, merchants, and others, finding their own pipes and boilers can have them fitted up by contract or otherwise. Specimens of work can be seen in operation; also recommendations from the trade and others.—E. ELY, No. 3, Pump-row, Old-street-road, City-road.

HEATING by HOT WATER.—J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also fire and furnace bars, ornamental and plain supply cisterns, double doors and frames, furnace grates, soot doors for the same, hot-water pipes, elbows, tees, syphons, throttle valves, stop cocks, flange and socket elbows, &c.; also, trough pipes. Drawings and prices of the above, on application to J. JONES, Iron-bridge-wharf, No. 6, Bankside, London, near the Southwark-iron-bridge.

LOANS.—Persons desirous of obtaining ADVANCES from 50*l.* to 250*l.* upon approved personal security, repayable by easy instalments, extending over a lengthened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES.—Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6*d.* each copy, or 1*s.* per post. Next year our new classes are now in course of formation for London, and will immediately commence operations.

SMALL INVESTMENTS WANTED, immediately, by a capitalist, who is desirous of investing various amounts in any secure way, at a moderate rate of interest. The persons selling their property may retain power to repurchase after a fixed period, if so desired.—Applications to be made to Mr. ALFRED COX, Surveyor and Auctioneer, 66, New Bond-street.

MERTHYR TYDFIL LOCAL BOARD of HEALTH.—WANTED to BORROW, on the security of the rates of the district, a sum of 70,000*l.* at a rate of interest not exceeding 4½ per cent.—Further particulars may be obtained of Mr. J. W. RUSSELL, Solicitor, Merthyr Tydfil, Clerk to the said Local Board.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c.—JAMES LYNE HANCOCK, Sole Manufacturer (and Licensee), Goswell-mews, Goswell-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now manufactured from 1-8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE for FIRE ENGINES, LIQUID MANURE, and for conveying HOT WATER to BATHS in DWELLING-HOUSES and BREWERIES, manufactured to resist great pressure of any length and size to order.
*** Testimonials may be had on application at the Manufactory.
N.B. VULCANIZED WASHERS and SHEET RUBBER or Steam and Hot-Water Pipes, and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 9*d.*; best holland blinds, on rollers, 6*d.*; best ditto, on spring rollers, 9*d.*; gauze wire blinds, in mahogany frames, 8*s.*; painted wire blinds, in ditto, 1*s.* 10*d.*; quadrille blinds of striped cloth, 3*s.* Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

TO MANUFACTURING CHEMISTS, PLUMBERS, BUILDERS, &c.

ANDREW CLARK and COMPANY, PLUMBERS,
THE BEAR GARDEN LEAD WORKS, SOUTHWARK,
Invite the attention of Manufacturing Chemists to their Patent method of
UNITING LEAD TO LEAD WITHOUT SOLDER.
Leaden Chambers, or any leaden vessels, made or repaired by this process, making them complete, without the introduction of any foreign metal.

PLUMBERS and BUILDERS can be SUPPLIED with SHEET LEAD and PIPE, cut to any dimensions, and EXCHANGED for OLD LEAD, on the LOWEST TERMS.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Flare Lime fresh at the Kilns everyday.—Mr. D. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

STEPHENS'S PATENT PROPELLING PENCILS.—A new kind of ever-pointed Pencil in Wood, lined throughout with lead, requiring no cutting, as the lead is propelled to the point by a novel, easy, and ingenious contrivance; is more economical than even the wood pencil, which is destroyed as used, whereas in these pencils the lead only is consumed, the pencil remaining as perfect as at first, and can be refilled, and this is required only at long intervals. Prepared and sold by the Proprietor, HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London. Sold by Booksellers and Stationers; where also may be had his Writing Fluids, peculiarly adapted to Steel Pens.

TO DRAUGHTSMEN AND CIVIL ENGINEERS.
H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.
These Pencils are prepared in various degrees of hardness and shades.

H H H for drawing on wood.	F F light and shading.
H H for architectural use.	F for general use.
H H for engineering.	B black for shading.
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
M medium.	B B B B ditto ditto.

Sold by all the principal Stationers in town or country.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 315, Fore-street, City. Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.

DAMP WALLS.—NEW PATENT PAINT as used at the TOWER, by HER MAJESTY'S HONOURABLE BOARD of ORDNANCE; at the TUNNEL; ZOOLOGICAL GARDENS, Regent's-park, and various other public buildings; in quantities to finish twenty square yards for 12*s.*
PATENT LIQUID CEMENT for the fronts of houses, for beauty pre-eminent, giving the appearance of fine cut stone, and only one-eighth the cost of Oil Paint. In casts of 1, 2, and 3 cwt. at 8*s.* 12*s.* and 21*s.* each.
BLACK MINERAL PAINT, very permanent, half the usual price; only 3*s.* per gallon.
G. BELL and CO. 2, Wellington-street, Goswell-street, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 300 feet ..... £1 16 8 } In sizes 40 by 30 ; Cases included.
" 300 feet ..... 2 14 0 } to 43 by 31 ; Smaller size at less price per case.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.
BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.
Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for
RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses or scorching rooms; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.
For further information apply to Messrs. JAMES HARTLEY and CO., Wear Glass Works, Sunderland
N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate. May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER
Will be forwarded Gratis, on application, "post-paid," to
Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Richly-cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 33, OXFORD STREET.

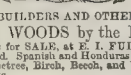
PLATE GLASS.—ALFRED GOSLETT respectfully begs to inform the trade that the Plate Glass Tariff has recently undergone a complete revision, that Plate Glass generally, but more particularly LARGE-SIZED GLASS, has been considerably reduced in price, and that he is prepared to forward tenders for the supply of any quantity upon application.—Soho Crown, Sheet, Patent Plate, Plate Glass, and Wholesale Looking-glass Manufactory, 26, Soho-square

TO BUILDERS, PLUMBERS, &c.

JAMES MILES'S cheap ENGLISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, Church-street, Shoreditch, near the Eastern Counties Railway Terminus. Cases of foreign sheet, various sizes, 41s. 200 feet; crates of sheet, 14 to 16 oz. 9½d. per foot; good crown C C G, 18s. 21s. and also C G, 38, 33s. per crate; patent plate; Hartley's ROUGH PLATE; stained, ground, and ornamental glass; crown squares of every size in stock; sheet lead; pipe; patent gas-pipe, solder and plumbers' brass work of all kinds; white lead, oils, and colours, at low prices; LARGE STOCK of PAPER HANGINGS; old lead bought in any quantity, or taken in exchange. Sashes glazed and primed in oil at very low prices, in any quantity.

FOREIGN SHEET GLASS, packed in 200-feet Cases;
sizes, about 40 by 30—1l. 18s. case included.
GLASS TILES,
¼ of an inch thick,
packed in cases containing 50—2l. 5s. per case.
JAMES PHILLIPS AND CO.
116, Bishopsgate-street Without.

GAS CHANDELIERS and BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the Kingdom, viz. from 12s. 6d. (two-light) to 16 guineas.
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¾ " "	15 6	¾ " "	15 0
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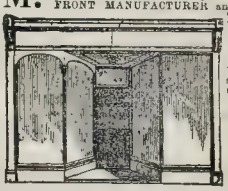
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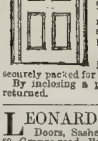
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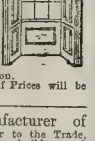




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The Builder.

SATURDAY, MARCH 12, 1853.

We feel compelled to continue our exposition of some of the black spots in the metropolis,—the manufactories of evil and sorrow,—to show the miserable condition of parts of London even now; and the want of proper accommodation for the poor. "Wounds cannot be cured without searching:" the disease must be known before a remedy can be applied with certainty of success. "But we have heard of all this before," some will probably say; "we have read in the publications of the Health of Towns Commission, and elsewhere, not excepting your own pages, the fullest details of the manner in which the poor live crowded together in ill-ventilated rooms, and have no doubt in our own minds as to the depreciating effects, both morally and physically, which necessarily follow."

Very likely: but have these statements been attended to? Is anything being done effectually to remedy the gigantic evil involved? So long as No is the answer to this inquiry, as it must be at this time, so long will repetition and re-urging be necessary. It is extraordinary how lightly the majority estimate human life and health, and how obstinately they persist in courses inimical to both. The education of the rising generation is what we must mainly look to for a real advance:—

"——— Ignorance is the curse of God,
Knowledge the wings wherewith we fly to heaven."

But, in the meanwhile, we of the present must do what is possible to rescue from the slough those who are sunk in it, and to increase the sum of human happiness.

The greatness of the task is not to be listened to as good grounds for folding the hands and doing nothing. The work of the minute coral worm is scarcely to be measured; but, each performing its appointed duty, the foundations of vast islands are laid by the tiny and short-lived labourers.

To be practical: let us look at the valley of the Fleet, Clerkenwell. Within the liberties of the City, in continuation of the new street from the end of Farringdon-street, this most abominable of rivers has been hidden from the sight; the houses originally on its banks have also to a great extent been swept away. It is true that a specimen of Field-lane (of which more hereafter), that famous mart for stolen handkerchiefs, still exists. There are also Plough-court, Plum-tree-court, Holborn, and a few other bits within this part of the City so inhabited as to give some notion of the houses formerly on the vacant space. The buildings have been swept away, and those who inhabited them have been *driven to equally unfit lodgings in other districts*—a fact not to be lost sight of in considering the effects of the demolition of the dwellings of the poor without any provision for their reception elsewhere.

If there were no courts and blind alleys, there would be less immorality and physical suffering. The means of escaping from public view which they afford, generate evil habits; or, even when this is not the case, render personal efforts for improvement unlikely. We would have such cleared away, therefore; but it is at the same time necessary that other accommodation should first be provided for those who are driven out.

The visitor to the neighbourhood alluded to will notice in the cleared space a substantial wooden hoarding running up for some distance. A tall man may peep over it, and see and hear the "Fleet" rolling in an unwholesome stream. If we follow the course of this hoarding for some distance we shall see that the *river* enters and is hidden by a gloomy archway. Thank God! the visitor may exclaim, here is the end of the Fleet, and, with thankfulness and hopes that one day soon the part of the river before his eyes may in like manner be concealed, he wends comfortably on his way.

A more enterprising traveller, however, who, anxious to get an anecdote or two of the ancient stream, follows its apparent course in a northward direction, will find that the Fleet, like the river Mole, again appears at a short distance to the light of day, and for several hundred yards through the dense population of Clerkenwell, he dives down various courts, and, by the favour of individuals, peeps out of dilapidated windows overlooking the Fleet in hopes to discover the end of its polluted course (for be it remembered this stream is the sewer for the refuse of a population of more than half a million of persons). Few men could view the blackness and hear the rolling of the Fleet, not to mention its effect on the other senses, without feeling pity for all residing near it. The explorer of the Fleet will find a street closely abutting upon it, on the east side of which are dense masses of buildings thickly populated: he will not fail to note the entrance to *Frying Pan-alley;* this way is exactly 2 feet 6 inches wide, and say 20 feet long: there would not be room to get a full-sized coffin out of this court without turning it on its edge. At the end of this narrow passage is a long line of squalid houses running in narrow perspective; little turnings wherein are dust-bins and other matters, lead to similar courts and alleys,—"Rose-alley," which—

"By any other name would smell *as* sweet,"

"Pear-tree-court," "Broad-court," &c. which sadly belie their names. The greater number of these houses are occupied by costermongers, and the various articles of traffic and animals required in the trade are lodged in the lower story. It would be difficult to give a complete notion of the dirty appearance of those courts and their inhabitants. On the opposite side of the way, after passing under an archway, we come to a special scene of wreck and neglect.

Few would suppose that these dilapidated buildings were inhabited, even in the midst of winter, by human beings. In some parts the glass and framing have been entirely removed, and vain attempts made to stop out the wind and snow by sacking and other matter. The basement is occupied by donkeys, dogs, &c. In one of the rooms we found a very old Irish woman (who said she was more than fivescore years of age), crouching over a little fire; her son, a man about thirty years of age, lives with her. There was no bedstead or other furniture in the



A CLERKENWELL INTERIOR.

room; the ceiling was cracked and rotten, and the window destroyed. The rent of this room is 1s. 6d. per week. This description will answer for several other apartments; but the rooms in the house to the right, by the dense packing and sad poverty of their inmates, make the places already mentioned appear better by the contrast. In the first room, the windows of which were filled with tins, wood, rags, &c. we found a middle-aged Irishman mending the trousers of a lad about eight years of age, whom he was going to despatch to "worruk, to get his living, God help him!" Other children, too young to handle a broom at a crossing, or even to beg, stood about. Several women, such as those often met with in the streets of London late at night, sat on the floor near the black-looking fire, in idleness. There was an old bedstead in the room with straw upon it and some dirty rags; there was also a chair without a back, which was politely handed for our use. Here we heard long complaints of want of work; but our friend was evidently one of those who would not much distress himself in searching for it,—his six children will beg,—his wife will sell matches in the streets,—he will let part of his miserable tenement to lodgers,—and probably finish his useless and degraded existence in the workhouse, leaving behind him a large legacy of paupers, if not criminals. The room above presented a scene of still greater destitution. Here you have a sketch of it:—There was not a single piece of furniture in it; three beds were rolled up on the ground; against the walls at intervals the whole worldly property of the different lodgers was suspended; attached to many articles, and also suspended from the roof, were small bottles of holy water. In some instances these little collections of effects consisted of a bonnet and cloak or shawl, with a basket used for the sale of fruit and flowers; in others, nothing but a very old basket and a ragged shawl. In one part of the room there was a woman sorting bones, pieces of iron, cinders, &c. which she had gathered in the street; in another part, between the two beds, were a few cinders, which had been sifted out and placed there for the purpose of supplying the fire, round which were squatted dirty and ill-clad women and children. This and the room below it, already mentioned, lodge in the night time twenty-five persons. The houses in this court belong to a gentleman at Notting-hill, by whom they are let to a chimney-sweeper, who lives on the spot, and then sublets them as mentioned. Continuing towards the north, there is a hilly street, formerly called Mutton-hill, now Vine-street; the centre of this street is reached by a sharp descent on each side. At the bottom of the banks, for these were formerly the green sides of the Fleet, are two walls, with a door in each, on which are painted communications from the Commissioners of Sewers. Many would pass here and imagine that these doors led to some neatly-paved yards; we have, however, removed the screen, that our readers may themselves see what is really behind it, namely, the Fleet.

At night, or rather in early morning, we



THE FLEET DITCH.

visited some of the low lodging-houses in this neighbourhood. The moon was shining gloriously over old Bartholomew's,—the "Smoothfield" looked more like a lake than a "cattle-market," when we left the station with a serjeant of police to pursue the inquiry; but what we saw by its light, aided by our companion's "bull's eye," we must take some other opportunity to tell.

Bacon says, "It is a poor centre of a man's actions, himself. It is right earth; for that only stands fast upon his own centre; whereas all things that have affinity with the heavens, move upon the centre of another which they benefit." But acting even on this centre (Bacon's inference is right, though his illustration is wrong, for the earth is but part of a whole), thinking only of ourselves, we must, if we are wise, look to the health, the well-being, and the advancement of those beneath and around us, if it be but for the effect neglect of this may have on our own health, well-being, and advancement.

The Somerset Archæological and Natural History Society held its fifth *conversazione* meeting for the season on Monday in last week. The Rev. Mr. Chowne read a paper on English Poetry and Literature. The Rev. Mr. Phelps afterwards read a paper on "The Tides of the Bristol Channel."

AN ATTEMPT TO DEVELOPE THE PRINCIPLE WHICH GOVERNS THE PROPORTIONS AND CURVES OF THE PARTHENON OF ATHENS.*

It is well known that architecture owes its excellence to the power which it possesses of uniting in its productions the qualities of fitness, strength, and beauty. As an useful art, it demands of its professors a knowledge of the various domestic requirements of man, both as a private individual, and as a member of civilised society, in order that fitness may characterize their designs. It also requires that they should possess a knowledge of the various branches of mechanical science, to enable them to impart to their works the greatest possible strength and durability. As a fine art, it requires, moreover, that its professors should be acquainted with the science of æsthetics, in order that the beauty of their works may be, like the qualities of fitness and strength, of a demonstrable and intelligible character. When we reflect that the works of the architect are necessarily placed before the public eye in far greater number and magnitude than those of any other formative artist, and that they thus exercise a powerful influence, either to improve or to pervert the perception of the beautiful, and that they must have a corresponding tendency, either to refine or degrade the national taste, the importance of this science must at once be acknowledged. Not but that men of great artistic genius sometimes appear, who are enabled by this rare gift to compose the abstract forms of an architectural structure agreeably to the successive harmony of its outline, and the combined harmony of the relative proportions of its various parts; but this assists but little towards carrying the æsthetic department of the profession to that degree of general accuracy of which it is susceptible, and by which the vast number of less gifted men who devote themselves to the study of this art might be enabled, at least, to avoid producing deformity, if they have not the genius to create beauty.

The science of æsthetics, or, in other words, the science of artistic beauty, is understood to hold an intermediate position between those which are of a physical and those which are of a metaphysical character, partaking to some extent of both. It exclusively relates to impressions made by external nature upon the human mind through the organs of the art senses, as Dr. Oken appropriately denominates those of hearing and seeing. By means of this science harmonic proportion is as capable of being taught, in respect to abstract forms, as it is in the art of music with respect to abstract sounds. Professor Cockerell justly remarks, that harmonic proportion is the fundamental element of the beautiful in architecture, but that it seems to be the last acquirement of the student instead of the first. "We begin," he observes, "by admiring ornaments, details, and forms, but it is at a more advanced stage only that we make all these subordinate to that sense of rhythmical proportion and that harmony of quantities which affect the mind like a mathematical truth, and like a concord of musical sounds on the ear, are perceived and confessed as obvious and unalterable."

Hitherto, however, there has not been any method of practically applying these æsthetic laws in the general practice of the architect, although all enlightened men now acknowledge their existence; and the consequence is, that men of no genius, whenever they attempt originality of design, commit innumerable errors, which are apparent only to men of true æsthetic genius; and the public taste is thus perverted to view with complacency deformity of proportions, and the indulgence of a capricious and often puerile fancy, displayed in an exuberance of so-called ornament. On the perversion of the eye in respect to proportion, Professor Cockerell makes the following excellent observation:—"Custom, convention, and often incapacity of discernment, reconcile us to those proportions we are most used to, and we are blind to those defects which a fresh and accomplished eye is at once shocked at; yet the sense of vision, so studied by the Greeks, is to be educated like the moral sense and every other, by the diligent culture of science." And he further observes, that "the informed artist recognises the claim which this great element of art has above all others on his studious attention," that "he seizes with extreme delight any rule that will conduct his works to the excellence so apparent and so universally admitted in the Greek proportions; he rejoices in any of the slightest elements of their grammar and syntax, by which he can attain to their eloquent language; and he confesses that without them all is caprice, hazard, and fashion, and that the soul is wanting, though some semblance of the external elements, like an empty mask, may be substituted."

It is therefore evident that architectural design, generally speaking, must depend for its improvement upon the universal inculcation of the knowledge of such a law of nature as, when applied to abstract form, would meet a response in that inherent quality of the mind which enables every man, more or less, to appreciate the beautiful.

The elementary forms of architecture are, like the elementary sounds in music, few and extremely simple in their nature. We all know that a right line has only three directions—the horizontal, the vertical, and the oblique. When a horizontal and vertical line meet, they make a right angle, which may with safety be assumed as the fundamental angle, from the harmonic divisions of which by 2, 3, 5, 7, or multiples of these primes, the beauty of every architectural

* From a paper by Mr. D. R. Hay, F.R.S.E. read at the ordinary meeting of the Royal Institute of British Architects, February 7.

design is to arise. When two lines thus making a right angle are joined by an oblique line, the three form the right angled triangle, which is the prime element of all figures employed in architecture. When the two angles made by the oblique line with the vertical and horizontal lines are equal, this triangle may be termed simply the triangle of ($\frac{1}{2}$), because each of the smaller angles is one-half of the right angle; but when the two angles are unequal, the triangle may be named after the smaller of these. For instance, when the smaller angle, which we will suppose to be one-third of the right angle, is made with the vertical line, the triangle may be called the vertical scalene triangle of ($\frac{1}{3}$), and if made with the horizontal line—the horizontal scalene triangle of ($\frac{1}{3}$). As every rectangle is composed of two of these right-angled triangles, the same terminology may also be applied to these figures. Thus the perfect square is the rectangle of ($\frac{1}{4}$), being composed of two similar right-angled triangles of ($\frac{1}{2}$), and when two vertical scalene triangles of ($\frac{1}{3}$), and of similar dimensions, are joined by their hypothenuses, they form the vertical rectangle of ($\frac{1}{3}$), as, in like manner, two horizontal triangles of ($\frac{1}{3}$), united under similar circumstances, would form the horizontal rectangle of ($\frac{1}{3}$).

The rectangle is thus the primary of four-sided rectilinear figures in architecture. When two similar elementary triangles of ($\frac{1}{8}$) are united by their vertical sides, they form an isosceles triangle, which, when the smaller angle is made with the verticle line, may be termed the verticle isosceles triangle of ($\frac{1}{3}$); or, if made with the horizontal line, the horizontal isosceles triangle of ($\frac{1}{5}$). The isosceles triangle is thus the secondary rectilinear figure in architecture.

Each of these rectilinear figures has a curvilinear figure that exclusively belongs to it, to which a similar terminology may be applied. For instance, 1st, the circle belongs to the perfect square, and may be termed simply the curvilinear figure of ($\frac{1}{2}$); 2nd, the ellipse to the horizontal or vertical rectangle, to which may be applied a terminology similar to that applied to the rectangles, so that the vertical or horizontal ellipse of ($\frac{1}{3}$), ($\frac{1}{5}$), ($\frac{1}{7}$), or any other proportional part of the right angle, would be perfectly intelligible; and 3rd, the composite ellipse, which belongs to every isosceles triangle, and to which the same terminology may be applied.

Thus the elementary figures which belong to all the forms employed in classical architecture are comprised in —

The perfect square, or equilateral rectangle,
The oblong rectangle,
The isosceles triangle,
The circle,
The ellipse, and
The composite ellipse.

The latter figure is new and very little understood, and as I have of late greatly improved it, I may state that the composite ellipse is simply a figure composed of arcs of various ellipses harmonically flowing into each other, whose foci are placed on the sides of an inscribed isosceles triangle, and it thus closely resembles the parabolic and hyperbolic curves; but it has what these curves have not, viz. the essential quality of inscribing harmonically one of the rectilinear elements of architecture, while the parabola and hyperbola are merely curves of motion, which never can harmonically inscribe, nor resolve themselves into a figure of any kind.

The law by which the six elementary figures of architecture may be harmoniously combined is a simple and well-understood law of nature, and the mode of its application ought therefore to be equally natural and simple. I therefore lay down two positions, the first of which is, that the eye is influenced in its estimation of spaces by a simplicity of proportion similar to that which guides the ear in its appreciation of sounds; for it is reasonable to conclude that an element which is so necessary to the satisfaction of the one sense should be also requisite to the complete gratification of the other. The second is, that the eye is guided in its estimate by direction rather than by distance, just as the ear is guided by the number of vibrations rather than by magnitude; and I reckon it equally reasonable to conclude that the failure of all attempts to discover the operation of harmonic ratio amongst the various parts of the architectural structures of antiquity has occurred from length, and not direction being made the standard of comparison—from the attempt to apply simplicity of linear, not of angular proportion.

The basis, then, of my theory is this, that a figure is pleasing to the eye in the same degree as its fundamental angles bear to each other the same proportions that the vibrations bear to one another in a chord of music. Now, as the whole science of musical harmony depends upon the simple division into which a monochord, when in a state of vibratory motion, divides itself by notes into ($\frac{1}{2}$), ($\frac{1}{3}$), ($\frac{1}{4}$), and ($\frac{1}{5}$), with their multiples; so, in like manner, I have shown that the whole science of proportion, or harmony of form, depends upon a similar division of the quadrant of a circle. The highest standard of symmetry so estimated is thus deduced from the law, that the angles of direction must all bear to some fixed angle relations expressed arithmetically by the smallest natural numbers. I am strengthened by high authority in the conviction that no other law can be devised half so simple as this; that it accords with the other laws of nature, being but another form of that great law of least effort which pervades and regulates the system of the universe; that the labour it imposes on the eye is simply to measure round a point, and that the measures it demands are the easiest and readiest which could possibly be required to estimate the halves, the thirds, and the other simple proportions of the assigned unit. Also, that no other law could give such repose to the eye, or present its results to the mind in a form so plain and unmistakeable; for it is exhibited under a form which we know the mind to be capable of judging from, being the identical form under which the ear presents to it an harmonious combination of sounds,—and it certainly is in perfect consonance with the wisdom of the Creator, to find sensations so widely different as these brought back to the same ultimate type. Agreeably to this law, as I have just shown, every figure in architecture, whether rectilinear or curvilinear, has an angle which regulates its individual proportions, and, at the same time, determines its proportional relation to such figures as enter into combination with it, whether it represents a solid or a vacuity. Consequently, the system I adopt is easily applied in every formative art where harmony of proportions is an essential element.

In a work lately published, I observed that the human figure exhibits, more than any other object in nature, an equally balanced combination of those three qualities,—fitness, strength, and beauty,—but that while the science of its anatomical structure, as well as of its physiological constitution, in which consist its fitness and strength, are well understood, the nature of its beauty remains involved in mystery. I, therefore, made an attempt to unravel this mystery, and have, I believe, succeeded in showing that the natural principles of the æsthetic development of the human figure are but another expression of that great and universal law of nature which, while it governs the motions and relative distances of those bodies which constitute the universe, and consequently forms one of the noblest subjects of philosophical investigation, also regulates the harmony by which, through the human ear, the mind may be so easily soothed, charmed, or elevated. I also showed that the mode in which this great law operates in regulating the proportions of the human figure is characterised by perfect uniformity and extreme simplicity. Now I find that the general proportions of the portico of the Parthenon are characterised by a corresponding uniformity and simplicity with those qualities in the human figure, inasmuch as it is governed by twelve angles, and that the only lineal measurement required is that of the given base line of one of the porticos; the right angle being taken as the fundamental angle, is thus divided into—

Tonic Angles.	Dominant Angles.	Mediant Angles.	Subtonic Angles.	Supertonic Angles.
($\frac{1}{9}$)	($\frac{1}{6}$)	($\frac{1}{5}$)	($\frac{1}{4}$)	($\frac{1}{3}$)
($\frac{1}{12}$)	($\frac{1}{8}$)	($\frac{1}{10}$)		($\frac{1}{15}$)
($\frac{1}{18}$)	($\frac{1}{24}$)			

By the simple application of these twelve angles I have determined:—

1st. The height of the portico to the top of the cymatium.

2nd. Its division into its vertical, horizontal, and oblique portions.

3rd. The division of its vertical portion into columns.

4th. The relative proportions of the shaft, the capital, and the abacus of these columns with the relative proportions of their diameters at the base and at the neck.

5th. The relative widths of the architrave, frieze, and cornice.

6th. The division of the frieze into triglyphs and metopes, arranged proportionately to the situations of the columns.

7th. The projection of the cornices of the entablature and pediment, with the relative proportions of the latter to the tympanum.

But this would have been little, had the law by which these angles are formed been a mere arbitrary process, governed by no known law of nature. Such, however, is not the case, for it *is* a law of nature, fully as capable of producing the beauty of harmony through the eye, as the law of harmonics in sound is of producing it through the ear.

Proceeding to the curvilinear portion of this great work, I find that it agrees perfectly with the elementary figures; for, as it is composed principally of oblong rectangles and isosceles triangles, its curves are arcs of the curvilinear figures which belong to these. I shall commence with the entasis of the shaft of the column, upon the nature of which so much fruitless discussion has taken place, and so many conflicting opinions have been advanced.

The vertical convex curvature of the column, called its entasis, is produced by a process of equally remarkable simplicity with that by which its proportions were imparted. The semi-minor axis being situated at the necking of the shaft, through which and its major axis the circumference of the ellipse of ($\frac{1}{12}$) will pass, and thus give the entasis of the shaft, while the inclination of the semi-minor will give the width of the channel by which the shaft is divided from the capital.

Another drawing represents a section of the capital full size. The neck is the arc of an ellipse of ($\frac{1}{8}$), the direction of whose semi-major axis is nearly vertical. The curve of the echinus is here wholly composed of arcs of an ellipse of ($\frac{1}{11}$) in four positions, whose semi-major axis at various points is inclined ($\frac{1}{11}$), ($\frac{1}{4}$), ($\frac{5}{13}$), and then is horizontal. The cavettos of the annulets are likewise curves of ellipses of ($\frac{1}{11}$). Nothing, it is presumed, can be more harmoniously beautiful than the simple arrangement of these arcs in the production of this celebrated capital. The cymatium which surmounts the corona, is simply an arc of an ellipse, whose angle is ($\frac{1}{4}$) and whose semi-major axis is vertical. The capital of the antæ of the posticum has over its corona a cyma reversa, which is composed of arcs of two ellipses, whose angle is ($\frac{1}{8}$), the major axis of one of them being inclined ($\frac{1}{6}$), and the other ($\frac{1}{8}$), both on the horizontal line. Under the corona is the moulding termed the hawk's-bill, which is composed of arcs of three similar ellipses, whose angles are ($\frac{1}{3}$), the major axis of the first being inclined ($\frac{2}{7}$) horizontally, that of the second ($\frac{2}{10}$) vertically, and that of the third ($\frac{2}{8}$) vertically. United to the lower member of this moulding is that called the ovolo, which is formed by the arc of an ellipse, whose angle is ($\frac{1}{3}$), and whose major axis is inclined ($\frac{1}{8}$) vertically. Under this there is a fillet inclined ($\frac{1}{10}$) vertically, the whole ending with a bead, whose curve is a semicircle, with its axis on the same inclined line of the fillet. The upper moulding of the band under the beams of the ceiling of the peristyle, which is of the hawk's-bill kind, is composed of three ellipses of ($\frac{1}{3}$), the major axis of the first being vertical, and its minor axis being equal to the projection of the whole moulding; the major axis of the other two ellipses are inclined ($\frac{1}{10}$). The lower moulding of the same band is a cyma reversa, and is composed of arcs of two ellipses, each of whose angles is ($\frac{1}{4}$), and the major axes of which are inclined ($\frac{1}{10}$). The moulding at the bottom of the small step or podium, which extended between the columns of the pronaos and posticum, has a semicircular bead, whose axis is inclined

($\frac{1}{8}$) vertically, and a cyma recta, which is composed of arcs of two ellipses, whose angles are each ($\frac{1}{2}$), and whose major axes are horizontal. Thus the highest curve in this elevation is composed of the ellipse of ($\frac{1}{8}$) vertical, and the lowest of an ellipse of ($\frac{1}{32}$) horizontal. The cavetto and cyma reversa under the cymatium, curves connected with the corona of the pediment, are composed of arcs of ellipses whose angles are ($\frac{1}{8}$), the major axis of that which forms the cavetto being horizontal, and the major axis of those which form the cyma reversa inclined ($\frac{1}{4}$) horizontally. The curve of the soffit of the corona is composed of the arcs of two ellipses, one of an angle of ($\frac{1}{8}$), and the other of an angle of ($\frac{3}{8}$), the major axis of the first being horizontal, and that of the second slightly inclined. The bed moulding is composed of arcs of ellipses, whose angles are ($\frac{1}{8}$), and whose major axes are inclined ($\frac{1}{8}$).

The latest investigations into the principles which govern the beauty of the forms of the various details of the Parthenon, are those of Mr. Penrose, who, while at Athens, in 1846, observed some peculiarities of curvature in that temple, which had been entirely overlooked by Stuart and Revett, and of which no adequate notice had been taken in the works of any later investigator. He therefore obtained through the Society of Dilettanti the necessary facilities for a careful examination of this great work of ancient art, the results of which have been since published, and evince on the part of the author great knowledge of the subject and the most careful and minute research. Of the architectural qualities of fitness and strength which these investigations develope, I do not pretend to judge; but I believe no one can examine the contents of this spendid book without being convinced of the accuracy of the various measurements, and the care that must have been bestowed on every detail. Notwithstanding this, I cannot help demurring to the conclusions at which Mr. Penrose has arrived with respect to the æsthetic developments of the Parthenon; especially to his idea that the entases of the columns are hyperbolic curves, that the soffit of the corona of the pediment is a curve of the same kind, and that the echinus of the capital is composed of two different hyperbolic curves, and one circular curve. In order to prove this, offsets, doubtless carefully measured from a stretched wire, are given with the illustrations of those parts, and this mode of proof must at first sight seem conclusive; but it can only be so in the absence of a knowledge of the composite ellipse and of the various other modes in which ellipses may be combined. For an acquaintance with these will show that arcs of the composite, or mixed ellipse, resemble so closely those of the hyperbola and parabola, that the most careful investigator might be mistaken. In proof of this, I have applied Mr. Penrose's offsets to my drawings, with which they seem to agree, as well as with those of that gentleman. The fact appears to be that the nature even of the regular ellipse is little known, and forms no part of architectural education at the present period. Mr. Penrose says, "By whatever means an ellipse is to be constructed mechanically, it is a work of time (if not of absolute difficulty) so to arrange the foci, &c. as to produce an ellipse of any exact length and breadth which may be desired." This, however, is so far from being the case, that the foci of an ellipse of any relative length and breadth may be easily arranged, and by a very simple machine, which cost me but little trouble to invent, I can in a few minutes describe the curve of an ellipse of any proportions with perfect accuracy. The size of the machine I have at present is such, that by it any ellipse from 1 inch to 44 inches in length can be described by it; but its capability in this way might be extended without much expense to the description of ellipses from 1 to 100 feet in length. This being the case, there no longer exists any difficulty in describing this figure, especially as any intelligent man may be taught the use of my elliptograph in a few hours. Alluding to the formation of the flutes of the column, Mr. Penrose says, with reference to the difficulty mentioned, that, in order to form them properly, "the Greek architects, notwithstanding their love of mathematical curves, adopted an approximate ellipse (made up of arcs of circles), instead of a true ellipse." But feeling quite assured that the Greek architects of the Periclean period were perfectly acquainted with the nature of ellipses, the simplest method of describing them correctly, and the best modes of harmoniously combining them in the production of beautiful forms, I obtained from a cast of a fragment of a column of the Parthenon, now, I believe, in the British Museum, a cardboard mould of one of the flutes, and I found the curve to be composed of the combination of two true ellipses of ($\frac{1}{4}$) whose semi-major axes are equal, and of this I give two examples, one of the size of the flute at the neck of the column, and another of double that size, in order to show the nature of the curve more clearly.

I trust the details I have gone into will be found sufficient to show that one simple, uniform, and natural law governs the individual and relative proportions of all the parts, as well as the beauty of all the curvilinear forms of this magnificent work of ancient Greek art; and that this law could only be applied by a system similar to that which I have endeavoured to explain.

Several members present offered observations on the paper which had been communicated, and strong objections were made to portions of the diagrams exhibited in illustration, and to the system of dividing proportions by particular angles, however convenient in some instances, on which the principle set forth by Mr. Hay was based. Testimony was at the same time borne to the value of his labours in pointing out a system round which members might form their own conclusions. It was held to be very difficult to arrive at any complete or general system for the Parthenon—so much so as to induce some investigators to believe that no fixed formula in its strictest sense existed. Still any person who produced a system with apparently fair grounds of support must be considered as conferring a benefit on the study of Grecian architecture, inasmuch as it would lead to the more complete sifting of the evidence, and might thus serve to establish such points as admitted of proof.*

LANDSCAPE GARDENERS AND GARDENING.†

We rarely see a work on landscape gardening without calling to mind a racy anecdote told by the late Duke of Gordon to Sir Thomas Dick Lauder. "His grace, being desirous to improve the scenery of Gordon Castle, invited a certain landscape gardener from England, one whom we shall forbear to name, though he is long since dead; but we shall say of him, that he was one of that class who

> "With charts, pedometers, and rules in hand,
> Advance triumphant, and alike lay waste
> The forms of Nature and the works of taste.
> To improve, adorn, and polish they profess;
> But *shave* the goddess whom they came *to dress*."

The gentleman delicate and indolent, the weather was gloomy and unfavourable for some eight days or so, and he preferred the comforts of a book and an easy-chair in the drawing-room to exposing himself to the raw damps which prevailed abroad. But as he thus lacked exercise of limb out of doors, he made up for the want of it by exercise of jaws within; and the duke's venison, and hock, and claret, suffered seriously from his daily attacks. But ten days' enjoyment of this "castle of indolence" had not gone over his head when certain alarming twinges in his toe taught him, one evening, that an old monitor was about to revisit him, to remind him of the infinite nothingness and vanity of all human happiness, and next day he was laid up in bed with a swingeing fit of the gout. Some weeks of great suffering and of gradual convalescence, brought him back again to his easy-chair; and by degrees he became so far well as to be able to return to his venison and claret; and, finally, one clear sunshiny day he ventured forth on crutches into the lawn before the castle. There, levelling his opera-glass silently around him for some time, he begged to know in what direction lay the course of the river Spey; and, on this being explained to him,—"Ha!" said he gravely, "I thought so;" and then pointing to a grove of magnificent old forest trees which stood at some distance in the park, "we must open a view in that direction. Your Grace will please to order those trees to be cut before next season, when I shall have the honour of revisiting Gordon Castle, to judge of the effect of their removal before going farther." Next morning this tastemonger took his departure. The noble trees which he condemned bowed their mighty heads before the axe, as many noble heads have bowed before it, under the sentence of judges no less unworthy and merciless. The seasons revolved, and so did the wheels of the tastemonger's carriage, which brought him back to Gordon Castle, where the same scene of sloth, easy chair, eating venison, hock, claret, gout admonitory and gout mordant, recovery, and revisitation of the ground took place. Now, it happens that the Spey opposite to Gordon Castle cuts against lofty friable banks, of a bright red-coloured mortar, which are perpetually crumbling down; and although these were, at the time we speak of, for the most part hidden by the younger and more distant woods towards the boundary of the park, yet it so happened, that whereas no part of the water of the Spey was visible, the tastemonger had no occasion to use his opera-glass to discover a broad stretch of blood-red bank, which, being higher than the rest, was seen towering most offensively over the delicate greens of the offscape, like a troop of heavy dragoons looking over a hedge. "We must throw a clump up in that direction," said the taste-monger, waving his hand toward the place with a very important air: "we must have a clump on that gentle swell, to shut out yonder hideous brickfield." "A clump!" exclaimed the Duke, with horror in his eyes, "Why, my good Sir, on that very gentle swell grew those goodly trees which you ordered to be cut last year, and, if you choose to satisfy yourself of the fact, you may go yonder to look at the roots, which are yet remaining!" The gentlemen was silent; the Duke left him to his own meditations; and the result was, that he had shame enough left to desire his carriage to be got ready and to order it to transport him whence he came, an order which his Grace took no trouble to thwart or to retard."

Mr. Major, we are happy to think, does not resemble the indolent hero of the above narrative any more than Mr. John Jorrocks resembled some of the "Masters of 'Ounds," whom he has described in his amusing "jaunts and jollities," ycleped "Handley Cross." He has been a practical landscape gardener for upwards of forty years; and though the long list of subscribers to his work shows that he has had his noble patrons, he does not appear, if we may judge from the "*effigies vera*" prefixed to his book, to have suffered from twinges either of gout or conscience.

Too many of the craft seem well entitled to assume as their motto—"*Diruit, ædificat, mutat quadrata rotundis*;" and not a few of them need to be reminded of "*Ne sutor ultra crepidam.*" To trench on the province of the architect cannot be expected to find favour in our eyes, and of this tendency Mr. Major is guilty. We can scarcely consent to the landscape gardener being co-ordinate with the architect; but to expect the latter to become subordinate is what we by no means can allow. We opened the book with a bias in favour of Mr. Major, when we remembered that about twenty years ago he was associated with the late J. C. Loudon, in his large work on landscape gardening; but the prepossession has not been strengthened by further perusal of it. The principles of this art are not easily settled, and have been matters of discussion with master minds. Bacon, Milton, Sir Henry Wotton, Sir William Temple, Pope, Shenstone, Mason, Sir Walter Scott, Payne Knight, Jeffrey, and Horner; and amongst the later writers, Mr. James, in his "Essay on Gardening," not the least pleasant of the series of Murray's "Reading for the Rail," have all discussed the essentials requisite for the abode of an English gentleman; so that it is scarcely befitting any one to dogmatise on such a subject. And, after all, the title savours of a misnomer, for the book is restricted especially to what the writer terms "the finer finish of home or dress scenery." Even here the book is defective, as it ought, certainly, to have embraced a chapter on *Ever-*

* A special general meeting of the Institute will be held on the 14th inst. to take into consideration the recommendation of the council with respect to the award of the Royal medal, the silver medals of the Institute, and the students' prize for drawings sent in competition.

† "The Theory and Practice of Landscape Gardening." By Joshua Major. Knowsthorpe, near Leeds. London: Longman and Co.; Leeds: Reid Newsome. 1852. 4to. pp. 204.

greens. These lend a character of life, especially in winter, when close to a mansion, which it is ever desirable to cherish. This has been very happily pointed out in the Rev. C. B. Tayler's admirable volume, "The Angel's Song." A prejudice exists against their being near a house, from the notion that they create damp; but if not planted so close together as to hinder a free circulation of air, they cause less moisture in summer than deciduous-leaved plants, and absolutely none in winter, from the absence of all evaporation. Besides, by not casting their leaves in autumn, they neither disfigure the lawn nor cause trouble to gardeners. The various members of the pine or fir tribe particularly merit cultivation. Ample information respecting the newest and best species may be found in Knight and Perry's "Synopsis of the Coniferous Plants grown in Great Britain. Exotic Nursery, Chelsea." We must give Mr. Major credit for recommending some of the most recent of these, especially the *cryptomeria japonica*. He has said nothing, however, of the *pinus pinea*, or stone pine, the fittest tree of all to be in the proximity of a mansion in the revived Grecian or Italian style. Lastly, we regret to see the names of so many plants inaccurately spelt—a fault which a reference to Mr. Loudon's "Hortus Britannicus" would easily have prevented.

THE GRAVEYARDS.

SEEING the state of the metropolitan graveyards and the general system of interment constantly commented on in your columns, I am induced to throw out a few hints on the subject, having observed the various modes pursued by some of our continental brethren, and which might be well adopted by us. The workhouse plan is revolting to all of sensitive mind.

In Wales and many districts of the United Kingdom, one coffin or shell serves for the whole of the parish poor, it being provided with a false bottom. The coffin is lowered into the grave: the bolts are drawn when the mourners have quitted the churchyard: the venerable coffin is drawn up again, and the corpse is then covered with earth, as though it were the carcase of a brute. Never did I witness such deception abroad; and had N. P. Willis been aware of this fact, he would not have spared us any more than he did the Neapolitan charnel vaults. In France, sanitary measures are far from neglected, far from being unappreciated: there I have seen a plan adopted as a safeguard in the event of leaden coffins bursting, as also for generally rendering intramural interments innoxious. The outer coffin is made about three or four inches larger each way than the inner: this space or interstice is filled with pulverized charcoal prior to the lid being secured; which carbon deodorizes and absorbs the putrid exhalations. In Germany, quicklime is not unfrequently used for a similar purpose, it being a good disinfecting agent. The religious establishments of Italy constantly embalm, or, more strictly speaking, prevent the decomposition of the bodies of eminent ecclesiastics, laymen who have left bequests to the convents, and the brethren of their communities. The crypts or souterrains, where these mummyfied worthies are ranged like sentinels "of the valley of the shadow of death," form places of no inconsiderable interest to travellers; and when visiting them, I have not had my olfactory nerves more offended than when I have walked through the Mummy-room of the British Museum. But I would particularly refer to what I deem to be the best method by the Capuchins, it being one well worthy attention—that of pouring thin hot grouting into the wooden box or shell which contains the body, through a head or stand pipe, in a manner similar to that practised by iron-founders. There is not any need of precaution to counteract the expansion of the grout, as the flesh of the corpse readily yields to the pressure. I should remark, that the body is laid upon blocks or narrow ledges, to allow the fluid to encircle the lifeless frame; and when set and consolidated to form a complete casing of concrete. I have seen these piled up compactly on one another, with the name of the deceased affixed on marble or wooden tablets, and have also had my attention drawn to blocks which had been split open for the purpose of abstracting the semicalcined or cauterized corpse. The cleft block reminded me strongly of a sculptor's moulds. Plaster of Paris or Roman cement might perhaps be used with better effect than lime. Where coffins are deposited in vaults or catacombs, even at cemeteries, it appears to me that it would be desirable to surround them with concrete, or at least with peat-charcoal.

W. M.

THE "GRAVEYARD" OF THE PARISH OF ST. JAMES, PICCADILLY, IN THE HAMPSTEAD-ROAD.

ON Wednesday last a meeting of the trustees of the above burial-ground and a committee appointed by the vestry of the parish met in the burial ground for the purpose of inquiring into its condition. Certainly nothing can be more deplorable. The tombstones are even worse than those already described in St. Pancras. A central footpath has been used up for the purpose of putting into it as many bodies as the space will hold. The roads are almost obliterated; the greater mass of the ground is filled up to the surface with bodies to within from 2½ feet to 1 foot! In one part of the ground were three open graves, from which a man was busily engaged pumping water, which was passed by means of a long hose to the sewer. One of these graves, in which were visible the coffin of a woman, and a young child packed into the little angle left by the narrow part of the coffin, was exactly 2 feet 9 inches deep; another coffin was to be here placed in it, the height of which would be 18 inches, this would leave a surface of 1 foot 1 inch. Description would fail to give an idea of the condition of this ground. The trouble is not even taken to bank up the graves, and no one can walk without being heavily loaded with wet clay,—the surface is thickly mixed with bones and portions of coffins.

Dr. Stebbing, the highly respected resident clergyman of this church, has officiated here for twenty-four years, and during sixteen years he has been resident. At the time of his first commencing duties in this place, the ground was filled with human remains; since then this gentleman has himself attended at the funerals of 16,000 persons!! last year he buried 11,000. Surely this fact is sufficient for any reasonable person. Yet, will it be credited, a petition has been presented by the trustees of this place to the Board of Health, praying the continuance of interments in this yard, stating that it would be agreeable to the inhabitants. We doubt much if this is the opinion of the inhabitants of St. Pancras; indeed, we know many, who, with their families, would be glad to have the opportunity of attending Dr. Stebbing's preaching, but are afraid to trust the health of their families in a place adjoining this packed repository of the dead, and sit above a vault thronged with unburied coffins.

We trust that the inhabitants of the respectable parish of St. James will bestir themselves to put a stop to this disgrace, or surely the inhabitants of the neighbourhood will compel the closing of a place so injurious to all around; indeed, we are told that if it had not been from a consideration for Dr. Stebbing's interest, this would have been long since done.

ARCHITECTS' BENEVOLENT SOCIETY.

THE annual general meeting of members of this society was held on Wednesday, 9th inst. at the rooms of the Royal Institute of Architects, Grosvenor-street; Mr. Sydney Smirke, A.R.A. in the chair. The report which was read congratulated the subscribers on the progress which had been made, and showed that after affording relief to the various applicants, payment of all current expenses, and after investing in the public funds the sum of 75*l*. a balance very considerably larger than that of the preceding year remained in hand at the end of last year. The list of members has increased about fourteen per cent. The report continued,—

"Owing, perhaps, in fact, to the extraordinary extent to which emigration has this last year been carried, the demands on the sympathy and assistance of the society have not been so numerous as they otherwise might have been: but this must of course be regarded as a temporary and exceptional state of things; nor can we hope, in so uncertain a profession as ours, to find that in future years our funds will continue to be relieved by such casual causes of prosperity. It behoves us, therefore, by no means to relax our exertions to extend the means of this society."

The council observe with regret how few of the gentlemen who are practising in provincial towns have hitherto joined the society, and they beg earnestly for the assistance of the general body of members to remedy this deficiency.

"Out of the large sums now annually expended in the erection of ecclesiastical buildings, and other charitable structures, our profession is of course largely benefited, and it would surely be a grateful and appropriate recognition of the pecuniary advantages derived from such sources, if each could be prevailed upon to set apart from them a small sum from time to time towards the alleviation of the mental and physical afflictions of their brethren."

The Chairman, in proposing the adoption of the report, addressed the meeting, and in the course of his remarks said,—

I am happy to be able to congratulate the members on the satisfactory position that the society has already attained. I believe it to be now unnecessary to dwell on the propriety of such a society: the time was when doubts existed in the minds of some estimable men: I never myself entertained the slightest doubt; but there were those who thought the existing means for the relief of unfortunate members of our profession were sufficient: there were those, too, who fancied that our profession might be somewhat degraded by a charitable fund of this nature; as if so natural and praiseworthy a proceeding as the making a purse for the relief of distress could possibly bring discredit on *any* profession. After all, perhaps the best justification of our existence is our present prosperity: depend upon it, if this society were founded in error it would before now have become effete and nerveless, whereas here we are, in our third year, animated and active, looking back to the good already done, and forward to the long course of usefulness before us. The council feel somewhat disappointed that our provincial friends have not joined us so freely and cordially as we had hoped. This must be mainly due to their not knowing or not understanding us: perhaps, too, they may be distrustful, although most unfoundedly so, of our impartiality in the appropriation of the funds. I hope every member of the society will use his best endeavours to excite the sympathy of his country friends, and create in them an interest in our welfare. It is to your kind exertions, gentlemen, that we must chiefly look for the permanent prosperity of our society: and be assured you will not repent of those exertions. We are all, perhaps, somewhat too much engrossed in the pursuit of personal and selfish objects; but the time must come—and no one knows how soon it may come to any one of us—when we shall learn to estimate at its true value the empty, unsatisfactory nature of these objects; and be assured, when that time comes, we shall rejoice in the reflection that we have promoted the objects of this society.

Mr. Tite, as treasurer, then brought the financial position of the society before the meeting, with some hearty expressions of his desire to be useful to all members of the profession.

The balance-sheet to Dec. 31, 1852, looks so healthy that we shall benefit the society by printing it:—

RECEIVED.

Balance at Banker's, Dec. 31, 1851	£34 19 1
Donations	59 16 6
Subscriptions	184 16 0
Dividends	13 5 4
	£292 16 11

PAID.

Advertisements, Stationery, Freemasons' Tavern, Petty Cash, and Writing	£50 9 10
Collector's Commission	12 5 0
Grants made	55 0 0
Cash invested in the Funds	75 2 6
	192 17 4
Balance at Banker's, Dec. 31, 1852	99 19 7
	£292 16 11
Balance at the Banker's, Dec. 1, 1852	£99 19 7
Amount of Stock, 3½ per Cent. Reduced Annuities	476 11 6
	£576 11 1

Various votes of thanks, in the advocacy of which, Mr. Poynter, Mr. Mocatta, Mr. Pocock, Mr. S. Wood, Mr. Good, Mr. C. Beachcroft, Mr. C. Nelson, Mr. Scoles, Mr. E. Hakewill, Mr. Godwin, Mr. Bailey, Mr. Mair, &c. took part (including one to Mr. John Turner, the hon. secretary), were passed unanimously.

EFFECT OF COKE ON CAST-IRON.

INSTITUTION OF CIVIL ENGINEERS.

On the 1st inst. the paper read was "On the Increased Strength of Cast-Iron, produced by the use of Improved Coke," by Mr. W. Fairbairn. The paper commenced with a communication from Mr. Crace-Calvert, on the subject of the improved system of depriving the fuel, whether used in blast furnaces or in re-melting cupolas, of the deleterious substances by which the quality of the iron was deteriorated; or of the adaptation of the system to blast furnaces, when using coal for smelting iron ores.

The object was chiefly to point out what were believed to be the causes of the inferiority of iron, in many works, apart from the varying qualities of the ores. These were stated to be the introduction and application of the hot blast, which had enabled the iron master to reduce into cast and malleable iron, a very large percentage of cinders, slag, and other impurities, containing large proportions of silicate of iron, sulphur, and phosphorus, all of which tended to destroy the tenacity of the metal, and to render it either "red short" or "cold short" and also, when sufficient attention was not devoted, by those who were intrusted with the regulation and charging of the blast furnaces, to the chemical composition of the ironstone, by which the relative proportions of the flux and fuel employed in its reduction, should be regulated,—the chemical composition of the limestone, or the coal not being sufficiently known, these materials often varying in quality as much as the ironstone itself,—and the iron smelter was unable to tell, with certainty, the quality of iron which his furnace would produce: instances have occurred where a siliceous ore had been used for three or four hours successively, and then at once it had been replaced by an aluminous and sometimes by a calcareous ironstone, without the change being made in the proportions of limestone, or coal, which was evidently required by the different qualities of these ores.

The following analysis exhibited the different quantities of silicium existing in cast-iron:—

White Grade.	Monkland.	Coltness.	Eglinton.	Dalmellington.
0·18	1·53	2·69	3·12	4·42

The injurious action which an impure fuel had upon the quality of the iron, was particularly alluded to; and the necessity of removing the sulphur from the coal, or coke, when employed in the blast furnaces, before it could be imparted to the cast-iron during the process of smelting, was strongly enforced. The difference in the quality of iron smelted with coal, and by the application of a process, which had been recently introduced by Mr. Crace-Calvert, of Manchester, compared with iron smelted in the ordinary way, was exhibited in the following analysis:—

PROPORTIONS OF SULPHUR.

Eglinton Pig Iron	Melted in the Cupola with ordinary Coke.	Melted with improved Coke.
0·336	0·281	0·191

The following table showed the improved quality of iron after the application of the chloride of sodium in the blast furnace, by which the proportion of sulphur had been diminished.

Monkland without chloride.	Monkland with chloride.	Dalmellington without chloride.	Dalmellington with chloride.
0·390	0·150	0·956	0·218

And the increased bearing weight of 1 inch bars, cast from these irons:—

579°	627°	487°	556°
576°	655°	456°	525°
		487°	544°
		470°	562°
			569°

These improvements were described to have been effected, at a very small cost, by the following simple process. If the blast furnace was worked entirely with coal, chloride of sodium was added, with each charge, in proportion to the quality of the ore and flux employed; but a better result was produced if the coal was previously converted into coke, and the excess of the chloride was used in its preparation, in order to act on the sulphur of the coal and of the ore, should any be found therein; and a greater improvement was manifested in the quality of the iron, when only coke so prepared was used in the blast furnace.

The second part of the paper gave the results of a series of experiments which had been made by Mr. Fairbairn, upon trial bars one inch square, cast from iron melted in the cupola, with coke, prepared by the process of Mr. Crace-Calvert, and exhibited specimens of the iron so prepared, when the closeness of texture and the absence of the "honey-comb" appearance, prevailing in the iron cast with the ordinary coke, was clearly demonstrated. The mode of experimenting was described, and the results were given very elaborately, and it was shown that the average increase of strength was from 10 to 20 per cent.

Taking the mean of the whole experiments, the following conclusions were arrived at:—

	lbs.
The mean breaking weight of the bars per square inch, melted with the improved coke, was	515·5
Ditto ditto with ordinary coke	427·0
	= 88·5

in favour of the castings produced from the improved coke, or in the ratio of 5 : 4.

On the 8th, a paper was read entitled "Experimental Investigation of the Principles of Locomotive Boilers," by Mr. D. K. Clark, (Edinburgh).

ELECTRO-MAGNETISM AS A MOTIVE POWER.

Your journal, p. 53, contains an article entitled "Steam not superseded," bearing the signature "R.R." As a palpable illustration of the views of your correspondent, the case of "Electricity *v.* Steam" is specially instanced, as an appropriate example of the great value of steam, in an economical point of view, when compared with electricity. I presume that by electricity is meant the application of "electro-magnetism as a motive power," and that the table inserted is taken from the researches of Messrs. Hunt and Joule, made some time since, that is to say about two years ago, for the purpose of testing the relative expense of effecting mechanical work by means of steam and electro-magnetism. As, in common with many others, the subject has occupied a considerable portion of my time for the last fifteen years, and as my honest conviction is that, in point of economy, efficiency, and safety, electro-magnetism may in most, if not in all cases, be substituted for steam as a prime mover, I do not hesitate to ask your indulgence in giving attention to the few following remarks on the paper alluded to.

In the first place, the researches of Messrs. Hunt and Joule were made with a model constructed on Davenport's principle, which those who have practically worked on the subject must unhesitatingly pronounce as incapable of leading to just conclusions. Small and very elegant models on this principle have been constructed by Messrs. Watkins and Hill and others; but their power decreases nearly in the proportion of the square of their size, and a point is soon arrived at when the largest battery ever constructed would not even move the central bar when placed in an unfavourable position. The very small distance at which any practically available power can be obtained from the electro-magnet leads to a result entirely prohibitory of this method: the maximum force can only be felt at a few points traversed by the central bar, whilst *the consumption of zinc is a constant maximum*: thus, in the best-constructed models on Jacobi's or Davenport's principle fully seven-eighths of the zinc consumption is waste. Those who take an interest in the superb theory of Professor Faraday, on the "lines of magnetic force," will also estimate the immense inferiority of attractive force exerted by an electro-magnet passing before another at right angles to its axis, as compared with the mutual attraction of these magnets, when acting in the direction of their respective lines of force. With reference, moreover, to the expense of electro-motive power, vast improvements have recently been made in the construction of galvanic batteries, and Lieutenant Martin Roberts has perfected arrangements which promise to enable us to work electro-magnetic engines without any expense of material, so far as the galvanic current is concerned. Should this consummation be attained, electro-magnetism must take a high position as a prime mover, especially for marine engines. In long voyages the whole of the space occupied by boilers and fuel may be rendered available for passengers and freight: this amounts in the *Asia*, trans-atlantic steamer, to at least 800 tons. A letter in the *Times*, dated December 6, 1852, states that the consumption of coal to and from Calcutta costs from 8,000*l.* to 10,000*l.*: 2,500 tons of coal being required in the ships of the Eastern Steam Navigation Company. I, of course, fully accede to your correspondent's remarks on the absurd attempts to cheat nature by unnecessary intermediate appliances between the labouring force and the work done. That the latter can never be a full equivalent of the former is a fact recognised by the merest tyro in machinery, and it is to be regretted that so much time and labour are constantly expended in the hopeless task of eliciting new functions from the elementary mechanical powers.

George Kemp, M.D. Cantab.

DECORATION OF ST. PAUL'S CATHEDRAL.

We hear, without any gratification, that Thornhill's paintings in the dome are to be restored forthwith. Mr. Parris, to whom the work is entrusted, has formed a scaffolding in the dome, which is thus described by the *Morning Advertiser*:—"The skeleton, or framework, supporting the platform upon which the artists will work, consists of nine poles, each 30 feet long, one end of which rests upon the cornice above the windows, and at the base of the cupola (60 feet above the whispering gallery), where they are securely bolted and shackled (the bolts running through the cone of the dome, 2½ feet thick), the other end of the poles being suspended by wire cables from the upper middle gallery, and these again to the supporters of the outer dome. On these poles are others diagonally lashed, and upon this framework will rest the platform, or gallery. Mr. Parris intends limiting the work to one compartment at a time, thereby preventing the entire surface of the cupola being hidden from view by one circular scaffolding. On the restoration of one compartment, his gallery will be transferred to the next, and so the whole of the restoration will be completed."

SIGHTS AND SCENERY.

"Macbeth" at the Princess's.—A correspondent professes to be angry with us for omitting to mention the name of the architect who was concerned in the production of the scenery for Mr. Kean's fine revival of "Macbeth," and says we "often do so." Literally, we cannot *often* do so, because such an incident is of very rare occurrence. If the writer means that we often omit the architect's name in our mention of new buildings, we may assure him that when this does occur, it is simply because we have been unable to learn the name. Architects themselves have it in their own power to prevent the omission. In the case of the scenery in question, we omitted saying it was Mr. Godwin who superintended it, merely from motives of delicacy, which most of our readers will understand. The piece has deservedly proved most successful. Her Majesty and the Prince have been present at two representations of it, and the house is crowded to the ceiling every night. It ought to give assurance to managers that if they do good things well they will not lack an audience.

Drury-lane Theatre.—Some time ago we gave an account which had reached us of an American who had the power of walking on a ceiling with his head downwards, by the same means as those possessed by flies, namely, the removal of the air from between the

covering of his feet and the ceiling. There was afterwards a report that he had fallen in consequence of the ceiling giving way, and was killed. Whether so or not, and whatever the mode may be of producing adhesion between the foot and the ceiling, an American, named Sands, performed the feat before our eyes at Drury-lane on Monday evening, and is repeating it nightly. There appears to be no trick about it. A smooth and highly-polished ceiling is erected over the stage. At each end of it is suspended a basket chair. Having ascended into one of these by a ladder, he secures to his feet by loops two oval soles, then holding by his arms to the seat, he puts up his feet to the ceiling, and, making them cohere, he begins his walk with the body perfectly straight and head downwards. It is the most extraordinary achievement of the kind that has ever been witnessed, and will doubtless draw crowds for many nights to come.

The Amateur Musical Society, under the honorary management of Mr. Henry Leslie, brought its account to a close last year with a balance in hand of 119*l.* 8s. 1d.; and has now recommenced operations with spirit and a strong band. At the first concert on the 7th instant, Mendelssohn's symphony in A minor, and a funeral march to the memory of the late Duke of Wellington, by Vincent St. Jervis, were the salient points. At the second concert to be given on the 21st, Beethoven's symphony No. 1 in C is to be performed.

PROVINCIAL NEWS.

Brettenham.—St. Andrew's Church here, has been entirely rebuilt, except the lower part of the tower, with an addition of north and south transepts. It was opened on 24th February. The whole expense has been defrayed by Lady Buxton, and the rebuilding has been carried out under the direction of Mr. Teulon, architect, in the Florid Decorated style. The chancel was burnt down 160 years ago, and has not been used since. It is restored in strict accordance with the ancient remains. The subject of the stained east window is the Birth, Death, and Resurrection of our Saviour. The floor is laid with Minton's encaustic tiles. The north transept, to receive the organ, has a spirically triangular window filled with stained glass—subject, the Adoring Angels;—and the south has the Transfiguration; the west tower window, the Call of St. Andrew. The stained windows have been executed partly by Mr. Gibbs, partly by Messrs. Wilmhurst and Oliphant, and partly by Messrs. Shard and Nixon. The woodwork is executed with English oak, the bench-ends with sunk panels and tracery heads, by Mr. Wortes. The walls are built with stone from the neighbourhood, with Caen stone windows and dressings outside and in, with Scripture texts over the heads of doors, windows, transepts, and chancel arches. The walks are laid with Peake's best 6-inch tiles. In the tower is hung a new peal of five musical bells, by Taylor and Son. Mr. Cushing, of Elmham, Norfolk, was the contractor.

Bolney.—The following tenders for a new aisle, &c. to Bolney Church, Sussex, have been lodged:—

Burstow, Sen. Horsham	£830	0	0
Vincent, Bolney	828	10	6
Butcher and Wood, Ditchling	805	10	0
Holloway, Cuckfield	755	0	0
Ockenden, Crawley	709	0	0
Dalby, Stryning	688	13	0

Romsey.—The new Town-hall Committee met on Wednesday week to receive a plan of the proposed building, designed by Messrs. Hinves and Bedborough, of Southampton.

Salisbury.—Lots for building purposes, according to the *Wilts Standard*, are to be laid out, at the desire of Miss Master, on the land called the Leauses or Gregory's Nursery, and extending to about thirty acres. Seven or eight streets are intended to be laid into something like a new town. The plan in outline has been prepared by Mr. T. B. Bravender, of Salisbury.

Ledbury.—Extensive additions are being made to the eastern portion of Eastnor Castle. Mr. Henry Day, of Worcester, architect, is charged with the carrying out of the works. Mr. Day has for some time been engaged in planning and superintending the erection of new farm-houses and homestalls on an improved principle upon estates in Worcestershire and Herefordshire, for the late and present Earl Somers.

Worcester.—At the Cathedral improvement is going on under the direction of the cathedral architect, Mr. Perkins. The walls of the choir, together with the arches, mouldings, spandrel carvings, and shafts of the triforium and clerestory, are being scraped and denuded of whitewash, in order to ascertain what will be the effect of exposing the Purbeck marble of which they are constructed. The College-hall (formerly the monks' refectory) is now warmed by a hot-air apparatus, furnished by Messrs. Haden, of Trowbridge. A new entrance doorway to the hall has just been opened from College-green, the object of which is to prevent the schoolboys passing through the cloisters, the carvings and mouldings of which have been much mutilated by the scratchings and cuttings of these lads.

Holyhead.—Recent heavy gales have produced a great loss of property at the New Harbour of Refuge here. Every one of the piles for the south pier was washed away, and large timbers strewed the shore in every direction. Such was the violence of the sea for more than twenty hours, that on the north pier the piles, staging, and even the stonework were swept away. Hundreds of workmen, it is said, have been thrown out of employment, but only temporarily, we should hope, for there must now be more than ever for them to do, unless the works are to be given up in despair.

Wolverhampton.—Active measures, according to the *Wolverhampton Chronicle*, are in contemplation with the view of improving the common lodging-houses and the dwellings of the poor and labouring-classes generally in this large and rapidly-increasing town. The subject has lately occupied the attention of Viscount Ingestre, who proposes to introduce improved common lodging-houses into this town, on the model of the one founded at Leeds by Mr. Beckett Denison,—an institution which has paid a net profit of nearly equal to 6½ per cent. per annum on an outlay of 700*l.* Lord Ingestre states that if the Lodging-House Act were strictly enforced in Wolverhampton, 800 to 1,000 persons would be houseless every night. The leading noblemen, country gentlemen, ironmasters, &c. of the district are to be invited to attend a meeting to be held in course of the month, when a matured plan will be submitted for further discussion. It is proposed to carry out the undertaking by means of shares.

Bedminster.—The chief stone of the Temperance-hall and Mechanics' Institute was laid on Monday, in last week, on ground adjoining the station-house, and belonging to the corporation. It will be erected in the Elizabethan style. The lecture-room will be 53 feet by 31 feet internally, and will have a gallery or platform at the end, arranged with three tiers of seats. The reading-room is to be 21 feet by 14 feet. There will be a boiler-house (for tea parties), 18 feet by 14 feet. A water-tap is to be provided for the reading-room. The whole building will be enclosed with an iron palisading, and its estimated cost is between 600*l.* and 700*l.*

Liverpool.—Glass plates for the electric light at the south end of the Prince's-parade are daily expected from France, and as soon as they arrive this light will be put in operation.

Manchester.—The local *Courier*, in describing the discovery and extinction of a fire in a large establishment in Deansgate, says, "Upon examination it was ascertained that the fire commenced in some beams which had been placed under the hearthstone, which latter was somewhat cracked. A very large fire had been kept in the show-room during the whole of Saturday, and the beams had been ignited from some cinders working through the fracture. The beams beneath the fire-place were quite burned, and those under the floor, with the flooring-boards, were much charred. The first discovery of the smoke at so great a distance from the seat of the fire, may be accounted for by the fact that one of the burning beams was found to run into one of several ventilating shafts at the opposite end of the room, which passed up the wall behind the cupboard in the work-room. The very sudden bursting forth of the flames upon the removal of the carpet, was no doubt due to the presence of a quantity of gas, which had escaped between the boarding, in consequence of the melting of two lead gas-pipes. The damage is estimated at from 108*l.* to 110*l.*"

Holmfirth.—A general advance of wages has been demanded by the masons in this district, and the result has been, that the best men have been retained, and the poorer ones let go. The labourers are out on strike, as the masters decline to give the wages they ask (18s. per week). The joiners and carpenters have also intimated to their employers that a general rise of wages from 24s to 26s. will have to be given from the 1st May.——The Interment Committee of the local Improvement Commissioners having failed to obtain the sanction of the vicar or the Bishop of Ripon to their plans for a new cemetery, mainly on the ground that the chapel intended for consecration would touch an open arch the opposite pier of which would touch a chapel intended for the use of Dissenters; the opinion of Mr. Bramwell, barrister-at-law, on the subject was obtained. Mr. Bramwell states it as his opinion, that the bishop is bound by law to consecrate the chapel when erected, and that he cannot prevent its erection; but he recommends that it be consecrated before any contact is made with the unconsecrated chapel, the arch to be afterwards added, there being no rule that he knows of to prevent such a mode of meeting the difficulty. Might we, with all due reverence, suggest, that so long as a consecrated building is connected with an unconsecrated by one common mother-earth, there must be as complete a medium for the transfer of the consecrating influence beyond its destined limits and into the unconsecrated material, as through any intermediate archway that ever was built of either brick or stone,—both of which materials are themselves of the earth, earthy, and not more likely to permit of any undue transfer of spiritual influence than the stone or earth on which the whole may stand in common. Mr. Bramwell is of opinion that no ordinance or usage of the Church of England is "so absurd, so uncharitable, or so unchristian, as to prohibit the erection or consecration of a church, chapel, or place of worship merely because it adjoined a building which adjoined another used by a body of Christians not members of the Anglican Church." The Commissioners have resolved, by 14 votes to 5, to proceed on the opinion given; and Mr. C. Pritchett has been appointed architect, and authorised to commence the works.

Leeds.—A smoke inspector has been appointed by the town council.

Preston.—On the plans prepared by Mr. Shellard, of Manchester, for the improvement of the parish church in this town, the edifice will be completely changed in appearance, both internally and externally. A spire is to be raised on the tower, the height to the vane being 201 feet 9 inches. The eastern window is to be enlarged by the addition of a Gothic tracery head, with "cusp" points. The other windows will be enriched with ancient Gothic tracery, and the doors are to be made in imitation of those at St. John's, Lytham. Internally, the church is to be re-pewed: there will be an additional aisle to the chancel, concealed from the chancel itself by a screen, 11 feet high.——To St. Peter's church, according to the local *Chronicle*, it is in contemplation to add a chancel, and a portion of the requisite fund has already been subscribed. The tower and spire are now completed, as also the encaustic floor to the mortuary chapel. Mr. Mitchell, of Sheffield, was the architect.

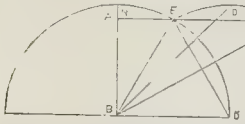
Ulverstone.—The roof of the concert hall here lately erected has become insecure, and is to be immediately taken off, and the walls raised. The roof is without a tie-beam, and the great pressure of the rafters is causing the side walls to yield.

Shields.—St. Stephen's National Schools, in South Shields, according to the local *Gazette*, are nearly completed. They contain separate school-rooms for boys, girls, and infants, and will supply accommodation for nearly 600 scholars. The plans are from the office of Mr. John Dobson, architect, Newcastle-on-Tyne; the general arrangement being in accordance with the latest recommendations of the Committee of Council on Education. The boys' and

girls' schools are each 77 feet by 17 feet. The infants' school is 48 feet by 22 feet, and has two galleries, and each school has a class-room attached, 20 feet by 14 feet, with a gallery. The teacher's residence is distributed throughout the floor above the infants' school and its class-room, and contains a kitchen, scullery, sitting-room, and three bed-rooms. Separate play-grounds are provided,—one for the boys, another for the girls and infants. The whole estimated cost is about 1,450*l.* exclusive of the site, which was purchased and given by the dean and chapter of Durham. This sum includes books and apparatus, and lighting with gas for evening adult classes and other suitable purposes.

TO TRISECT HALF A RIGHT ANGLE.

LESLIE, in his "Geometry" (p. 247, second edition), gives the construction, and demonstrates the trisection, of half a right angle. I believe the following construction original, and it appears to me more simple than that of Leslie; likewise, it will give the trisection of a great number of particular angles. If you think it worthy of a place in the *Builder*, so that it may come before your numerous mathematical readers and receive the assent or dissent of your correspondents, I will, on its appearance, send you other constructions and proofs of what I have done as regards the illustration of this famous problem.



Draw the right angle ABC, and bisect it with the line BD; on BC construct the equilateral triangle EBC; draw EF parallel to BC, and make it equal to BE; join BF, and it shall trisect the angle DBC, which (by cons.) is half a right angle. Because EF is equal (by cons.) to EB, the angles EFB, EBF, are equal (1·5); likewise they are equal to the angle NEB (1·32); and they are equal to EBC (1·27): therefore the line BF bisects the angle EBC, and FBC is equal to the half of EBC. But EBC is equal to four-sixths of a right angle (1·32): therefore EBF is equal to two sixths of a right angle; and because EBC is bisected by the line BF, the angle FBC is equal to two-sixths of a right angle, and the angle DBC is (by cons.) the half, or three-sixths of a right angle. Take away the angle FBC, and the remaining angle DBF is equal to one-sixth of a right angle, or one-third of half a right angle; bisect FBC, and DBC is trisected, which was to be done.

THE VENTILATION OF GUY'S HOSPITAL.

WITH reference to the interesting description of the additional building at Guy's in your journal, p. 116, *ante*;—when the air flues running through the building are free from damp and thoroughly dry, the system will ensure a great rapidity of action: its efficacy in the supply of fresh air is indicated by the uplifted tell-tale (*i.e.* a slip of paper), secured to the top of the upper part of the perforated iron guard over the opening or inlet, which floats nearly at right angles.

One great advantage secured by this system of ventilation is, the admission of a variety of cases of disorders and fevers which would require distinct wards for their peculiar treatment. Such an arrangement should, at the same time, secure any patient from the effects of the exhalations or gases that may emanate from patients or otherwise, and mingle as they may to be carried past and make their exit through the outlet flues, the tops of which are nearly level with the head of the patient while in bed, and close by its side.

In winter the fires kept in the wards will help to obviate this in some degree, as the draught occasioned by the combustion of the fuel will cause some of the gases to pass away in that channel: in summer there will be no such effect, and the patient would breathe every state of atmosphere passing by or over the head in its passage to the outlet flue. If, for the sake of uniformity, the beds must be placed as they are at present, I would suggest that some modification be made in the position of the outlet flues. If placed in the floor at the foot of the patient, the vitiated air would be carried away, instead of being conducted to the patient.

The system applied to prisons requires modification to suit hospitals.

There is another subject I would suggest attention to, and that is, with regard to the blinds of the windows. These are pulled or rolled up as in ordinary use. In private, most cases of sickness require the blinds pulled down for the relief of the patient, whose general strength is prostrated, but in public hospitals this cannot always be obtained. I would suggest that blinds be placed below, fitted under the window-board, and made to pull up and meet the upper blind midway, so that either blind could be used: the patients who are compelled to lie in bed would be greatly relieved by the bottom blind being raised, and the ward not the less cheerful, as the light would be admitted from above and diffused more agreeably.

J. L. D.

BUILDING AND OTHER MEMS. IN IRELAND.

The Phœnix Park improvements have cost within the last twelve months upwards of 1,000*l.*

The Duke of Leinster, as Grand Master of the Masonic brotherhood in Ireland, has fixed on a site (now occupied by a stage-coach yard) for the new masonic hall to be erected at Dundalk.

A new Roman Catholic church has been built at Dangan, county Tipperary, from the designs of Mr. P. Byrne, architect. The edifice is capable of accommodating a large congregation, and has a tower with spire. The style is Gothic; cut-stone buttresses, twelve in number, with windows between them, are distributed on the exterior, which is finished. The interior, which still remains in an incomplete state, is approached by five doors. The plan comprises the ordinary arrangements of nave, chancel, &c.

Alterations and repairs have been made to the chancel of Killaloe Cathedral. A high pitched roof of open timber work has been substituted for the old covered ceiling. The proportions of the eastern window have been thereby better developed. In the course of cleaning operations, &c. a piscina and other features on the south side of east window were (we learn) brought to light; also a doorway on the north side of chancel, which is said to have communicated with sacristry, and another doorway behind the stalls, which served as an entrance. Traces of a groined ceiling are supposed to have been discovered.

Two beams gave way lately under the southern extremity of the suspension-bridge over the Kenmore Sound, which caused a circle of superincumbent earth, 6 feet diameter, to sink considerably. We believe, however, none of the catenaries were effected.

WALTHAM ABBEY CHURCH AND ITS PROPOSED REPARATION.

MANY of our readers know the Abbey Church of the Holy Cross at Waltham, and its interesting historical associations. In the middle of 1851 some steps were taken with the view, if not of restoring, at least of doing what was necessary to preserve the building, and Mr. Ambrose Poynter was consulted upon it, and presented a report, from which we take some particulars.

The church consists in its present state of the nave only of a much more extensive edifice. The scanty records which are preserved of its former condition indicate that there was a tower eastward of the present existing buildings, and, coupled with the remains of the original structure in that direction, they afford sufficient evidence that the church was originally cruciform, with a tower at the intersection of the transepts with the nave and choir. The tower appears to have been in a state of decay in 1544, and subsequently to have fallen. This must have occurred before 1556, since in that year gunpowder was used to blow up the remains, probably of the easternmost piers. In 1562 there is a record of "old walls" being taken down; and in 1563 of a staircase being removed, and of the timber in the vestiary of St. George's Chapel being sold; and for several years after this period the churchwardens appear to have driven a considerable trade in lead, stone, and timber. These circumstances mark pretty accurately the period at which the church was reduced to its actual limits.

The architecture of the existing church, with the exception of the two westernmost compartments and of the chapel now used as the vestry, is of an unmixed Norman character, not dating later than the early part of the twelfth century. The interior elevation of the nave consists, like most large churches of that period, of a lateral arcade with a triforium and clearstory above, but the builders left it in a very unfinished state, and it has never been completed. The triforium consists in each compartment of an open arch as wide as the main arch below. The appearance of a column in the middle of the thickness of the wall on each side of the arches, indicates that they were to have been divided by subordinate arches in the manner common at this period; but there is no corresponding member in the archivolt over the projecting column, nor any indication of a middle shaft having ever been fixed in any one compartment, or that the work was ever advanced beyond its actual state. It was intended to light the triforium from the outside by circular windows, of one of which a remnant is left on the north wall.

Although some remains dug up eastward of the church bear the characteristic features of the Early English style of Gothic, nothing appears in the architecture of the existing structure to indicate any alteration until the rebuilding of the west front, a work of the early part of the fourteenth century. It appears to have been the intention of the builders to assimilate the rest of the church to this beautiful screen in the same manner as in the alteration of the Norman work of the nave of Winchester Cathedral by William of Wykeham at a later date, and that the architect may have been deterred from proceeding further.

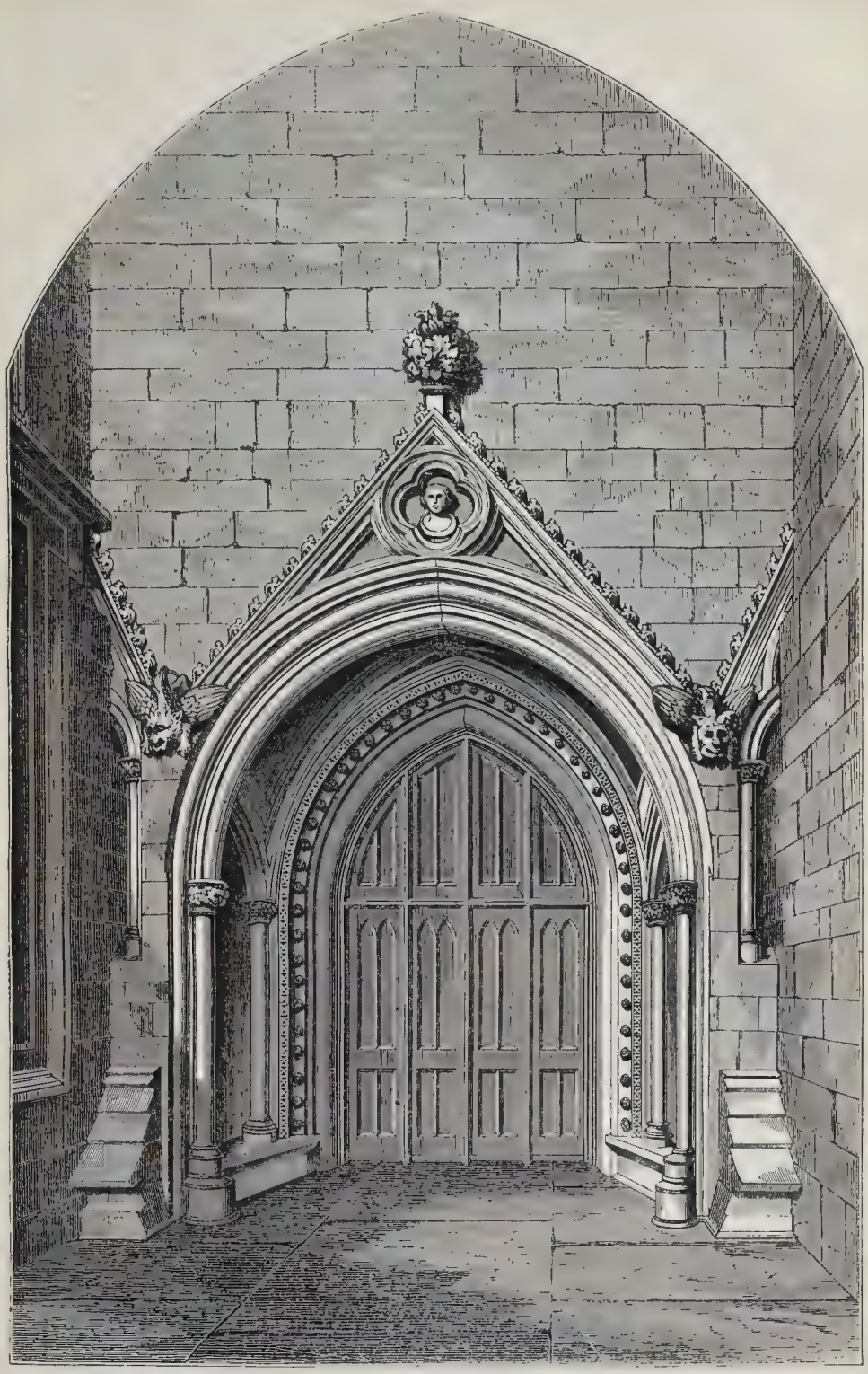
The building of the existing tower at the west end of the church is on record. The materials taken down from the eastern portion of the building contributed to its erection; and the outer entrance-door, with the window above, have evidently been appropriated from some structure of the fourteenth century. The upper part appears to have been either rebuilt or re-faced in 1798.

The construction of the original Norman building is of the most massive description. It is throughout of rubble work faced with free-stone ashlar. The structures of the fourteenth century are faced with a mixture of freestone and flint, and part of the internal moulded work is of clunch. Of the tower little need be said; it is of the most substantial construction, and shows no symptoms of dilapidation or decay in any part. The roofs are modern.

The report proceeds to point out the various settlements and deviations from the perpendicular which the building presents, and the steps to be taken for their remedy. It appears that with the exception of the subsidence of a pier on the south side of the nave there is nothing in the substantial condition of the building to affect its stability for ages to come. Its reparation in that particular is essential, but that once effected, there is nothing that may not be safely and permanently restored without involving to any considerable extent the reconstruction of the fabric.

Since the report was presented the restoration of Waltham Abbey has been begun, under the direction of Mr. Poynter, with the stone-work of the west doorway,—a remarkably pure specimen of the period to which it belongs. Of this we now give an engraving. It was greatly dilapidated, less from the effects of time than by violence, partly inflicted within memory. The arch was originally flanked with tabernacle work. The remains of this still appear on each side of it, the rest was destroyed or walled up by the building of the tower, within which as by a porch this beautiful doorway is now inclosed.

We are anxious to draw attention to the proposed restoration, and shall be glad if we can induce any of our readers to assist in it.



DOORWAY, WALTHAM ABBEY CHURCH, RESTORED.—Mr. A. Poynter, Architect.

AUCTIONEERS' STRAINS.

DEAR MR. EDITOR,—Oh! I have made such a discovery, and I want you to spread it about. I am so fond of poetry. I always sleep with "Childe Harold" under my pillow, and carry the "Gardener's Daughter" in my workbox. I look for sentiment everywhere, but with very little success: people say we have no poets now: the steam-engine has swallowed them all up. Wicked steam-engine! One, however, has escaped. O! I *am* so glad. And I found him the other day,—where do you think? Amongst the advertisers in the *Times*, and I have cut out some specimens for you to rescue him from that gulf, and give him an immortal individuality. Now, listen:—

"DIGNIFIED HOME ON THE WARM WORTHING BEACH.—Mr. Allafraid Hoax calls attention to Augusta House, sidling in brightness, and gazing on the bespangled expanse of the wild frothy sea, while sheltered within an amphitheatre of the finest chalk, South Downs, and fronted by smooth sands of notorious excellence. Every grateful gleam of sun-light with which the Sussex coast is warmed illumes Augusta House, while sun sets at sea but for silvery moon through star-light to wend her majestic way."

Isn't it nice? It beats Ossian. Here is another outburst from the same exalted pen:—

"WEST CANADA.—Miniature Mansion and Domain of 220 acres.—Mr. Hoax [ought it not to be *Coax*?] is deputed to declare that the descriptive particulars of this broad-acre prize are ready for distribution, being republished, with conditions of sale, for sale on the 25th, should the treaty now pending be dissipated among the changes and peradventures all around, and if some private negotiant do not sooner appear. Mr. Hoax is well aware of the distance to that lovely colony where his client's estate lies, although he might easily have forgotten it from its accessibility, and the pure English character of the farms; but the long printed sale circular of the little principality is illustrated by coloured portraitures, on view at the auctioneer's offices, from whence the visitor may travel in half-an-hour to the banks of the Chippewa river, and inspect the property in thought."

Charming notion: such easy travelling,—and so cheap. I can't say much for the English, and I certainly should never think of buying on such a description, even if I had any money, which I haven't; but then it is *so* pretty,—*so* poetical,—that I can't help sending it to you as an example to other public exponents of property. I am your constant reader, and I know the letters to "Dear Sorillah" by heart, so you really must print my letter, and thus delight

OCTAVIA ISABELLA MUSIDORA JONES.

Notices of Books.

Lectures on the Results of the Great Exhibition of 1851; delivered before the Society of Arts, Manufactures, and Commerce, at the suggestion of H. R. H. Prince Albert. Second Series. Bogue, Fleet-street. 1853.

THIS volume completes the record of the lectures on the results of the Great Exhibition, delivered at John-street, Adelphi; and the whole constitutes, like the catalogue, an essential portion of the general record of the International Exhibition of 1851. The volume now published contains addresses by Mr. John Wilson, F.R.S.E. on Agricultural Products and Implements; by Mr. James Macadam, jun. on the Flax Plant; by Professor Tenant, on Gems and Precious Stones; by Mr. Thomas Bazley, on Cotton; by Mr. S. H. Blackwell, F.G.S. on the Iron Making Resources of the United Kingdom; by Professor Shaw, on the Manufacture of Glass; by Mr. M. Digby Wyatt, on Form in Decorative Art; by Mr. Owen Jones, on Colour in Decorative Art; by Mr. H. Forbes, on the Worsted, Alpaca, and Mohair Manufacture of England; by Professor Ansted, on Non-Metallic Mineral Manufactures; by Mr. L. Arnoux, on Porcelain and Pottery; and by Mr. H. Cole, C.B. on the International Results of the Exhibition of 1851.

To Professor Ansted's lecture, in particular, and to Mr. Cole's, we would direct the attention of our readers. Professor Ansted's contains a masterly *résumé* of the results of the Exhibition as regarded stone, slate, granite, marble, alabaster, and spar, both massive and inlaid; other manufactures in cement, plaster, and artificial stone; and others in burnt clay,—bricks of course included. The present condition of all these manufactures in different countries is here sketched; the prospects of improvement observable or desirable in some, and the relative importance of the various objects in all. Some of the other lectures appeared in our columns at the time.

The Encyclopædia Britannica; or, Dictionary of Arts, Sciences, and Miscellaneous Literature. Eighth edition; greatly improved. Edited by THOMAS STEWART TRAILL, M.D., F.R.S.E. Adam and Charles Black, Edinburgh; 1853. Vol. I.; Part 1.

THE long celebrated seventh edition of this work is about to be superseded by a new and still further improved edition, in which men of eminence in art and science are to be employed as before in bringing up the subjects with which they are respectively familiar to their present state of advancement or development.

The part now issued consists of the well-known treatise of Dugald Stewart on the philosophy of the human mind, and the history of that philosophy. This is the first of those celebrated dissertations by which previous editions of "The Encyclopædia Britannica" were graced. The dissertations of Stewart, Mackintosh, Playfair, and Leslie, will all be included in the first volume of the new edition, that of Mackintosh being accompanied with a preface by Professor Whewell; and two new dissertations being added, one by the Archbishop of Dublin on Christianity, and another by Professor Forbes in continuation of those on Physical Science.

It would be entirely out of place here to make any critical remarks on the part now issued. On the general subject of metaphysics, however, we may take the opportunity of quoting a paragraph from a lecture on metaphysics by the Rev. Lord Arthur Harvey, delivered week before last at Bury:—

"Metaphysics now rest upon precisely the same basis as physics; upon observation and analysis of facts which are patent to man's inquiries, and capable of being reduced to general laws. Indeed, in some respects, metaphysical science may be said to rest on surer grounds than any other science, inasmuch as the facts in question are the subjects of our own consciousness, without passing through the uncertain medium of the senses. Whatever, therefore, may have been the obloquy to which metaphysics were justly liable as pursued by the schoolmen, and as taught by Aristotle,—the metaphysics of Locke, Reid, and Dugald Stewart, Brown, Abercrombie, and Coleridge, is entirely free from such a charge. And, as regards the connection of mental philosophy with infidelity, it may be true that Hobbes and Hume and others did not, by their wisdom, find out Christ. But is it not also true that Christianity has wrested the weapons of philosophy from the hands of her adversaries, and turned them to their utter discomfiture and her own defence?"

Indeed, since the divine "light" of the soul "lighteneth every man that cometh into the world," and since that "light" must therefore have some fixed, established, constitutional relation to the soul of "every man,"—the philosophy of religion itself may yet be evolved from metaphysics, and the truth of Plato's axiom that "the end of all knowledge is the reunion of religion with philosophy," be thus at length established.

If a full knowledge of the laws of the forces by which a little bit of sealing-wax attracted a scrap of paper, evolved all the wonders of electricity, electro-magnetism, and the almost magical telegraph, what may we not anticipate from a thorough research into the laws of that wonderful estimater or measurer of forces and their co-relations—the human soul? The emphatic injunction, "Nosce Teipsum," written up on the entrance-gates of the ancient Temples of the Magi, may have designedly had a physical no less than a metaphysical significance of which we have not yet the slightest idea. There is something like idiotcy in the sneer with which any endeavour to expiscate the laws of so wondrous an instrument as the human soul is but too often met. The time is come when even the *penetralia* of mind will be ransacked by men of science, and its laws *and capabilities* evolved and ascertained by methods analagous to those by which the laws of electricity and magnetism have been established, and with results, both physical and metaphysical, even still more important and more wonderful.

Miscellanea.

RAILWAY MATTERS.—To put an end to the numerous accidents on railways, which are frequently caused by the breaking of the springs of carriages and engines, the Austrian Minister of Commerce, in order to induce the railway officials to examine strictly the state of the springs, has announced a pecuniary reward every time they point out to the Administration a spring which is in a bad state.——In consequence of a strike amongst the workmen in the smiths'-shop at the factory of the Great Western Company at New Swindon, their wages have been advanced, and a general rise, it is understood, will take place. The number of hands in the works, says the *Wilts Mirror*, is being rapidly increased: the portion of the new works which has hitherto remained in disuse is to be put in operation, and an addition of 300 men, it is said, will be required.——The arch of the bridge spanning Dragley Beck-lane, near Ulverston, on the Ulverston and Lancaster line fell on Wednesday in last week, and blocked the highway. The arch is forty feet span, forming but a small segment of a circle, and is built on the skew, with brickwork in mortar, and stone quoins. The whole of the brickwork has come down, but the stone quoins on each side remain standing. The same bridge gave way once before, and was rebuilt.——Mr. P. Ashcroft, superintendent of works on the Eastern Counties line, states in his report to the directors, that from the experience gained since the introduction of fish-jointing on the line he is further convinced of its advantages, both in economy of maintenance and security against accident by trains running off the line.

THE PROJECTED ROMAN CATHOLIC CHURCH OF ST. PETER, IN LONDON.—Respecting the edifice lately announced by us as intended to be erected at Hatton-garden, the *Roman Journal* of 16th ult. says, "The congregation founded in Rome by the servant of God, D. Vincenza Pallotti, after having met with opposition and difficulties for the space of six years, has finally achieved in London, through one of its priests, D. Raphael Melia, the purchase of ground in a central part of the city, sufficient to erect a vast church, especially for the benefit of Italians, with a cloister annexed for the priests of the congregation. On the 16th of December last the contract was stipulated and the deed executed, the ground being paid for at the price of 7,500*l.* that is, about 37,500 scudi. . . . Signor Francesco Gualandi, of Bologna, will be the architect of the new edifice, assisted by an English architect. In this church, wherein the faithful of every class and condition will be able to satisfy their devotion and the duties of religion, there will be confessors to hear confessions in all languages; there will be preachers to announce the Divine Word in the principal idioms of Europe; and there will also be schools for both sexes."

THE MANCHESTER SCHOOL OF ART.—The annual meeting of this school was held on Monday in last week, when the prizes were distributed in presence of a large number of spectators, among whom were the mayors of Manchester and Salford, Mr. Cole, Mr. Redgrave, and other gentlemen of note, together, of course, with Mr. J. A. Hammersley, the principal of the school, and others connected with it. The meeting was addressed by Mr. Bazeley, Principal Scott, of Owen's College, the mayor of Manchester, Mr. Cole, Mr. Redgrave, and others, and appropriate resolutions voted. On Tuesday morning a meeting was held in the mayor's parlour to receive Mr. Cole and Mr. Redgrave as the superintendents of the department of practical art to explain the intentions of the Board of Trade as to assisting in the establishment of elementary classes in connection with existing schools and institutions.

LIMERICK CHAPEL COMPETITION.—Finding that on two or three occasions public attention has been drawn to this matter in the *Builder*, I, as one of the competitors, beg to return you my best thanks for your remarks. I never heard or read of any competition in which the architects concerned were treated with greater want of courtesy, and more decided contempt. Since the 1st October last, this worthy committee have been debating on the award of a premium of 30*l.* An answer never was granted to one of many letters inquiring as to delay, and even the receipt of my drawings was never acknowledged. To my surprise, a fortnight since the plans were returned, with the cool intimation that none of those furnished suited the requirements of the committee. For my part, I can say, my plans were in strict accordance with the instructions. Now, as to whether any set of men should have taken such a length of time to frame such a decision, I leave to the common sense of your readers to determine.—Z.

THE ARTS IN IRELAND.—In the course of Lord Monteagle's eloquent address on the opening of the "Limerick School of Art," recently printed, his lordship said,—Cork has shown us the path in which we ought to tread. The origin of the fine arts in that city is interesting and instructive. During the regency, and after the termination of the war, the pope made a gift to George IV. of an exquisite set of casts, made from the antique statues of the Vatican, which had been substituted for the originals, conveyed to the Louvre by the revolutionary armies of France. The collection was an unrivalled one, the casts being made from the original statues, and finished by eminent Italian artists. At that period the Royal Cork Institution had lately been founded, and was endowed with a parliamentary grant; and George IV. was fortunately induced to bestow on that society the Italian casts. They were deposited at Cork, and with what result? The seed, it is true, was imported from Rome, but the harvest was reaped in Ireland. The sculptor Hogan arose, who has since earned a European reputation, and displayed powers happily applied, not only in perpetuating in marble the likeness of eminent men, but in the still higher walk of art, in decorating places of worship. Our altars and our monuments stand in proof of the native artist's genius. But this was not the only vigorous shoot which sprang from the same root. It produced Maclise the painter, as well as Hogan the sculptor,—Maclise, not only excellent, but pre-eminent, by the inexhaustible fertility of his invention, and brilliant and picturesque in his power of execution. Maclise is now high among the admirable men who form the Royal Academy, adding constantly to his fame by an annual succession of most attractive pictures. I can also name Carew, a native, I believe, of Waterford, whose graceful groups owe their elegant origin, if I am not misinformed, to the teaching of the Royal Dublin Society. If we turn to Galway we shall find something more excellent there than a packet station, —the late Sir Martin Shee, the successor to Reynolds as president of the Royal Academy, whose annual addresses and lectures proved that he, like his great predecessor, possessed a high literary, as well as professional, capacity, and whose exquisite verses also exhibit poetical powers altogether his own. Our race, then, does not appear to have been born so very remote from the sun as to be unsusceptible to the light and the warmth of its rays. But I dare not omit another, and a still greater example. I cannot pass over Barry, the contemporary of Reynolds, and who, with more conduct and prudence, would have been the successful rival of Sir Joshua himself. Indeed, no one can view his great pictures at the Society of Arts, without being satisfied of the superiority of his creative powers. He emulated the great school of Rome; whilst Reynolds rarely rose beyond that of Vandyke and of Bologna. Barry's "Venus Anadyomene," and his "Adam and Eve," are surely superior to "The Snake in the Grass."

LIVERPOOL ARCHITECTURAL SOCIETY.—At a recent meeting of this society Mr. Boult made a communication, on behalf of the council, in relation to the students' designs, and the decisions thereon which were announced at the last meeting. He said that since the last meeting the council had reason to believe that the design to which the preference was given, for the design and plan, was not the unassisted production of the student member by whom it was sent in; they had therefore determined to rescind their award on that occasion. Mr. G. F. Chantrell read a paper by his father, entitled, "Description of an ancient Pillar, discovered in taking down the old parish Church of Leeds, in 1838." The pillar was found built into the wall of the old church, and from the fragments of sculpture and the hieroglyphics upon it, Mr. Chantrell concluded that it belonged to a period anterior to the introduction of Christianity into Britain. Mr. Boult then read a paper of "Notes upon Cologne and its Cathedral," giving an account of the progress of the works now going on to complete that structure.

NEWCASTLE SOCIETY OF ANTIQUARIES.—At the monthly meeting of this society, held on Wednesday in last week, Dr. Charlton read a paper on "The Pictish [round] Towers of Shetland," a report of which is given in the *Gateshead Observer*. Some discussion followed, and the opinion generally come to was that of the reader himself, that these buildings were erected as towers of refuge and defence.

STREET LIGHTING.—A street at Haddington, in Scotland, has been lighted by the aid of reflectors by Mr. David Roughead. The street is 200 yards long by 28½ yards wide, and is lighted by a single gas-burner at each end. The gas consumed, it is said, is thus diminished from 24 cubic feet an hour to 6, and the number of lights from twenty to two. Silvered glass reflectors for street lamps were long since suggested in the *Builder*. Mr. Roughead makes no claim, however, to originality, he only recommends it at his own cost to general attention.

THE LIVERPOOL BRICKLAYERS.—The wages of bricklayers here vary, says the *Liverpool Journal*, according to the season of the year. "From 31st November to 20th February, they are 4s. a day; during the remaining eight months, 4s. 4d. Notwithstanding the extra cost of living in a large place like Liverpool, it is a singular fact that wages are better in several smaller towns. In Preston the rate is 4s. 6d. to 5s. and this is the rate also at Manchester; but at Bolton, the sum of 5s. a day, we are told, is paid all the year round. Hodmen, in Liverpool, get from 16s. to 17s. a week. We ought to state that in Liverpool there are two or three masters, whom we have heard named, who pay to their workmen 4s. 4d. always, irrespective of the season. The men complain of the gradual introduction here, to a small extent, of the middlemen or 'sweating' system." There are about 700 bricklayers in Liverpool, and 200 of these are connected with a benefit society, which extends to or is associated with twenty-two others in various parts of the country, and all paying into one common fund, the seat of government being in Manchester. The payment into the club is 4d. a week. In case of accident, 12s. a week is allowed to members for six months, if necessary: the amount is then reduced to 9s. and finally 5s. a week is given till the man may be able to resume his employment: 8*l.* is granted on the death of either a member or his wife. Mr. Tidd Pratt refused to certify the rules unless the payment were raised to 5½d.; but, on the society connecting itself with the others, they received his sanction.

GAS.—The Mildenhall Gas Company on 25th ult. declared a dividend of 5 per cent. on their capital. ——The Wolverhampton Company have just announced that "the profits of the concern in the last half year enable the company to declare a dividend of 9 per cent. for that period." A surplus, moreover, has been added to a guarantee fund in course of formation. This company, it is said, contemplate lowering the price of their gas, yet not to the extent of the recent reduction at Walsall, where gas is now 4s. per thousand to the consumer who pays his account within a week of its presentation. There, however, the ratepayers, and not a private company, are the proprietors of the works.——The Wellington Coal and Gas-light Company state that the lowering of their price to 5s. per 1,000 cubic feet "has answered beyond the most sanguine expectations of the promoters, the daily consumption of gas being upwards of 23,000 cubic feet during the present winter. The undertaking, it is said, has proved a most profitable investment for the shareholders. A dividend of 7½ per cent. has just been declared, and a surplus of 243*l.* carried to a reserve fund.——The town of Lechlade, we hear, is "brilliantly lighted with the 'Self Generating Gas,' at a cost of less than 4s. per 1,000 cubic feet." Naphtha we suppose is meant, as, by means of a fitting apparatus, it can be heated to the gaseous or rather the vapourous state before arriving at the burner.——The managers of the Burnley Company have made a reduction of 6d. per 1,000 cubic feet, and also lowered the charge for use of meters. The price is now 4s. 6d. per 1,000 feet. The gas company, says a local paper, can well afford to lower the price, as the shareholders, it appears, have been receiving dividends at the rate of 30 per cent. on original shares. An attempt has lately been made by the local Improvement Commissioners to purchase the works, but the gas company refuse to treat.——Mr. R. Laming, of Millwall, has patented a number of improvements in the manufacture and burning of gas, in the treatment of residual products of such manufacture, the distillation of coal, or similar substances, and the coking of coal.

FOUR MILES OF COPPER-WIRE in one piece were lately drawn out from a mass weighing 123lbs. at Mr. Walker's mills. It is to be laid down as a line of telegraph, without weld or link.

VALUE OF LAND, WOOLWICH.—The increased value of land in the immediate vicinity of the Victoria Docks, at North Woolwich, may be gathered from the fact that a jury is about to be empannelled to assess the value of land required by the company. The proposed price, as lodged, is 180*l.* per acre, but the owners require no less than between 700*l.* and 800*l.* per acre for it, whilst ten years ago the same was to be had at 20*l.* per acre. As another instance of the improvement in the price of land, we may mention that for plots of ground adjoining Messrs. Mare's factory at Blackwall, the enormous sum of 2,000*l.* per acre has been paid.—*Kentish Mercury*.

AN ERUDITE CONTRACTOR.—In the course of a trial at Winchelsea the other day, on a builder's bill, the following agreement was put in:—

"I Hear a Gree to Bild 7 Cottages—to Be Good substanchell Bilt Buildings. The Bed rooms papperd and Cubbrets in them all. Chimley pots to all chimles. Rooms eatch the same sice. Money to be paid when Finishd and a Proved by Both any thing forgoten and Nessery to done is a Gree to Do it."

THE MONUMENT AT WELLINGTON.—A letter by Mr. Arthur Kinglake to Lord Portman, with some interesting particulars respecting the Wellington Monument in Somerset, several of them extracted from the *Taunton Courier* and the *Sherborne Journal* of the time of the erection, and including an account of its present state by Mr. C. E. Giles, architect, has been printed for private circulation. An engraving shows the sadly dilapidated state of the monument, and Mr. Giles states that the costs of mere repair, including a lightning conductor, the want of which has done serious damage, will be about 630*l.*; but that the stone facing on the flint core is without adequate cement, and is all peeling off, and ought to be properly restored; and that a separate house for pensioners to protect the tower should be built, all of which, with provision for the pensioners, would increase the outlay to 3,000*l.* We are glad to observe that this monument is in a fair way of being completely restored.

METROPOLITAN COMMISSION OF SEWERS.—Copies have been ordered in the Commons of any plans and sections which may have been prepared by the Sewers Commissioners for the better drainage of the metropolis; also of particulars as to the Victoria-street sewer. In reply to a question put to Lord Palmerston, also in the Commons, his lordship stated, that as a private or commercial company propose, in a Bill before Parliament, to form two great arterial sewers through London, one to the north and the other to the south of the Thames, the intention of Government as to any scheme of drainage must be ruled by the result of that Bill and the practicability of that scheme if approved of. At a meeting of the Commission on the 28th ulto. the total receipts during the year were stated to be 134,999*l.* odd, and the payments 122,098*l.* odd. Some gladiatorial passages between Mr. Hosking and the chairman as to the general drainage scheme have of late occurred at the meetings of the Commission, the full force of which we are not sure that we see or rightly understand. The chairman on a late occasion determinedly opposed an endeavour by Mr. Hosking to move a resolution as to the drawings of the scheme, which the chairman objected, would open up the subject for discussion while it was yet under consideration. Mr. Hosking insists that the public are deceived if they think there is any scheme, properly so called, at all.

ILLUSTRATION OF ARCHÆOLOGICAL WORKS.—With reference to our remarks on the Journal of the Cheshire Architectural and Archæological Society, the Rev. W. H. Massie, the corresponding secretary, says,—"The Council thought it better to give merely a correct *idea* of a *variety* of objects, than to spend all their means on a few elaborate engravings, the use of such societies being, 'when they find a thing, to make a *note* of it.'" In this way, the hurried sketch of Chester, at the end, has already suggested to an artist to make a coloured drawing from the same spot, on his own *speculation*; and some of the seals have been *seen* in this vol. and already perfect engravings have been taken of them by parties specially interested in them.

VALUE OF SUBURBAN BUILDING GROUND.—Freehold ground-rents amounting to 845*l.* per annum were submitted last week to auction at the Mart by Messrs. Chinnock and Co. and sold for 25,510*l.* an average of upwards of 30 years' purchase. These rents have been created within the last five or six years upon about nine acres of land at Bayswater, which, twenty years since, were open country and might have been purchased at about 200*l.* per acre, and which now, owing to the rapid spreading of the metropolis in this direction, have realised nearly 3,000*l.* per acre.

COUNTY COURT JUSTICE.—CAUTION TO SURVEYORS.—At the Lambeth County Court a few days since, a house-agent was plaintiff against a surveyor for payment of an account for work done to a house, put into his hands to let, and which he had taken upon himself to do, not only *without any authority whatever*, but in defiance of written directions *he was not to do it*, which document was produced in court, and although it was dated the 21st February, 1852, and the man's account, for drain cleaning and a few other similar works, consisted of items dated from the 27th February to the 8th March, the judge (if it is not a libel upon the title) actually gave judgment for the plaintiff!—A VICTIM.

CAMBRIDGE ANTIQUARIAN SOCIETY.—At the meeting on 28th. ult. the Rev. E. Ventris read an extract from Baker's Manuscript, and Mr. Rigg read a paper on the Orientation of King's College Chapel, tending to show that it could not be made to conform to the theory on that subject announced by the late Cambridge Camden Society. The exact direction of this building was recently determined by Mr. Adams, in the course of a triangulation conducted by him for connecting the Cambridge Observatory with that at St. John's College.—Mr. C. C. Babington read part of his forthcoming treatise upon Ancient Cambridgeshire.

EXHIBITION OF CABINET WORK.—The Department of Practical Art have permission from the Royal Commissioners for the Exhibition of 1851 to open in Gore House, Kensington, in May next, an exhibition of fine specimens of old cabinet work, for the art-instruction of students and the public. Her Majesty has contributed examples from Windsor Castle, and other loans of choice specimens are anticipated.

CLIFTON MARKET COMPETITION.—Some time since the Clifton Improvement Association offered a premium of twenty pounds, to be given to the architect who should submit the best plan for a market-house, proposed to be erected on a certain piece of ground in Clifton. According to the Bristol papers, at a recent meeting of the committee, the following resolution was carried unanimously:—"That this committee having carefully examined the five several plans for a proposed market-house, now laid before them, do award the premium of twenty pounds to the one bearing the motto *'Non quo sed quomodo,'* as being most suited to the requirements of Clifton, inasmuch as it combines lightness and elegance with the utmost convenience." We are informed that Messrs. Forter and Wood are the authors of the approved design.

THE IRON TRADE.—The reductions in pig-iron, it seems, have so far checked the rabid desire to force up prices, that there is not only no longer any talk of advancing with the giant strides so lately boasted of, but scarcely any as to even sustaining the advances already made: on the contrary, even amongst the most strenuous upholders of high prices, there are well-grounded fears that this will not long be possible. The swing round once fairly effected, there may be as rapid a retrogression as there was lately in the contrary direction. "The trade of this town," says the *Birmingham Gazette* of last week, "is still in an anomalous position. There are abundant orders on the books of the manufacturers, which they are unable to execute, owing to the scarcity and enormously high price of metals." And this is not the case in Birmingham alone.

THE VENTILATION OF THE HOUSE OF COMMONS.—Complaints are still made as to what is called "the defective ventilation of the reporters' gallery," but the defect appears to consist in an excess of "ventilation," for the reporters' heads are said to be so constantly ventilated by currents, or rather blasts, of cold air, that they continually suffer from catarrhs and coughs. It is really extraordinary that no amount of money seems to be sufficient to ensure comfort, in all the attempts that have been made to ventilate the House of Commons. We would suggest a new mode, seeing that all others have failed,—namely, just to let it alone for a bit, and leave the house to ventilate itself *ad libitum*.

THE FRONT OF THE MANCHESTER ROYAL EXCHANGE.—At a recent meeting of the proprietors, it was proposed to make the semicircular end of the Exchange look as if it really belonged to the more modern part. This, the architect suggested, could be done by re-casing the front, and raising it to the height of the new part, which would cost about 4,000*l*. The proposal, however, was rejected, and, although the association is declared to be in a most prosperous condition, and yielding high dividends and bonuses, it was suggested that an application should be made to the Town Council for assistance. A single subscription of 4*l*. a share would pay the whole cost, and each share yields a yearly dividend of 7*l*. besides a considerable bonus.

ACCIDENT WHILE RAZING A WALL.—At the Old Mint, Soho, Birmingham, two persons were lately killed and three seriously injured by the sudden fall of one of the walls, while undermining it. One of the persons injured is the purchaser of the materials of the building.

TENDERS

For additions to the Albion Brewery, Mile End-road. Mr. F. N. Clifton, architect:—

Saunders and Woolcott	£7,317
Ashby and Horne	7,140
Webb	6,747
S. and W. Piper	6,515
Hill	6,361
Wilson	5,890
Perry	5,595
Norris	5,387

Quantities furnished by Mr. Eppy.

For erecting Baths and Washhouses for St. George's, Hanover-square. Mr. P. Baly, architect:—

Rowland and Evans	£11,814!
Carter	10,300
Sissons and Robinson	10,259
Sanders and Woolcott	9,990
Locke and Nesham	9,876
Cooper	9,678
Glenn	9,549
Myers	9,454
Hopkins and Roberts	9,440
Brown	8,776
Pauling	7,990!

TO CORRESPONDENTS.

"S. W. M." (to saturate it with corrosive sublimate has been recommended). "N. S." "A. B." (it would be dangerous to advise in private differences). "Constant Reader" (thanks). "J. H. C." "Patents" (thanks for tone of suggestion). "J. H." (beneath criticism). "M. B. N." (lectures are not published). "S. S." "J. T." "T. H. L." "F. H." "P. S." "T. S." (two-and-a-half per cent. is a surveyor's charge, but it is not likely that he could recover it). "Lord L." "G. G." Southampton, "S. P." (fault rests with his newsvendor, if paper be wrongly folded). "J. M." "J. W. W." we shall be glad to have brief notice). "W. R." W. H. S." "Sir W. J." "Z." "J. B." "Ericsson" (shall appear). "J. G" (under our mark). "J. E." (ditto). "G. L." "C. G. W." (having absented himself without notice, he would not be able to recover). "Metropolitan Improvements." "A Female" (apply to an Architect; we might mislead by advising on incomplete particulars). "J. B. G." (if damages could be proved, builder would probably recover).

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

ROYAL ACADEMY ARCHITECTURAL DRAWINGS, Views for Competitions, &c. WANTED to PREPARE, by an experienced Perspective Draughtsman and Colourist.—Address, L. B. S. "The Builder" Office, 1, York-street, Covent-garden.

MARYLEBONE LITERARY and SCIENTIFIC INSTITUTION, 17, Edwards-street, Portman-square.—The THEATRE, which is capable of containing 800 persons, MAY BE ENGAGED for morning or evening lectures, concerts, public meetings, &c. on a REDUCED SCALE of CHARGES, which may be obtained, with further particulars, of the Secretary, in the Library of the Institution.

SURVEYOR WANTED.—The Local Board of Health and the Council of the Borough of Great Yarmouth are desirous of engaging a qualified person to perform the duties of SURVEYOR and Inspector of Nuisances to the Board of Health, and Surveyor to the Town Council. To be restricted from any other occupation or emoluments. Salary, 150*l*. Applications, stating age, with testimonials, are to be addressed to the Town Clerk, not later than the 31st of MARCH instant.

AN Architect requires a Youth in his office who has some knowledge of drawing. To one who has just finished his articles and requires further improvement, a small salary would be given.—Address E. L. Office of "The Builder," 1, York-street, Covent garden.

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WANTED, in an Engineer's Office, a DRAUGHTSMAN and GENERAL ASSISTANT. Unexceptionable references will be required.—Applications to be by letter, and stating salary required, and nature of previous engagements, to ALPHA, Mr. Panton's, 13, Piccadilly.

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WANTED, in an Architect's Office, a respectable well-educated YOUTH, having a taste for drawing, as an Articled Pupil. There would be no objection to receive such youth under arrangements as a member of the family. Apply to Mr. CARVER, Architect and County Surveyor, Taunton Somerset.

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WANTED, by a Builder in the Country, a FOREMAN who understands the business, has a knowledge of drawing, and the general routine of the office. He must be steady, active, and industrious, and willing to fill up his time at the bench, in the office, or as may be required. A permanency, if suited.—Apply by letter, stating age, salary, &c to R. FUTCHER, Builder Fisherton, Salisbury.

TO ARCHITECTS' ASSISTANTS.

WANTED, in an office in a country town, a steady, respectable PERSON, who understands drawing plans sections, and elevations, with specifications of plain houses and buildings, taking out quantities, and measuring builders' work, &c. A little knowledge of land surveying would be an advantage. Terms, 30*s.* per week.—Address, with full particulars of previous employment and references, to J. C. Post-office, Luton, Beds.

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WANTED, by a Young Man, aged 24, a permanent SITUATION as PLUMBER, PAINTER, and GLAZIER, and Gas-fitting if required. A good reference can be given.—Address, E. N. 1, Ernest-street, Grange-road, Bermondsey.

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WANTED, by a Gentleman, an ENGAGEMENT in an ARCHITECT'S OFFICE. He has been accustomed to making working and detail drawings, and is well acquainted with the various duties of the profession. Address, W. V. Mr. Reed's, News Agent, John-street, Oxford-street.

WANTED, to APPRENTICE a Youth to a Good Trade. A moderate premium will be given as In-door Apprentice in a respectable family.—Address C. W. care of Messrs. Ash and Flint. Stationers, London-bridge

A YOUNG MAN is desirous of obtaining a SITUATION in an ARCHITECT or BUILDER'S OFFICE. He is a neat draughtsman, can get out working drawings, and well acquainted with builders' accounts. Good reference can be given. Address, D. L. W. 9, Lewis-street, Kentish-town.

TO CIVIL ENGINEERS, SURVEYORS, AND CONTRACTORS.

A YOUNG MAN, aged 22, conversant with land and engineering, surveying, levelling, drawing, mapping, &c. is desirous of an ENGAGEMENT, with a view to advancement in the profession.—Address, C. E. 130, Aldersgate-street, City.

THE Friends of a Youth who has a taste for drawing are desirous of ARTICLING him to an ARCHITECT or BUILDER for three years, where he would have the advantage of acquiring a thorough knowledge of his profession, and be treated as one of the family. Apply, stating terms, &c. to W. A. J. care of Mr. Phillips, Chemist, Wincanton.

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A YOUNG MAN, in his 19th year, with a partial knowledge of carpentering, is desirous of obtaining EMPLOYMENT where he may have an opportunity of acquiring a thorough competency. Writes a good hand, and can keep accounts.—Applications addressed, S. M. 9, Gilbert's-buildings, Westminster. Country preferred.

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A YOUNG MAN, aged 20, who has been four years in the employment of a London Builder of eminence writes a good hand, and is quick at figures, is desirous of an ENGAGEMENT in the country, at a moderate salary, with the view to further improvement. References unexceptionable.—Address, R. R. 90, Berwick-street, Pimlico

A BUILDER'S CLERK requires a RE-ENGAGEMENT; thoroughly understands measuring, estimating, and book-keeping, and is a good, fair, and working draughtsman.—Address, H. H. Mr. Ogg's, Post-office, Gray's-inn-road.

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THE Advertiser wishes for partial EMPLOYMENT in any of the above offices. He is a good draughtsman, can make estimates, measure work, and perform the duties necessary for his occupation.—Apply by letter, K. M. 30, Cadogan-street, Chelsea.

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A YOUNG ARCHITECT, much attached to Christian Architecture, whose engagements during the greater portion of the day do not permit him to practise, OFFERS his LEISURE, at a moderate remuneration, to any gentleman who may be getting out designs or working drawings for churches. Address, X. Office of "The Builder," York street, Covent-garden.

Z. X.—EMPLOYMENT WANTED by a person who is a good correspondent, computer, and mechanical draughtsman; who has a practical knowledge of steam-engines and machinery, and who is well qualified for a superintending engineer, an assistant to a patent agent, &c.—Direct, prepaid, with real name and address, to Z. X. Central Post-office, Piccadilly.

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BUILDING FRONTAGES, Grove-road, Upper Holloway; Queen's-road, Dalston; and High-road, Turnham-green.—TO LET, BUILDING FRONTAGES, with good roads and sewers, and one year's pepper-corn.—For particulars apply to Mr. HUGHES, Solicitor, 28, Old Jewry; and to view the Ground, at the Counting-house on each Estate.

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JOSEPH SOUL, Secretary.
Office, 32, Ludgate-hill, February 22nd, 1853.

TO BE LET on LEASE, by the Committee for Letting the Bridge House Estates, the extensive PREMISES situate on the north side of the Westminster-road, Southwark, and formerly used as the Freemasons' Schools. A plan of the property may be seen, and further particulars obtained upon application at the Architect's Office, Guildhall, London.
FERDINAND BRAND,
Comptroller of the Bridge House Estates.

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EDGWARE-ROAD.—TO BE LET, on Lease, a capital YARD, with Workshops, &c. situated in the best part of the Edgware-road, Paddington.—For terms and particulars, apply to Mr. MARSHALL, Architect, 45, Connaught-terrace, Edgware-road.

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TO BE LET, on Building Leases, several PLOTS of eligible LAND, contiguous to the Ewell Station, on the London and Epsom Railway, situation healthy and the soil chalk. In this delightful neighbourhood moderate-sized villa residences are much sought after.—For particulars apply to Mr. DANIEL MASON, Land and Estate Agent, Wimbledon

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March 1, 1853.

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Very liberal terms will be offered to first comers. Money may be had.

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MR. H. P. BEENSEN, Decorative Artist

in Fresco, and all other manners of Painting, begs respectfully to inform the Architects and Builders, that, under the greatest consent and favour of Mr. Sang, he has commenced BUSINESS on his OWN ACCOUNT, and hopes to receive a continuance of that kind patronage and support he has experienced during the last eleven years, being with Mr. Sang.

Mr. BEENSEN begs to call the attention of scientific persons and the public in general to an invention of peculiar importance, viz. a Composition for Preserving the Paintings of Frescoes and other Decorations on Damp Walls, whereby the colours are guaranteed to retain their pristine beauty, unaffected by the influence of damp and moisture. The abstract which has hitherto prevented the adoption of this beautiful work in various situations where it has been chiefly desired, is now entirely removed; and a proof of efficacy of this invention may be seen at Mr. Bellmann's Scagliola and Patent Parian Cement Works Office, No. 14, Buckingham-street, New-road, where it was applied, long time since, in a perfectly damp state, and where the paintings have retained their original colour and beauty to the present day impervious to the slightest effect produced by the humidity of the material in which it had been applied.

As the Business is now extended to undertake the greatest orders in shortest time, we shall be enabled to promise the promptest execution of any command, combined with moderate prices.

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DECORATIVE PAINTING.—

Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

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ASSOCIATION.—Instituted, 1850.—Employers in WANT of experienced WORKMEN can be promptly SUPPLIED on application to either of the following District Houses of Call—The George, George-street, Blackfriars-road; Sun Tavern, London-wall; Blue Boar, Great Russel-street, Bedford-square.

T. DODD, General Secretary to the Association.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—

Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

DAMP WALLS.—NEW PATENT PAINT

as used at the TOWER, by HER MAJESTY'S HONOURABLE BOARD of ORDNANCE; at the TUNNEL; ZOOLOGICAL GARDENS, Regent's-park, and various other public buildings; in quantities to finish twenty square yards for 10s.

PATENT LIQUID CEMENT for the fronts of houses, for beauty pre-eminent, giving the appearance of fine cut stone, and only one-eighth the cost of Oil Paint. In casts of 1, 2, and 3 cwt. at 8s. 15s. and 28s. each.

BLACK MINERAL PAINT, very permanent, half the usual price; only 2s. per gallon.

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G. CAPRON and SON, Joiners to the

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HENRY PASK (late Johnson and Pask), Baker-street, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.





N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET,

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SANDS and EMERY,

Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.





Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation.

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P.S. A full list of prices may be had on application.

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Annum.—ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN, that the Trustees of this Charity are enabled to lend out the Trust Money to poor occupiers or traders resident within the City and Liberty of Westminster, that is to say, within the parishes of St. Margaret and St. John the Evangelist, St. Anne, Soho, St. Clement Danes, St. George, Hanover-square, St. James, St. Martin-in-the-Fields, St. Mary-le-Strand, and St. Paul, Covent Garden. The amount of each loan is not to exceed 100l. is to bear interest after the rate of 3½ per cent. per annum, and is to be secured by the bond of the borrower, with two sureties. Printed Forms of Application, and all necessary information, may be obtained by applying personally, between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, No. 14, Great Queen-street, St. James's Park.

By order, EDWARD S. STEPHENSON, Clerk and Solicitor to the Trustees.

NOTE.—The Trustees meet on the second Wednesday in every month, to consider such applications for loans as have been sent in one clear week at the least before the first day of the month.—The sureties must be unexceptionable.

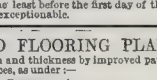
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½ inch yellow	14s. 0d.	½ inch white	13s 6d.
⅝ " "	15 6	⅝ " "	15 0
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2½ per cent. discount allowed off amounts exceeding twenty pounds. Also timber, planks, deals, battens, scantling, sash-cills, &c. at equally low prices. Delivered free to any railway station in London. Terms, cash.

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TIMBER of any size, PLANKS, DEALS,

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N.B. Estimates given for Sawing and Planing.



By Her Majesty's Royal Letters Patent.

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SEASONED WOODS by the Patent Desic-

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REDUCED PRICES.—EDWARD SIMMS

(late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width and thickness, and all greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

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SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

THE GENERAL WOOD-CUTTING

COMPANY, TIMBER WHARF,
SAWING, PLANING, AND MOULDING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of well-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

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Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.

Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 9, Charlotte-row, Mansion-house, City.

RESISTANCE of FROST by GUTTA

PERCHA.—The peculiar non-conducting property of GUTTA PERCHA TUBING, by presenting greater resistance to frost, renders it SUPERIOR TO any kind of METAL TUBE FOR THE CONVEYANCE OF WATER. The Gutta Percha Company have been favoured with the following

LETTER FROM R. UNDERHILL, ESQ. BIRMINGHAM. "June 22, 1849.

"Last winter I filled a half-inch gutta percha pipe with water, having also covered the ends with the same material, and I exposed it for two nights of severe frost. Early on the second morning I cut the pipe through, and found the water as liquid as when put in. This circumstance, of course, proves that gutta percha is an excellent non-conductor."

N.B. The Company's illustrated circulars, with instructions for joining the tubes, and for securely attaching gutta percha soles, will be forwarded, post free, on receipt of four postage stamps.

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THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 200 feet ..... £1 16 6 } In sizes 40 by 30.
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BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

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TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NONTRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and Co., Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

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OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Rich cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 215, OXFORD STREET.

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JAMES MILES'S cheap ENGLISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, Church-street, Shoreditch, near the Eastern Counties Railway Terminus. Cases of foreign sheet, various sizes, 41s. 200 feet; crates of sheet 14 to 16 oz. 2hd per foot, good crown CCC, 18, 31s. and also CC 38, 33s. per crate; patent plate; Hartley's ROUGH PLATE; stained, ground, and ornamental glass; crown squares of every size in stock; sheet lead; pipe; patent gas-pipe; solder and plumbers' brass work of all kinds; white lead, oils, and colours, at low prices; LARGE STOCK of PAPERHANGINGS; old lead bought in any quantity, or taken in exchange. Sashes glazed and primed in oil at very low prices, in any quantity.

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Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

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Patent Sheet Glass,
in sheets of 48 by 36, at 9s. per crate of 300 feet.

GLASS TILES,
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STOUT SHEET GLASS, consisting of 13 oz. 16oz. 21 oz. 26oz. in squares 8 by 6, 8 by 10, 9 by 7, 9 by 9, 10 by 8, at 1½d. per foot; 10 by 8, 11 by 9, 12 by 9, at 1¾d. per foot. Also, Crown, English, and Foreign Sheet ditto. Sheet Lead, Pipe, White lead, Oils, Colours, &c. at low prices, and 50 FARMLOE and SON'S, 118, St. John-street, West Smithfield.

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This Machine has now been shown in work to many practical men well acquainted with all the conditions necessary to be fulfilled to constitute the long-looked-for desideratum in the Brick and Building Trades, and their unanimous verdict is that the object has been attained.

The Machine is fed with any kind of clay rough from the bank, and at one operation PERFECT FACING BRICKS, solid or hollow, are produced at the rate of from one to three thousand per hour, and in so dry a state as to stand six or nine high in hack, when delivered by the machine. The power required will be from ten to fifteen horse; and the Patentee furnishes an engine suited to this particular work.

This Patent Brick Machine will be too costly for the smaller brickyards; but to parties requiring moderate or large quantities, will prove a great advantage.

For price and further particulars please apply (pre-paid) to the Patentee and Manufacturer,

CHARLES JOHN CARR, BELPER, NEAR DERBY,

Where the first Machine may be seen at work any day next week, upon a day's notice being given by post.

N.B. This Machine being sold, there may not be an opportunity to see it at work after next week.

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CHEAP STONE.—PAVING at very LOW PRICES. Sinks 1s. 8d. per foot; Coping, Sills, Steps, &c. Good tooled Paving, at 33s. per 100 feet, also at 34s. and 42s. Builders and Masons are invited to inspect; Country Builders supplied with a price list, free, on application. Countess, Viscountess, and Ladies Slates, of best quality, at lowest prices. A small charge for carriage is made to the different Railway stations and wharfs in London. E. and W. STURGE, Bridge-wharf, City-road.

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THE PIMLICO SLATE-WORKS. Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted, continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble. Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

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Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

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MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application.

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Great Western Railway Station.... PADDINGTON.
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List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle on Tyne, or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

By her Majesty's Royal Letters Patent.

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The Builder.

SATURDAY, MARCH 19, 1853.

IN accordance with our promise we now give the Plans and Elevation of the Library of St. Geneviève, in Paris, erected from the designs of M. Henry Labrouste, architect.* We have engraved these from the plates in the *Revue Générale de l'Architecture*. The Entrance Doorway appeared in a previous number (p. 120). The sum of 75,000*l.* was voted for the building in 1843; but what the actual cost of it has been we are not fully aware. The building consists of two stories, and has the form of a long parallelogram. Referring to the plans, it will be seen that the entrance-hall, with the principal staircase at the back, is in the centre of the building; the portion to the right is appropriated to engravings and manuscripts, that to the left to printed books. Each of these parts is formed into two galleries for the greater part of its length by a wall, with openings in it, running down the centre, and which carries the floor above. The great reading-room over this is about 265 feet long, and about 56 feet wide, between the piers. This room is divided into two main aisles running longitudinally, by sixteen iron columns in the centre, standing on piers. The columns assist to carry arched iron ribs. The vaulting is fire-proof, and the roof is of iron. Throughout the construction, we should say, a large quantity of iron is used. Each of the tables affords accommodation for thirty-four readers. Pipes of gas issuing from the midst of the tables light the place during the evening.† The building altogether will accommodate 1,000 readers. The sculptured candelabra, shown in our view of the entrance-door, were placed there in commemoration of the proposition of M. Salvandy, in 1838, to open the library *during the evening*.

A full description of the building will be found in our ninth volume (p. 72), so that we need not go further into particulars now. The details of the exterior are remarkable for great delicacy and elegance. The intervals between the windows are occupied by tables, on which are inscribed, in sunk letters, the names of 810 authors of all nations, arranged chronologically. In the hall are busts of French notabilities. We will simply add the following references to the plans:—

GROUND FLOOR.

A. Grand staircase.
B. Porter.
C. Area.
D. Book department.
E. Prints and manuscripts.
F. Plan of Rome.
G. and H. Vestibule.
I. Hall.
K. Footpath.
L. Stoves.
M. Warm-air flues.
N. Table for readers.
O. Table for officers.
P. Staircases.
Q. Chimneys for stoves.

ONE-PAIR PLAN.

A. Reading-room.
B. Librarian.
C. Catalogues.
D. Tables for readers.
E. Lights.
F. Staircases.
G. Chimneys.
H. Small cabinets for readers.
I. Warm-air discharge.

* See pp. 134 and 185.
† The annual expense of lighting is said to be 480*l.*

A JANGLE ON BELLS ARCHITECTURAL, BY A LOVER OF DAY-DREAMS.

JANGLE THE THIRD.*

THE PAST AND THE FUTURE.

"* * * And Raffaelle could expatiate within the circumference of a clay platter." Therewith I closed the book; for how could I do otherwise? Here, thought I, are we in perpetual discontent, and spending our lives in uneasy grumblings, that we have not opportunities conceded to us for developing and showing forth that vast amount of talent, which, in the opinion of its fortunate possessors, could it but burst through the dark clouds of ignorance and indifference by which its rays are imprisoned and destroyed, would shine from one end of the earth to the other, and illuminate all nations with its glory. Oh ye, upon whom the mantle of Ictinus had fallen in these latter days, unhappy, misused architects, pining after fruit unattainable, while within your very grasp and underneath your very feet lie treasures, richer far than those chimeras after which you grieve so fruitlessly: listen to this lesson, and learn wisdom from it.

In Urbino was there born, now many years ago, one who yet in early life gained to himself such fame and glory as fall but seldom to the lot of man. He was courted by the great and companied with princes, who sought to wreath his name and deeds with theirs, that thus in the halo of his immortality their names might be preserved from the obscurity of time: thus under his robe did they shelter. And when at length he prematurely died, and the eyes of Italy were fixed in sorrow on his tomb, his fame survived, and growing brighter and larger continually, has steadily increased with the world's growth; and now, though his body has been long at rest, and his fair form has returned unto the dust from whence it came, who shall affirm that Raffaelle is dead? Is not his spirit even now with us? Is not his fame brighter and greater now than ever? And while the world lasts shall it ever die? Yet this man, this wondrous man, whose name has been a watchword to so many eager, and, alas! all too devoted followers, did not fruitlessly and foolishly complain that to him sufficient opportunity was not accorded; for he knew that nothing was so small but there was in it ample room for mind; and he knew that greatness of the soul was shown in finding nothing too trivial for its notice; and that he who cannot rule with wisdom over small things would assuredly fail yet more miserably if the sphere of his power were enlarged and the weight of his influence increased.

And was not this feeling of humility, I thought, one of those great causes which produced such wonderful effects in the works of the men of former times? for not only in the cathedral, but in the simple and quiet church,—not only in the palace, but also in the humbler dwellings, was poured out the spirit of Beauty in its very fulness; clothing all as with a mantle, and shining, if not with so bright, yet with as pure a light, in quiet places far from the haunts of men, as in those more ambitious edifices over which the energies of a nation were expended and its wealth applied with an unsparing hand. Truly as nothing was too great, so was there nothing too small for their notice; and, indeed, had there been anything too small, everything would have been too great. And I fear that in the present day it is not so much because we "will not" as because we "can not." So many streets as there are of ugliness so unmitigated, and yet but few, I fear, are the result of apathy and indifference; ignorance and inability are far more plainly stamped upon them, and while these are the characteristics of the general mass of buildings, it is needless to expect that the more particular classes will rise above them. If you cannot gain a thought, if you look in vain for beauty in the common street, it will be but a vain task to seek for it in the public building. Pomp you may find, and vanity and deceit; but you may look fruitlessly for anything good, you may look in wearisomeness, yet never find one thought that will refresh you and give new life: useless all. You may leave the crowded porch and busy street, and seek in the depths of the country for that delight which cannot be elsewhere found; and there, think with thankfulness that though man may be unable to create, he cannot entirely destroy.

"Humility," said Pacifera, "is a difficult thing to acquire; and yet more needful than it is difficult."

I was so surprised for a moment at her unexpected appearance, and her words so coincided with my thoughts that I was at first unable to reply; and before I had recovered she thus proceeded:—"Humility is indeed needful and good: it would be well if it could but be sprinkled plentifully over all who are in any way connected with buildings, architects and operatives alike (leaving the rest of the world for the present out of the question); for I cannot but think that were those men to whose care you now entrust those scanty portions of your buildings set apart for carving but a little more gifted with humility, they would produce far better work, and, like their ancestry in the Middle Ages, might be induced for a while to forget themselves, and look to Nature. To lay a leaf beside them at their work would be now thought indignity extreme. Poor architecture! she had enemies enough before, without this one of pride."

Then, in a more serious tone, she proceeded: "To a mighty and a numerous family do I belong, and though, compared with that of our race, my own life has as yet been but short; still, inheriting the experience of those who have gone before me, I can go back into time for many years, and view the thoughts and aspirations of men who for centuries have been peacefully sleeping in their graves. And this I know, that nothing good has ever been accomplished in this world, but that which has been done in love. In this lies much of the difference between the works of the past and those of the present age. There is many a village church of olden time plain and simple, which yet possesses more vitality and power, and can move our hearts into far higher admiration, than many a more costly work of modern times. And why? Because, in the former case, the men who built that church loved the forms into which they moulded its stones,—they chose them, they thought about them; but in the latter case, love did not guide the choice so much as fashion; forms were chosen, not because they were beautiful, but because they had been used before, selected, forsooth, in obedience to precedent. Precedent! the watchword of the idle and inane; the eternal clamour of those who cannot think; the refuge of all those who dare to hold up the work of man as an authority, while nature is all forgotten.

Indeed, this late revival of Gothic architecture resembles far too closely for its good health the Renaissance of Italy; resembling it in this, that those who strove to resuscitate it, far too often did but blindly worship its results, and spent their time in rubbing brasses and measuring piscinas, falling into ecstasies over badly carved gurgoyles, or resuscitating hard names and old contracts; when they should have been seeking out its principles and the laws upon which it was founded, to which it owed its success. Had this been done, men had, perhaps, ere this, got beyond their Gothic alphabet.

Let all those who, in the present day, are ever talking about the past, and as it were idolising it, speaking as though in those bygone days there were giants on the earth, let them remember this, that in all things to which they have seriously turned their attention, and rightly directed their energies, the men of the present day have far superseded and immeasurably surpassed these their ancestors; so would they also have done in art, had they not fatally swerved from the right, and gone astray. And the only hope for the future is, that they cast aside all these their false gods, freeing themselves at once from fashion, precedent, and pride, and turn to their work with love, zeal, and humility. With love; loving, in the first place, their art, if not with all the devotion of Michael-angelo, yet with a fervent and warm affection; moreover, as they should love their art, and rejoice in it, and feel pride in being permitted to follow it, they should also pursue it with all the zeal and energy of which they are capable, sparing no labour and remitting no endeavour to attain as high a proficiency in, and as thorough a knowledge of, it as possible; and yet with all

* See p. 131, *ante*.

their knowledge, and all their proficiency, let them retain humility, and remember that in the smallest thing which may be intrusted to their care there is ample room for showing forth the talent which they may possess, and with which they are gifted; and let them also remember, that even the most richly-stored and highly-gifted mind will soon be barren and unfruitful, unless it is continually refreshed from the stream of Nature and re-invigorated from her fountains. Oh! if men would rightly bear these things in mind, how much might they achieve, to what great things might they not attain! Idle and foolish to say that there is aught really and seriously to hinder, save in their own ignorance and foolishness, when buildings are increasing in number every day, and when every day is adding to their resources. Had they alone the large class of domestic buildings, how much beauty might they not achieve, but in addition to these, all around them there are rising churches and public buildings, in whose adornment the utmost of their power might be nobly spent, till their streets were made exceedingly beautiful, and bearing on their fronts the record that their builders were a race of men who, in some measure, appreciated those beauties which God had scattered so lavishly around them; and that, profiting by them, they received them with thankfulness. But this cannot, will not, be, until, as I have before said, you set about this work with love, with zeal, and with humility.

In days gone by, I have seen in his narrow cell the monk-architect at his work, and I have seen his pale cheek glow with delight as he built up in his mind the edifice which he was studying; his thoughts were not merely to copy, but to surpass all his predecessors, and so he judged every separate stone, letting none pass unchallenged, and suffering none to keep their place unless they could render some worthy reason: woe betide all those who could plead no other right than fashion, no other authority than precedent. Then when he felt sure that his light and shade were well and properly ordered, and when he had given to this the utmost of severity, and to that the fullest grace to which it could attain; when he felt that all his main lines were right, and that in that direction he could achieve nothing further; and although throughout he had admitted no teaching but that of nature, yet when he came to clothe his building with the last robe of loveliness of which it was capable, then even still more unrestrainedly did he seek for inspiration from her sweetness, and showed how dearly and sincerely he loved her, by many a fair plant entwining in the dark hollows of the mouldings, or clustering around some spreading capital.

And in this work was his life; he followed it because he loved it; in the day it engaged him ever, in the night it mingled with his rest; and not in him alone, but in those also who followed his directions, and carried out his projects was this all-pervading spirit of love, zeal, and humility to be observed. Can you doubt this, men of modern times, can you disbelieve it? When you stand before some wondrous carving—carving in which has been spared neither labour, nor time, nor skill—where the leaves are bent and waved, and full of life and being; and arranged, not in unmeaning and fantastic scrolls, not issuing from the tails of impossible monsters, but placed as Nature would have placed them, and in everything obedient to her laws.

And the fruits of this love, zeal, and humility, who knows not? How many hearts have been awed into silence, how many have been lifted up in praise by the works of those men.

Let those answer who know what it is to gaze in silent admiration at those fair, vaulted roofs, with their lines of beauty knit together by the flowers of the field; let those answer who know what it is to indulge in deep and strange thought, as they tread the darkening cloister, and the deepness of its shade, mingles with their thoughts. Let those answer who love those quiet rows of holy saints, standing so peacefully, their hands raised as in benediction, each in his appointed niche, on some glorious frontal, whose height is lifted up towards the clouds, fashioned with wondrous power. Yes, let all those answer who have loved the works of these men; all that numerous and ardent crowd, which contains within its ranks, princes and peasants, poets and philosophers, old men and children, rich and poor; yea, every rank and every degree.

Once more: the future lies before you, and each succeeding day that passes along unheeded, makes it still more difficult to arrive at the right path. If there is any good in beauty,—if it is worth striving for—if it is pleasant to be in some sort different from the beasts that perish,—think often of these things, and ere it is yet too late, return to the right path; yea, return. Then, if you steadily pursue the proper track, and bear as ensigns before you the three great truths upon which I have been insisting, a future lies before you whose glory I can in some sort see, but may not, cannot, fully reveal. But I dimly see before me rise crowd after crowd of dwellings, such as men would delight in, and would feel proud to occupy; dwellings that would still more enhance the value of home, and from which there should continually proceed men better and wiser. Towering far above these, do I see public buildings, in whose walls the histories of nations have been written, and whose halls are lined with scenes of bygone days; while from many a niche look down upon us the poets, and philosophers, and statesmen of former ages; yet, better than all these, I see arise many a glorious edifice dedicated to the service of religion, rich in all that beauty, loveliness, magnificence, and wealth can give. I see their vaulted roofs lifted far into the quiet air, and their fair spires rising higher and higher still; and yet while I gaze the vision seems every minute to grow fainter and less distinct. Oh! Architects, shall it sink altogether into nothingness, when it is in your power fully to realise it?"

JANGLE THE FOURTH.

DARKNESS.

Some time elapsed before the kind Spirit again appeared to me, but one Sunday afternoon, tired with the vain attempt to find something good in a well got-up work of modern "Anglican" theology, I fell asleep apparently, in my arm-chair,—though to me it was in reality an awakening, for no sooner were my eyes closed, than I saw Pacifera standing before me. "Is it," she said, with a gentle smile, "is it the best way of spending God's Sabbath, to repose somnolently in an arm-chair? Come with me and learn some useful lesson. Come, while I and my sisters are calling all around to prayer; come with me into the great city, and see what passes there." And so we passed into the sunlit street, floating (as it seemed) along, without any effort of my own, but all in obedience to the Spirit's will: loudly were the church bells sounding, and people were bending their steps to those houses of prayer which have purchased many a blessing for our England.

The Spirit stopped not here, but passing onwards, left the busy streets, and turned down dingy alleys, each as we proceeded darker and dirtier than the one before, till we entered a narrow court, surmounted by tall black houses, hideous with gloom and dirt, and here the Spirit paused. "Observe, oh! well observe," she said, and tell me, are spots like these right in a Christian land?"

No longer were we breathing the fresh air, no longer were we cheered by the pleasant sunshine, but we stood in an atmosphere thick with pollution, and reeking with disease and death,—in a place where no breath of fresh air, fragrant from the country, could find entrance, no healing shower could force its way between those tall houses, bringing with it health and cleanliness; no clear rays of joyous sunshine could pierce into that dark well of misery; but there it stood, solitary in its gloom, a deadly stain and plague spot in that city's being; there it stood, and into its houses slunk gaunt men and women, pallid and diseased, their features marked with all those grievous lines which sin, and misery, and shame so lightly write upon that human countenance, which some, in foolish moments, have called "divine;" children were there, too, and such children; look, ah! look again, but you will vainly look for the bright smile, and the joyous step, and the gay spirits of exultant childhood; instead of these, all around you may see, and too plainly see, low cunning and guile imprinted on each little sharp pinched face, leering and glittering out of every sunken eye; and you will hear the lisped oath, and see the unchecked wrath; and worse, yes, worse than all, who of all these shall you see, who know even their own misery? And as I stood, and thought on these things, once more the spirit said, "Oh, shame! that spots like these should stain a Christian land." And as I stood, silent and bowed down in thought, listening unconsciously to the sad sounds of blasphemy, of rage, and of despair; far above, in the clear air, softly sounding like a messenger of peace, came the music of the distant bells; and then I cried unto the Spirit, who stood looking on, "A grievous sin and shame it is, indeed, that dens such as these should stain our country; but who of all those who this day are, as they think, so piously fulfilling their religious duties, know, or, knowing, care, that there are such scenes as these? Oh, Spirit, well may the poor think lightly of the rich, who stretch not out their hands to free us from such stains as these. If we so carefully preserve such nurseries and hot-beds of crime, how can we wonder that evil is increasing? Who of all these children has ever heard the words of kindness, or felt his cold heart warmed with looks of love? Who of all has heard the words of gentle instruction and good advice? Unnurtured, untutored, and uncared for, they grow up in sin and wickedness; and truly as we sow, so shall we hereafter reap."

Then the Spirit replied, "Yes, so it is, but be not hasty in condemnation: were these things universally known, not long would they be suffered, and the evil is preserved now, more through most lamentable ignorance than through lack of kindness and love in those of (as the world term it) superior station. That which is wanted is a general knowledge of the true state of things; and then, an ardent spirit breathing into all those who possess the power, to rise and extirpate these dread evils. O! for another St. Patrick to cast out these plagues. O! for another hermit to preach a new crusade. A crusade unstained with blood, and unsullied with the cries of misery; one whose only sounds should be praises to God and hymns of thankfulness; one of those episodes which rest upon the earth like a gleam of sunshine, and like it dispel each gloomy cloud and noxious vapour.

O! Englishmen, arise! In your gigantic cities there are lying, marked with disease and in the very shadow of death, hundreds and thousands of your fellow men, in bondage worse than ever Turk inflicted or Christian suffered; bound body and soul, and all unable of themselves to rise. O! stretch forth the hand of brotherhood, and help them before the time is past,—before it be too late."

Then, as she looked at me, she continued, "And you, architects, you who know these things, and know how well they might be remedied, see that you do your share in this holy warfare; for you know that there is no necessity that in our cities the poor should live in misery and inhale continually the breath of death; it is known to you that the air might be pure as that which ranges over field and forest, unheeded and unchecked; therefore do your share, that the poor may indeed enjoy the fulness and understand the meaning of that blessed word 'home.' Then were they loved and cared for, and were their dwellings bright and cheering, and good to live in; how good to give them instruction, and counsel, and advice; but till then,—mark my words, for they are true,—till then, it is useless."

As she ceased, a ray of ent husiasm
shot through my heart, yet I felt sad, and very sad; so with pleasure I perceived her borne away from this dark scene, to pursue our onward course; yet, ere we left, once more she turned, and once more did we see that grim abode, with all its vice and misery and wailing, and its continual witness against the carelessness and the supineness of all those who "might," but "will not;" once more she said—"Oh, England! sin and shame that there should be spots black as this upon a Christian land."

So we left that place, and soon were floating in the pure air and brilliant sunshine; and very sweet and pure it then appeared, after what we had so lately witnessed; yet sweeter and purer still, as quickly pursuing our way onwards, we passed into the quiet country, and saw the blessedness and stillness of a country Sabbath.

So we went through pleasant fields for a long way, and heard music from those sweet singers whom man may not even hope to equal; and saw the flowers shining in the hedge-rows, and the trees clothed with pleasant foliage, "delight succeeding delight, and delights innumerable," till we paused once more, this time in no plague spot, but by a pleasant village, and near its ancient church, under whose roof were gathered the greater part of the village inhabitants, and we could hear the well-known sounds of the glorious old church tunes as we listened.

"Here," said my guide, "we are far from all those dread nurseries of crime from which we have so lately escaped, here we are in the pure air and the pleasant country, and see what fruit the country produces." Then turning down a quiet lane, we stopped against a cottage, one of those which poets sometimes see in dreams, but which are beheld in reality but very seldom, one that was covered with woodbines and roses, with a pleasant garden, and amongst noble trees; one which seemed placed in the midst of perfect peace; but as we gazed, a voice was heard from within that pleasant cottage, cruel in its tone and wicked in its words. Was it a remnant, ringing in our ears, of the foul language we had lately heard? Would that it had been so. But no, from out that pleasant cottage there came forth, staggering with uncertain step, and cursing as he came, a man (must I call him so?) followed by his young, pale wife, who, with words of mild entreaty, followed him to the garden-gate, begging him to go out no more that day; as she clung around his neck, and he raised his hand to strike, she relaxed her hold, saying, "Edward, that one wickedness I will spare you;" and so she went back to soothe her wailing child, and vainly strive to calm her own fast-breaking heart.

"Spirit," I cried, "why hast thou shown me this?"

"It may be," she replied, "a painful lesson, but, nevertheless, such things are done on this earth continually, and it is good that we should know them: this is not the reason for which I brought you here; but for this. There are a class of men who, zealous in their efforts, and warm in their wishes, suffer themselves foolishly to be misled through enthusiasm, and so injure instead of strengthening their cause. These men continually talk as if in the present day we had but to put the poor into clean and wholesome dwellings; but to give them Mechanics' Institutes, art lectures, and other such good things, and then forthwith, they would start at once into new being and new life, free from sin and wickedness, and crime be henceforth a thing only to be known and met with in books and records of the past.

But against all such foolish views as these, let this which you have just seen be warning ever; and remember, that one thing alone can extirpate vice,—one thing alone can give the universal happiness, and peace, and concord, and that thing is not art, nor learning, but *Religion*."

Then once more she turned, and rapidly retracing our steps we stood again in that dismal court, and ascending a grim and narrow staircase, we entered a low and dreary room, in which were three persons:—a young man stretched upon a rude bed placed on the floor, while beside him sat an old woman, apparently his mother, clasping his hand in hers, and looking towards the third, a Bible reader,—one of those noble-minded men, whom neither death, nor disease, nor dirt, nor ignorance, nor indifference, nor repulse—still more cruel,—can hinder in their work, nor dry up the streams of their affection.

As the fever parched the sufferer, and his mother, with difficulty, forced the window a little open, and as there entered, not the fresh air which might have brought healing, but the pernicious atmosphere of the court, worse even than the infected vapours of that sick chamber, no look of anger or displeasure crossed his face, —no thoughts of the unkindness of his fellowmen mingled themselves with the peace of that dying hour; but with a faint smile, he said:—"Mother, it is not for long now;" and then in that sad chamber, the sacred words were uttered,—"Come unto me, all ye that labour and are heavy laden, and I will give you rest." And love, and joy, and peace,—peace which passeth mortal understanding, lighted up that fevered face, as with the words, "I come," his spirit passed into eternity. Oh! what to him that room of misery; what now to him the foul air and pestilential breath; what now to him the voice of wickedness echoing up that dark staircase, and sounding all around him? Aye, what indeed!

"Even so it is," said the Spirit; "and I have brought you here, that you may plainly see how independent the highest happiness of all is of either sanitary or other laws. Were not this the case, how sad would be the lot of man! Yet let me not be supposed for a moment to think that a proper observance of these laws may not lead to some degree of happiness; and at any rate there is a happiness ready to be conferred upon and given to you mortals as the reward of your exertion; and this should be amply sufficient reward to excite you to that exertion:

If you cannot create virtue, let it suffice that you can prepare houses, where virtue would love to dwell, and no such endeavour will at any time go unrewarded. If you cannot thoroughly destroy vice, yet you may remove all these hotbeds and nurseries of it; and may possess the satisfaction of knowing that you have done your utmost to check it, and further its eradication. You have it in your power to give to those who have never yet known them the blessings and comforts of a quiet home; you have it in your power to make some enjoyment in lives which are now but a continuation of misery; you have it in your power to comfort the afflicted, and to heal the broken-hearted; you have it in your power to pour the balm of love into hearts which have never known kindness; to purge from your laurel a perpetual witness of apathy and neglect—in short, to do good unspeakable."

And lo! she was gone; the people were returning from the church, and the work I had been reading still lay open: "Pooh!" said I, "there is more to be learned from the streets of our cities than even from 'Anglican' theology."

BRITISH ANTIQUITIES IN THE BRITISH MUSEUM.

THERE is much in the present condition of London for an Englishman to feel proud of; yet its very magnitude and rapid growth have caused in various of its proportions blemishes which, although often hidden from the general sight, are still of an unwholesome and sometimes deadly nature. Many of these would seem only to need to be mentioned in an intelligent age to meet with an immediate remedy. The first means of all reform, social and political, is knowledge; and it is certain that education by means of instruction through the eye, is every day advancing in favour with the public as a means of promoting it. It therefore becomes us to make such national schools (for both old and young) as the British Museum, Zoological Gardens, &c. as perfect as possible,—considering the British Museum, from the prominence of its position, to be the principal of our national schools.

It is acknowledged, by all, that one most important branch of English education is a knowledge of our national history; and also that it is the duty of us all to preserve the relics of bygone times, which either elucidate history or are important in consequence of their association with persons who have become objects of our reverence. It is, however, a lamentable fact, that there is at the present day in this country no place properly adapted for the reception of our NATIONAL ANTIQUITIES. In the spacious galleries of the *British* Museum we find splendid collections of the antiquities of Egypt, Babylon, Greece, and Rome. Where in this collection, of which any nation on the face of the earth might generally feel proud, are the antiquities of England, Ireland, Wales, and Scotland? Until within the last few months the British antiquities in the British Museum would not have crowded one of the smallest cellars in St. Giles's.

What is called the collection of British antiquities is now, however, lodged in a room of considerable size, which only renders the pigmy nature of "the collection" more visible. Bare and miserable as it is, there is here no proper arrangement, and many of the objects exhibited are not British antiquities. No person of proper feeling can visit this empty and hollow-sounding room without feeling sorrow. The foreigner would naturally here look for information in connection with the bygone times of the country he is visiting. It is, however, to him for such purpose a blank.

Over distant lands millions are yearly rising who speak the English tongue, and boast their origin from these little islands. These millions, which will soon increase to tens of millions, will always feel a natural pride in the land of their forefathers; they will delight in the history of that land, and reverence all that remains: besides this natural and poetic feeling for the past, there is an object in storing such relics. "*In old things there are new*:" from antiquities we are able in many things to improve our modern arts, and to form a just estimate of our present condition.

There can, indeed, be no doubt that one of the great requirements of 1853 is a gallery of British antiquities; but such a gallery should be made on such a scale, and be directed with such intelligence as would be proportioned to the importance of the subject.

In a proper gallery of British antiquities, we should see arranged in the first division all objects connected with the early dawnings of our civilization; models of all objects which would illustrate the subject, should be here gathered; specimens of the smaller barrows, rocking-stones, cromlechs, &c. might be here placed. The cromlechs, too, might, in the gallery of British antiquities, be made to appear in their original position, by means of scenic effect. Many places, such as Stonehenge, and other antiquities of great extent, should be here delineated in a permanent and distinct way, by plans, sections, models, and picturesque paintings by the best artists of the present day. We should also, in this group of British antiquities, find the rude implements and manufactures of the ancient inhabitants, fragments of their dress, weapons, and ornaments. Whenever these fragments furnish material collectively for the complete clothing of an entire figure, the artist should be called in to make a life-sized representation, either in sculpture or painting. There should also be placed here, as far as can be done on authority, models of the huts, houses, manner of sepulture, &c. of the British people of this early date.

In like careful and complete manner the Anglo-Roman period should be represented. In this department the material is extensive, and of the greatest interest, consisting of beautiful bronzes, sepulchral and other monuments, tesselated pavements, baths, specimens of various drawings, &c. of fortification, means of ventilation, and other things too numerous in the present space to mention. In addition to antiquities peculiar to this time and country, there should be either casts or the originals of such statues as those of Hadrian, one of the Roman generals in Britain, and in addition a very large map, on which to register the discovery of past and future Roman remains. In fact, there ought to be a similar map of each period, accompanied by perfect books of reference.

In the Danish department we should see fragments of the vessels of those fine warriors who may be said to have founded, by the admixture of their daring with the industry of the Saxons, the present greatness of the British navy. Here should be also the various architectural antiquities and other ornamentation derived from a Scandinavian source, and forming one of the various ingredients in the composing of our English arts.

In the Norman gallery should be models, paintings, &c. of the churches, castles, and domestic architecture of that time. The Norman warrior on his caparisoned war-horse; the costumes of the various grades of that time; antiquities showing the condition of Ireland, Scotland, and Wales; the tombs of the Norman kings, queens, &c. cast in imitation of the original; implements of war and torture; specimens of literature, painting, &c. &c.

In like manner should the British antiquities of more recent ages be collected, until we come to the spinning-wheel, which has been nearly rendered useless by the "spinning-jenny," and

the "flint and steel tinder-box," which has been thrown into the darkness of the past by the lucifer-match.

The above is a brief sketch of a plan for a collection of British antiquities; nor need it be thought too extensive. Affairs are moving in this and some other countries at railway speed, yet keeping steadily on their course. We need not, therefore, doubt the possibility of seeing before long a proper gallery of British antiquities commenced.

WOODS AND FORESTS.

A SURVEY of the wild, rolling expanse of the *New Forest*, extending from the Solent into the heart of Hampshire, would lead the observer to suppose that the primeval wastes had so endured since the Heptarchy; that, save by the squatters and stealthy intruders, no lands had been inclosed, beyond the timber reserves (which are now the only portion really productive to the State). Such, however, is not the fact; for tradition tells us that numerous farms, mansions, and even churches, had been from time to time demolished, in order to widen the range for royal chase. Rufus was a cunning huntsman; the eighth Harry, too, loved a foray, and Nonsuch, which then afforded a scope of sporting manors and woods even more extensive than the New Forest, was insufficient for a monarch who would sacrifice a territory, wide as the hunting-grounds of the Pawnees or Ojibbeways, to his savage pleasures: the ruins of houses and hamlets are still traceable amongst the heather, and once "many a garden smiled" where now all is sterility.

For the moderate pleasures of the field, our constitutional sovereign retains an ample width, and it is long since those sterile appanages of the royal chase have afforded a field for the more humanized pursuit of game.

Waltham Forest (treated by the *Builder* not long since) has been adjudicated upon, and disposed of. A correspondent last week referred to *Epping*, as about to be considered, and all the other forests will follow in succession. England's present social state requires the appropriation of every acre of ground; and, as was observed (most judiciously) on the "Conversion of Wastes," due regard should be had to the reservation of open parks for the recreation of the people. This should be attended to, above all, near the metropolis, and indeed wherever the vicinity of any town might render such provision expedient for the inhabitants, who had hitherto enjoyed the unrestricted freedom of the entire wastes. Epping, extending, perhaps, to 12,000 acres, is not a royal chase, nor has the Crown any right in the soil, or further privilege than those of feudal, manor, and forest.

The management of all the forests was, up to the 10th October, 1851, combined with the extensive departments of the land revenue, under the control of one Board: since that period one commissioner has charge of these extensive and hitherto profitless domains: they consist of the New Forest, Hants; Dean Forest, and High Meadow Woods, Gloucester; Alice Holt Forest, and Woolmer Forest, Hants; Bere Forest, Hants; Parkhurst Forest, Isle of Wight; Whittlewood Forest, and Salcey Forest, Northampton; Delamere Forest, Chester; Whychwood Forest, Oxon; Waltham Forest, Essex; and the Chopwell Woods, Durham, containing a range of much above 200,000 acres: and yet it appears that the wide crown estates in Scotland, Ireland, the Isle of Man, and in Wales, together with the glorious Windsor Park, Hampton, Richmond, the urban parks,—Hyde, Regent's, Victoria, Battersea, and also domains in the Isle of Alderney, &c. are all placed under the control of the other absolute Commissioner of Her Majesty's Crown Rents and Land Revenue.

Of these forests and their value the Report recently published by the chief commissioner affords a fair index, as thus:—"The loss over income of the New Forest was, in the year 1848, 2,303*l.* 9s. 3d.! In the year 1849-50 there was a similar excess of expenditure over income of 2,412*l.* 17s. 3d.! In 1850-51 there was a net income of 3,151*l.* 11s. 8d.; and in the year 1851-2 there was an increased income of 9,079*l.* 2s. 4d." Now, this increase arose from timber fallen and sold,—not from any of the ordinary returns of landed estate, as in agricultural or pastoral yield, but by dint of hewing down; not from minerals, nor royal dues, nor crown rents, but from the fact that the timber fallen during the year 1850-51 was sold and placed to the public credit.

As to the idea of acquiring a rental from the superficies of any forest or waste land, it is preposterous: instead of income, there must always be a heavy charge in the maintenance of officers. In the balance-sheet of the New Forest it runs thus:—Ten groom-keepers, 5,388*l.* 10s.; which, with 239*l.* 6s. *compensation for venison fees!* makes 777*l.* 16s. Salary of steward, with incidentals, 247*l.* 19s. 6d.; deputy-surveyor, with first, second, and third assistants, a clerk, twenty-six woodmen, five regarders, a labourer, a collector of forest dues,—in all *fifty persons*, who receive in salaries annually 4,131*l.* 8s. 10d. exclusive of houses, grounds, and other privileges. Nor does this return comprehend the charge for labour, machinery, repairs, and incidentals; the whole charge on the establishment for management being 7,405*l.* 11s. 8d. for half a year, or 14,811*l.* 3s. 4d. per annum.

The extraordinary mode of account set forth in the return being for half a year (from 10th October, 1851, to 31st March, 1852) necessitates the half-and-half computation as detailed above.

There is one other item of expense involved with the New Forest, which comes, oddly enough, under the scrutiny and care of the Bureau at Whitehall. It is a pet project and a fantastic occupation:—it consists of the model farm and "*retiro felice*" of New-park Mansion and grounds at Lyndhurst. The balance-sheet is droll. The sales of sheep, hay, oxen, barley, oats, wheat, beans, carrots, potatoes, amount to 880*l.* 4s. 5d. The cost of labour, seeds, manure, implements, *live stock*, is given at 369*l.* 7s. 11d.; thus leaving a balance to credit of 510*l.* 16s. 6d. But no mention is made of the number and value of *live stock* bought in, or of the live stock sold off, to swell the amount. On a parity with other pleasure farms this may be considered not a profitable concern, if, under vicarious management, the steward's office be in Whitehall, at a distance of seventy miles from the plough and sheepfold. The adage of "he who by the plough would thrive" may here be well applied. The chief superintendent is now to leave this abode, and to set up his establishment at the Royal Lodge,—not a bad change for him, except that his park is less.

The fine mansion, formerly the abode of the resident surveyor or manager, together with furniture, plate, wines, and appliances for the accommodation of summer tourists in office, and the New Park, are, it appears, to be reserved as a fancy farm, the articles of luxury accompanying the manager. The Report recommends that the splendid house and demesne should be let to a farmer, not with reference to its value as a nobleman's or gentleman's country-seat, but with a view to establish a model farm (possibly on Mr. Mechi's plan) for the introduction of an enlightened system of agriculture; for essays in all sorts of sub and super soil drainage, and experiments on the propagation of improved breeds of cattle; for the growth of every known species of trois, quatre, and cinq foil; for the testing of all the guanos and desiccated products of sewage; and finally for the benefit of a *Scotch farmer*, who might learn the Hampshire clodpoles and auld wives how to fatten calves! There may be some room for improvement in the south of England as to the true science of agriculture; but this is to be effected, not by erecting a Government establishment, but by encouraging the open and independent agricultural associations, and by founding normal schools: certain it is that the yield of a Government farm will never evidence a remunerating profit, and equally certain that no private gentleman can cultivate his estate, if it be a large one, so as to secure a rental equal to that which will accrue at Easter, Midsummer, Michaelmas, and Christmas audits from the gales contributed by honest industry and open competition.

The Royal domains, from which until lately so little has been supplied to the navy, if managed like the estates of any private company, would discover very different results. If the Law Life Assurance Company or the Equitable, or Sun, or Globe were to pursue this system, returns from the Connemara and other estates would be *nil!*

The Report is a most elaborate work; it contains 313 quarto pages; it is the consummation of red-tape-ism; and considering the labour of compilation and the expense of printing, have cost a good round sum: it proceeds from an establishment of forty-four clerks, which cost the nation 16,390*l.* a year! and this independent of the salaries (or revenues) of each and every of the three chief commissioners; the salary of the solicitor on the new *régime* is 3,000*l.* a year, with 1,000*l.* allowances; but he knows the *ramifications* of all the forests, and besides he is bound to give up his *private practice* after three years from 1851, and to devote his whole attention to the Woods and Forests: this is truly an economic bargain!

It is not possible to quote the whole volume in a notice of this kind, but a tolerable estimate of the worth to the State of tracts which if enclosed, sold, and cultivated, might employ, subsist, and enrich multitudes, may be arrived at by the simple statement of a summary balance-sheet, to wit,—

An account showing the gross and net income of the Royal Forests and Woods, in the year ended 31st March, 1852:—

Total receipts	£61,437 0 5
Total expenditure	38,926 14 7

This embraces fourteen, the principal forests of the empire; and be it understood that the proceeds arose, in a proportion of nineteen out of twenty parts, from timber fallen, which had arrived at maturity, that is to say, to the age and growth of 150 years.

It is very difficult for any *externs* to discover the quantity of oak timber which had been sold or applied on the forests, or wasted, or plundered; but it is apparent that not one-fourth part of what has been fallen during the latter two years has found its way to the naval dockyards, and not one-fortieth part of all that was felled antecedently, had been sent thither. But one fact is obvious, namely, that the Admiralty Board pays the Woods and Forests Board for every stick, at the rate of just 7½ per cent. below the price charged by "private trade" (*sic* in original). The value of timber delivered may be gleaned from the following statement, viz.:—

Navy Timber felled in 1850-51 in New Forest			£7,339 2 6
Do.	do.	Dean Forest, do.	3,852 17 10
Do.	do.	High Meadow Woods	1,412 6 8
Do.	do.	Whittlewood Forest	843 7 2
Do.	do.	Whychwood do.	1,787 13 10
			£15,235 8 0
Carriage of Timber to Portsmouth Dockyard			£669 5 11
Do.	do.	Pembroke Dockyard	1,262 14 7
Do.	do.	do.	562 16 3
Do.	do.	Woolwich Dockyard	216 2 8
Do.	do.	do.	695 6 5
			£3,396 5 10

With reference to the selection of navy timber, a fact given with great candour in this report will at once demonstrate how much more promptly and efficiently the agents of private or trading companies can perform their duties, than those officials who, on liberal travelling allowances and affluent salaries, take up their duties quite *en règle*.

On 7th May, 1851, a warrant was issued under the royal sign manual that 3,000 loads of oak timber would be wanted for the use of the dockyards. In consequence, trees were felled for the navy,—in the New Forest, 1,651 trees, 1,312 loads; in Whittlewood, 273 trees, 199 loads; in Whychwood, 521 trees, 315 loads; in Dean Forest, 242 trees, 543 loads; and in High-meadow Woods, 450 trees, 177 loads: of the two latter falls, in Dean and Whychwood respectively, the surveyor of the navy accepted 251 trees and rejected 441!

To explain this incongruity, Mr. Marten, surveyor of the society of Lloyds, was deputed to inspect and report on the timber, when that gentleman promptly attended and confirmed the rejection by the navy purveyor, save only eight trees, which he considered serviceable, and two others (of those which had been rejected) partially so. So much for the judgment of the forest surveyors!

Windsor being a royal forest may probably require a larger staff of officers. A slight

reference to that forest (although under the Commissioner of Public Works) may not be out of place. Of rangers, surveyors, keepers, warreners, and nameless others *(fruges consumere nati)*, there are in all *forty-one*: they receive per annum, 1,755*l.* 17s. 11d. In addition to this the *labour* amounts to 1,771*l.* 15s. 6d. and the other expenses, 4,642*l.* 6s. 11d. making a total of 8,170*l.* 0s. 4d.! whilst the total yield, including timber, realises only 3,055*l.* 18s. 5d.

That Hyde-park, Regent's, and the other London parks, should be under the control of the Board of Public Works, is a matter of national importance. All the public buildings and improvements of thoroughfares, of the river, and royal properties, require not only large funds and high authority, but talent and professional skill of the first order. Were these qualifications, and not parliamentary influence, the essentials for office, this capital would not present so many blots on the parks, nor on our national buildings and thoroughfares. Vandalism would be less prominent, and art more encouraged.

The neglect of open and available land is a crime. At the same time the substentation of forests and nurseries for ship-timber is a necessity. As the sentinel at his guard, so the ship in the harbour is the guarantee of security. The navy must be sustained; but the growth of sound oak timber requires not the tenth part of the fine territory now lying in utter waste. In the prosperity of the country the occasion is more available for the cultivation of wastes, for the construction of ships, and for the pruning of profligate expenditure, for these are things "that belong unto our peace." QUONDAM.

WANT OF METROPOLITAN IMPROVEMENTS.

ON the 23rd November, 1842, a Royal Commission was appointed, consisting of Lord Lincoln (then Chief Commissioner of Woods and Forests), Lord Lyttleton, Lord Colborne, Mr. Herries, the Lord Mayor, Sir Robert H. Inglis, Sir Charles Lemon, Mr. Hope, Mr. Gally Knight, Mr. Milne, and Mr. Gore (two Commissioners of Woods and Forests), Sir Robert Smirke, and the present Sir Charles Barry, to "Inquire into and consider the most effectual means of improving the Metropolis, and of providing increased facility of communication within the same." It appears that previous to the issuing of the commission, certain improvements were in progress (since completed), viz. the continuation of Oxford-street to Holborn; from Long-acre to Bloomsbury; from Coventry-street to Long-acre. The first report takes up what was then considered of primary importance, viz. the embankment of the River Thames, and upon which vast and various improvements were considered to hinge. They examined the plans of Sir Frederick French, Mr. Martin, Mr. Walker, Mr. Page, and a member of the commission, and having entered at great length into the details, came to the following amongst other resolutions:—"That though a general embankment between Vauxhall and London-bridge appears highly expedient, yet that it is most urgently required on that portion of the Middlesex or left bank of the river, which lies between Westminster and Blackfriars-bridges." Now that report was made on 27th January, 1844 (after many months' consultation), just nine years since: what has been done towards the object requires no comment, the subject is open to every one's observation.

Before inquiring into the cause of delay, let us for a moment look for some redeeming point, something that has been effected in pursuance of the commission that royalty issued, and what can we see? What "public improvement has been effected," or what "new means of improving the communication of the metropolis," except the opening of the unfinished Victoria-street, badly carried out, at a fearful loss to the company (notwithstanding a government grant), and Victoria and Battersea parks unfinished?—Actually nothing. Nothing could be more comprehensive than the subject of inquiry submitted to the consideration of the commission of November, 1842, and (for its utter failure) we must endeavour to trace a cause:—that cause, I fear, is mainly owing to the constitution of the commission itself, first, in having the ever-changing officer, the Chief Commissioner of Woods and Forests, at its head, and for the rest twelve noblemen and gentlemen (excepting Sir Robert Smirke and Sir Charles Barry), wholly unequal and incompetent to the task. The remedy therefore appears a remodelling of the commission, reducing the number, and composing it of competent persons, empowering them to issue notices for the reception of plans, annually to be exhibited publicly, power to grant premiums for the best and adopted designs, and the commissioners themselves to receive a grant from Parliament upon the annual presentation of their report: let the commission exist for a period of five years, and there will be, without doubt, such an accumulation of valuable plans as will suffice for years to come: instead of going on bit by bit we shall have comprehensive designs and an end to all unfair jobbing: let power be given to the Commissioners of Woods and Forests to purchase property lying within the intended lines, from time to time, as opportunity occurs, thus preventing, at times, an extravagant outlay, and affording a mutual advantage to the public desirous of selling, and of the government empowered to purchase. In considering the matter one is naturally forced to the consideration of what has been done east of Temple-bar, what vast openings, improvements, and embellishments are being carried on: the committee appointed to the management of these works are men of business, anxiously alive to their trust, and their acts constantly under the eyes of the public. The City are condemned for the delay of Smithfield-market, in which, doubtless, great interests were involved; but what is that compared to our Thames embankment, and the general sewage?

I have said, that with the Thames Embankment, recommended in January 1844, rested many important and vast improvements, and none more so than the disgraceful state of Westminster-bridge, condemned by a committee about the same period. In speaking of the change of the Chief Commissioner of Woods and Forests being one cause of delay in these matters, I think a stronger exemplification cannot be adduced than that since Westminster-bridge has been condemned, no less than six different sites have been selected for the rebuilding; a new site being chosen as often as a new chief has been appointed. The Crystal Palace has opened our eyes to what may be done with proper energy; and without touching upon the question in contention between engineer and architect, it must be admitted they taught us the value of power and responsibility being placed in the hands of few subject to the public verdict; and sure I am that if a small combined energetic commission were appointed, we should not have a repetition of the disgraceful waste of public money exhibited by that receptacle for everything that is vile and refuse,—the corner of Downing-street, under the very noses of the members of the government; but there would be a well-grounded hope that the metropolis, ere many years, would be worthy the admiration of all. I would by no means trespass upon the real business of the Woods and Forests, but I would seek wholly to relieve them from the responsibility of the general improvement of the metropolis. A. B. C.

THE GRAVEYARDS.

I HAVE read from time to time your observations on the graveyards of the metropolis with their abuses, and which have, and I trust will still have, their beneficial effects, in a sanitary point of view. Among the many evils you have noticed, I fear Paddington has escaped your attention, although, perhaps, you may still have it in reserve; at all events, allow me to call your attention to it, for I believe a more pestiferous or crowded graveyard does not exist in the metropolis. There are not 2 feet of available space left without disturbing a recent grave; and still day after day is the ground opened. This is not the least objectionable part, for even under the church coffins are deposited to send forth their poisonous and vitiated air. In the *Builder* of this week there are some observations of a correspondent, "W. M." on the course that is adopted abroad for the preservation of bodies from decay. What can be more erroneous or ill-timed than the endeavour to preserve the mortal remains after the soul has quitted the body?—"For dust we are, and to dust we must return?" W.

The Hampstead-road Burying-ground, &c.—The accounts in last week's *Builder* on the state of the above ground are too true, and have been known to many for some time. Surely the trustees have clothed themselves with shame, and stand in scarcely a more honourable position than quacks, or the vendors of deleteriously adulterated food. Of course any such "petition" will be cast out by the Board of Health with the just censure of conscience and propriety. I have had opportunities of judging of this ground for about fifteen years. I admit that the pauper funerals are conducted more decently than in other places, though in want of depth equally reprehensible. You speak of "water" baled out; but, alas! in this is a compound fluid charged with human remains, and, I have heard from grave-diggers, more pernicious than the so-called earth. And I have it from good authority, though not himself, that Dr. Stebbing was once taken ill after a funeral, and endured racking pains in the head, with almost affection of reason. Eleven *thousand* in the last year was, of course, a typographical error for *hundred*. The number, as per *Morning Advertiser*, was *twelve* hundred.

As you have said, there was a fear of injuring Dr. Stebbing's interest, till a late letter from a member of his family, in the *Morning Advertiser*, showed that this would not be the case. Many have regretted that a man so distinguished in theology and literature, of so generous and humane a disposition, and with so large a family, should still toil so hard for a small stipend in the church, and that the attention of the dispensers of good things has not been bestowed in this quarter: an addition would be welcomed by all who have seen or heard him.

Of course Hampstead-road is not the only case of needed closure. *St. James's, Clerkenwell*, —according to the evidence of sight, and occasionally of another sense,—is in a very bad state. *St. Luke's, Old-street*,—where, as at *St. Pancras*, the "poor" are buried without "bell," though not exactly "book"—is being inundated with funerals from *closed* churchyards, especially the parish of *St. Ann's, Blackfriars*—sixteen sometimes on a Sunday, besides during the week. Surely this could not have been calculated or intended; for it is something like punishing "Peter" for "Paul's" offence. P.

AMERICAN NEWS.

Pavements of Glass and Iron.—A Mr. Hyatt in New York has "invented a new pavement of glass and iron, by which underground apartments are made as pleasant as the habitations above." "The illuminating portion of the pavement," says the *Boston Journal*, "is made up of sections, each section being *a cast-iron grating*, all the interstices of each grating being fitted with glasses to correspond. Every glass might be destroyed, and a safe footpath still remain: every glass might be destroyed and burglary be still prevented." The use of glass framed with iron is no more a novelty in this country than many other *inventions* which the Americans now loosely claim, and, in future years, will insist on as exclusively their own. Quite a recent instance of these numerous inventions was the iron pavement which was in use forty years since at Edinburgh, and was brought out at Glasgow a year or two ago,—even then long before it was "invented" at Boston.

A Gold Ring from California.—"The celebrated Californian ring presented to General Peirce by a number of citizens of San Francisco," says the *Boston Transcript*, "was exhibited to us this morning; and a marvel of art it truly is. It is of the purest gold, weighs 16½ ounces, and would be a very becoming ornament for the little finger of the 'King of the Giants,' of whom we read in fairy tales. The ring is beautifully chased, and has a number of appropriate representations of scenes char-

acteristic of the modern Ophir. They must have artists of the first order of skill in San Francisco to have produced such a work. The cost was about 2,000 dollars, and the value of the gold is upwards of 1,200 dollars. By touching a spring, the lid flies up, and you see imbedded various specimens of California ores."

Marine Paint.—In a report recently published in New York, addressed to the President and Directors of the New Jersey Zinc Company, it is averred that "late experiments made at the U. S. Navy Yard at Gosport, have established, by the most conclusive tests, the decided superiority of the white oxide of zinc as a marine paint, over all others subjected to the same test, namely—white lead, red lead, marine paint manufactured at Philadelphia, verdigris, and coal tar. These experiments prove, that timber covered with two coats of white zinc is neither attacked by the worm, nor do barnacles attach to it when immersed in salt water; whilst all other paints tried offer comparatively no protection against these two great evils."

New Planing Machine.—An American invention for a planing machine has been brought over for the purpose of exhibiting and testing its capabilities, and obtaining an English patent for it. It was to have been sent to the Great Exhibition of 1851, but the inventor could not get it completed in sufficient time; and it comes now with the same general objects of public utility as in the case of the foreign articles sent to the Exhibition.

Improvement of the Reaping Machine.—A bedridden American millwright, named Atkins, residing at Chicago, has recently, it is said, invented mechanism for making the reaping-machine, after cutting the corn, deliver it in bundles ready for the binder. It consists of an automaton arm, terminating in a rake, which, as the reaper moves along, regularly sweeps the cut corn in sheaves off the board on which it has been deposited, drops each parcel at the side by a rotary motion, and then, extending itself, returns to its work again. A model of this invention, which is very simple, is, we hear, now being exhibited at the Polytechnic Institution of London.

Wrought-Iron by a New Process.—An improvement in the manufacture of wrought-iron has been claimed by Mr. James Renton, of Newark, New Jersey. It consists in the production of pure wrought-iron directly from the ore, with mineral coal, thus dispensing with the time and money-consuming process of reducing it first to pig-iron, and thence to wrought-iron by puddling, or with charcoal. An association, called the American Iron Company, have recently erected works in Newark, the right to the new process having been secured to them for New Jersey. The chief advantages claimed for the invention are, that the iron is produced for some 20 dols. per ton less than the puddled or charcoal iron, and that it is worth 10 dols. per ton more, on account of its superior quality; that a greater quantity of the iron is extracted from a given amount of ore than by the old process; and that it is the only process by which pure wrought-iron can be produced. It requires about two tons of ore and one ton and a half of coal to produce one ton of the wrought-iron. Mr. Mushet, if we rightly recollect, suggested this same process some years since.

Buildings at Boston.—The *Transcript* states that the project for a grand opera-house and theatre progresses favourably. A sum of 194,000 dols. has already been subscribed, and 6,000 more will secure the project from falling to the ground. At a recent meeting of subscribers it was resolved to purchase the Melodion estate, in Washington-street, and the Riding-school estate, in Mason-street.——The new Hall at the south end, over the Williams Market, at the corner of Washington and Dover-streets, is approaching completion. It is in the Corinthian order. It has seats for 1,650 persons. The hall is lighted with gas. It is shortly to be opened with the performance of Handel's oratorio of "Saul," by a new musical society. A new organ, built by Messrs. Simmons and Co. has been set up.

Bridges.—The bridges on the Baltimore and Ohio railway between Cumberland and Wheeling, number one hundred and fourteen. One of them is 600 feet long, and is elevated 40 feet above the Monongahela river, which it spans.

Bricks.—The brick-machine is getting into use in the States. Whether there be really any novelty in the form of it here alluded to by the *Scientific American*, we do not know. Every British invention, so soon as it comes out across the Atlantic, is a new invention there, and in after years gives rise to disputes as to origin. "A new machine for the manufacture of bricks by the application of Dick's powerful press, is being constructed under the direction of J. E. Holmes, at Hadley Falls, for a gentleman of Taunton, Mass. By this machine above 50,000 bricks can be made per day, with a pressure of 1,400 tons, exerted on every six bricks."

Ligneous Marble.—"This," says the *Boston Transcript*, "is the name given to a new species of imitation of the different varieties of marble, including the verde antique, Sienna, porphyry, and other celebrated specimens. The ligneous marble is manufactured in New York. We have seen some slabs, pillars, pedestals, &c. of this new article, which really cannot be distinguished from genuine marble, so close is the imitation."

Crystalotype.—We find in *Putnam's Monthly* for February a compliment to Mr. Whipple, of Boston, for his crystalotype,—or system of simultaneous daguerreotyping and engraving, the image being sunk into a plate of glass as soon as received into the camera, and there remaining in such form that the plate may be placed in the ordinary copperplate press, and impressions taken on paper.

THE MYSTERIES OF PICTURE-CLEANING.

HAVING heard a great deal of the damage done to the pictures in the National Gallery by an injudicious course of cleaning, I wish to make a few remarks pertaining to the art of picture-cleaners, for most assuredly it is one in which are many difficulties. Almost all pictures painted in different periods require a separate treatment for the cleaning of them; for example, the proper method for cleaning pictures on chalk grounds must be different from that for those painted upon Venetian ground; and high-finished Flemish and Dutch must be treated differently from the foregoing; the Roman differently from the Spanish and French; last of all, the English require more delicate handling than any, especially pictures by Reynolds, Wilson, Gainsborough, and Morland. That being the case, how necessary it is that the person appointed for such an undertaking should be proved fully competent before he is intrusted with the work, and that ought to be satisfactorily proved to a committee of competent persons before he or they should be allowed to proceed to clean pictures of known value. That there are competent persons I am assured, but they are not so numerous as people may suppose. Even carvers and gilders profess it, saying nothing about picture-dealers and others, who might properly be called picture-damagers.

Such persons have but one system, spirits of wine, and oil and water, ammonia, potash, soap, &c. and such nostrums, for all and every kind of picture. Is it to be wondered, then, with such nostrums, that so many fine pictures should be destroyed? The skilful practitioner thinks well what he is going to clean before he commences, as well knowing that it would be dangerous to treat a Claude as he would a Rembrandt or a Reynolds, or Wilson as either. What would remove the dust of the two former would deface the two latter. There is a point to go to in cleaning all pictures, beyond which is to damage them of every class, for the cream with which age has so beautifully clothed all old pictures once removed cannot be replaced, and below that lustre no picture should be cleaned: if it is, it sustains a very serious damage.

A word or two as to framing. It has often struck me very forcibly that some of the best pictures have lost a valuable requisite. A picture and frame should go down to posterity together. "Not so," says Mr. Modern Framemaker to the old frame; "you must give way to one of our times. You don't look well to our taste. You must have one of ours." It is absurd to put a picture painted in the middle of the sixteenth century into a frame of the nineteenth; it not only does away with all historical reminiscence, but detracts from the merit of the picture, by garbing it in a frame out of all kind of character.

W. H. C.

PROVINCIAL NEWS.

Ringwood (*Hampshire*).—A vestry meeting has been held to consider the subject of the restoration of the church here, when it was determined to carry out the original project; and, in accordance with the plans and specifications provided, the works will be commenced as soon as possible.

Chippenham.—Many new houses are being built in this town and neighbourhood; and extensive alterations, shortly to take place at the railway station, together with the erection of a proposed new district church, will give employment for a long period.

Newcastle (*Staffordshire*).—An earthenware manufactory is to be erected here, at a cost, including site, of not more than 4,000*l.* This resolution has just been come to by a new company lately organized.

Holmfirth.—The proposed flood monument which, at first, it was thought, would consist of a pillar, is, we understand (if funds will permit), about to be changed into a public dispensary, or some other practically useful institution. A slab, containing a list of the persons who perished by the flood, is to be placed in the interior. The cost of the building is estimated at 600*l.* or 700*l.* Upwards of 140*l.* have been subscribed.

Barnsley.—Contributions are being made for the erection of another church and a parsonage-house in this town. The amount already subscribed towards the church is 450*l.* It is said that the cost of the erection (dedicated to St. John) will be about 2,000*l.* of which 1,000*l.* will be granted by the Ripon Diocesan Church Building Society, and the rest is considered as virtually obtained. The church is to contain 700 sittings, 600 free, including accommodation for 150 scholars. A sum of 10*l.* has been raised towards a library for the use of the scholars.

Haddington.—A site has been purchased for a covered market-place or corn-exchange here, at a cost of 750*l.* A sum of 1,650*l.* odd has been subscribed towards the erection. Mr. Farquharson, of Haddington, has prepared a ground plan of the site, with three front elevations suitable for the proposed structure, one of which to cost 1,450*l.* has been adopted.

Sunderland.—The long-pending litigation between the directors of the Sunderland Dock and Messrs. Craven and Sons, the contractors, has been at length brought to a close by the award of Mr. Hugh Hill, barrister. The Messrs. Craven claimed a balance of about 20,000*l.* from the directors, who set up a counter-claim of 16,000*l.* for non-fulfilment of contract. By Mr. Hill's decision the directors will have to pay Messrs. Craven 18,400*l.* and a large proportion of the costs of litigation, which, it is supposed, will be a few thousands more.

Edinburgh.—The local Association for Improving the dwellings of the Industrious Classes have declared a dividend of two and a half per cent. for the half-year ending 31st December last.——"Improving," says the *Edinburgh News*, "upon the wisdom of Napoleon, who founded the splendid suburban abattoirs of Paris, and on the stupidity of the corporation of London, who resisted to the death all such innovations on their salubrious market-place, the inhabitants of Edinburgh have reason to congratulate themselves on the successful establishment of one of the greatest public benefits which a city can possess. In place of narrow, filthy, and putrescent slaughter-houses scattered about town, carrying disease and death into the abodes of the people, we have now a range of cleanly, well-lighted, well-ventilated, and well-drained killing-booths, together with separate places for swine and cleaning of tripe. Regulations of the most stringent character have been made with respect to their management. No intoxicating liquors are allowed to be taken within the gates, but a comfortable and commodious coffee-house and reading-room has been established, which, we are glad to learn, is well frequented."——A public meeting was held in

this city last week to take steps for the erection of a statue in the Parliament-house, in commemoration of the late Right Hon. David Boyle, Lord Justice-General and Lord President of the Court of Session. The chair was taken by the Duke of Buccleuch. The lord provost of the city, the Earl of Glasgow, the Lord Justice-General and other Lords of Session, Sir William Gibson-Craig, Sir John M'Neill, the Dean of Faculty and the Solicitor-General, and numerous advocates and other gentlemen connected with the law were present.

Stirling.—A new free church has been erected here at a cost of 3,200*l.* Of this sum, when the edifice was opened last week for divine service, 2,000*l.* had been subscribed, leaving a debt of 1,200*l.*; but the preacher, Dr. Duff, made a stirring appeal to the congregation to wipe off the debt at once, and at the close of the afternoon service a paper was handed him to the effect that the collection at the doors amounted to the sum of 1,351*l. sterling*. The building is said to be a large and commodious one, and is surmounted by a steeple of some height, containing a bell. The interior is lighted through stained glass windows.

Leith.—During divine service on a Sunday lately in the Established church at North Leith, smoke was observed issuing from the flooring near the pulpit and from the pews on each side of it. The people, however, kept their seats, and the sermon was proceeded with till the heat became so intense that the precentor and several persons had to leave their seats, and immediately the greater part of the congregation rushed out. It was then ascertained that the stove used for heating the church, and which is fitted up in a cellar underneath, had been overheated, and had set on fire the beams and other woodwork above and near it. Fortunately a number of soldiers present went for their barrack-engines, and extinguished the fire before much damage was done.

NEWS FROM IRELAND.

THE Society of Antient Concerts have had additional works (to those noticed by us before) executed at their Music Hall, Dublin. The roof has been raised 9 feet, and the room lengthened 10 feet in the centre. The dimensions of the hall are 96 feet long by 41 feet, and 46 feet high to ceiling. The orchestra is much enlarged and the plan modified. Fully sixty additional seats for the public are provided, and accommodation for upwards of 1,000 persons obtained. The ventilation has not been disregarded; ample provision is also made for the supply of cool air. The decorations are in the Corinthian style of architecture; and the new arrangements "for hearing" are stated to be satisfactory. Mr. Jackson, architect, furnished the drawings.

We are told, that the site of the intended Roman Catholic University for Ireland, is decided to be at Stephen's-green, Dublin. The committee have (we understand) purchased the large mansion, No. 86, for that purpose, and immediate arrangements for carrying into effect the intentions of the committee are being made.

The Lord Lieutenant has appointed Mr. W. D. Butler to be His Excellency's architect in ordinary.

It is stated that the National Education Commissioners purpose establishing a National School at Belfast; and we believe it is also contemplated to expend a large sum of money on proposed buildings in conjunction with the schools at Dublin.

The principal quoin stone of the New Church at Errislaman, in the "wilds" of Connemara, was laid some time since, by the Rev. Dr. Wall. Messrs. Banker, contractors.

At Belfast, important works are in progress, and many of various kinds are projected. The building trade is brisk; workmen, with remunerative wages, are in good demand, and the season promises to be a busy one. Some new warehouses are projected, which (independent of the public works in contemplation) are likely to give extensive employment. The erection of flax scutch-mills (by means of the loans and advantages offered by the Commissioners of Public Works) are rapidly progressing through Ireland.

It is proposed to establish an Athenæum and public Lecture-hall, at Limerick, and we hear that the matter has been taken in hand by some influential gentlemen, who have set a subscription on foot.

A public memorial is to be erected at Westport, co. Mayo, to the memory of the late Marchioness of Sligo.

The congregated trades of the City of Limerick have been presented by the Earl of Limerick with a free site in Roche's-street, for the erection of a new Mechanics' Institute.

The Earl of Caledon (we are informed) intends expending 30,000*l.* in the erection of a flax spinning-mill, together with machinery of the same. Its immediate commencement is to be proceeded with. Purchases of house-property to the amount of 6,000*l.* have been made in the village, where it is intended to effect large improvements. It is stated that his lordship annually spends in works on his estates 10,000*l.*

LADY LONDESBOROUGH'S COLLECTION OF ANCIENT RINGS AND ORNAMENTS.*

ALTHOUGH this book is printed but "for private reference," we are led to mention it; first, to record the existence of the valuable and interesting collection of rings and ornaments therein described; and, secondly, as a suggestion to the owners of other collections to prepare similar catalogues. So far from the apologetic sentence from Horace Walpole on the title-page being necessary,—"*Catalogues, raisonnés* of collections are very frequent in France and Holland; and it is no high degree of vanity to assume for an existing collection an illustration that is allowed to many a temporary auction,—an existing collection,—even that phrase is void of vanity,"—Lord Londesborough is much to be praised for the publication.

The collection originated, it appears, in the purchase from Mr. G. Isaacs, by Mr. C. Croker, of a collection of ninety-two rings, fibulæ, and brooches, gathered by him during ten years of research, and its ultimate transfer to Lord Londesborough, by whom it has been increased to 250 specimens. It includes rings of all sorts and countries, Egyptian, Roman, Gnostic, Magical, Episcopal, Talismanic, and Royal, and these are illustrated in the volume with much curious information.

Mr. Croker, by whom the catalogue was made, closes his prefatory letter to Lady Londesborough with a pleasant reference to a specimen *not* in the casket,—a certain plain gold ring, given with—

> "Sacred vows for life,
> To love the fair,—the angel wife,"

and valued by its owner more than the whole of the collection. How gracefully this is worn, and how admirably its owner discharges the duties of society and home, all who have the privilege of acquaintanceship can strongly testify.

SOUTHAMPTON IMPROVEMENT COMPETITION.

IN reply to the remarks on this subject in a previous number (p. 155), the surveyor of the Marsh Improvement Committee, Mr. Guillaume (whose design has been selected), has addressed a communication to us, denying that he "assisted in drawing up the resolutions in the light intended to be conveyed. He merely assisted, in conjunction with the other competitors, and in their presence, in framing one or two of the regulations for the guidance of the competition, and those were of a merely technical character. In fact, he had nothing more to do with the business connected with the competition than any other competitor." He wishes it understood, too, that the plans were sent in under motto, and the real name and address of each competitor in a sealed envelope. As to the building included in the design, contrary to instructions, he says, "The domed glass-house alluded to is not shown on the plan, but on a fly-sheet, and the description accompanying the plan contains suggestions for the future consideration of the committee, in reference to the said objectionable building; respecting which the objector will have further information, should he think proper to doubt the honour of the committee, and to inflict upon himself the cost of a law-suit."

Be this as it may, it is clear from the surveyor's own letter that our first correspondent is substantially correct. The selection of a design by a gentleman who had previously acted as the surveyor and adviser to the body advertising for plans, and who, in this case, if we mistake not, supplied the outline plan of the land to the various competitors, must always be open to animadversion.

* Catalogue of a Collection of Ancient and Mediæval Rings and Personal Ornaments, formed for Lady Londesborough. 1853.

FREE LENDING LIBRARY IN LONDON.

IF any journal in the British Empire can be singled out for pre-eminence and perseverance in creating a stimulant to diffuse wholesome knowledge amongst all classes, the *Builder* may, without imputation of invidious parallel with any other publication, fairly occupy the foremost rank.

This induces me to crave a notice in your valuable columns concerning the erection of a Free Lending Library in the city of London, which subject has been brought under the consideration of the Civic body, by Mr. Anderton, whose zeal and philanthropy are but equalled by his disinterestedness and discretion. This project has occupied my ideas and exertions many years. Immediately after the formation of the Manchester Free Lending Library, I corresponded with the mayor for the time being, who furnished me with all the printed details of the great educational movement, in which he took such a distinguished part. I communicated with the Lord Mayor of the City of London for the time being (now Sir John Musgrove, Bart.), with whom I had an interview at the Mansion House, on the most efficient means of instituting a similar institution in London. He was pleased to award praise to the plan I had devised, and promised to support its views after submitting it to several influential members of the corporation, who, after discussing the contemplated boon to the people, declined to co-operate in all its details. He expressed to me his unfeigned regret that this intellectual palace was not as prominently before the public as the crystal edifice then being erected.

In the meantime let us hope that the present gentleman who has so praiseworthily identified his name with this national enterprise, may persevere till his exertions be crowned with success.

JOHN GRAEME.

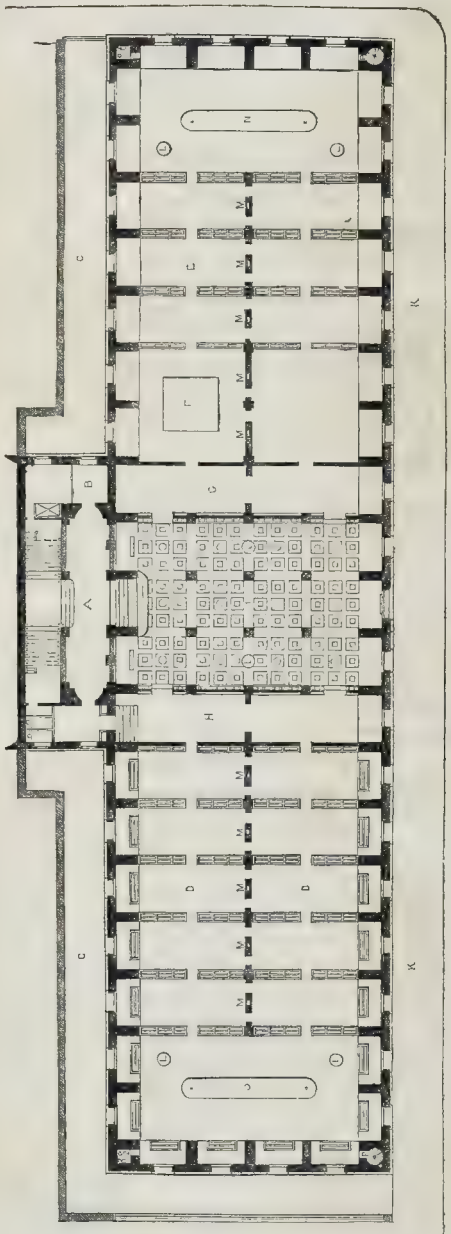
THE FRENCH PLAYS, ST. JAMES'S.

WE have before now recommended the French Plays as well for the advantage they afford to those studying the language as for the completeness and finish which the acting there usually exhibits. Mr. Mitchell has not relaxed in his efforts for the present season; he has as yet confined himself to *vaudeville* and *petite comédie*, but has given his subscribers the opportunity of seeing some of the best Paris actors in this class,—Maddle. Luther, Maddle. Lambert, Mons. Ravel, and Mons. Lafont. Ravel is very funny, his appearance singularly so, but excepting in *L'Etourneau*, he has disappointed the majority of those who know him only by his Paris reputation. Miss Luther, as the representative of young girls with *a character*, is without a rival. If the French actors, by the way, were as well aware of the bad construction of the St. James's Theatre as the English public, they would do less at the *side* of the stage than is now the case.

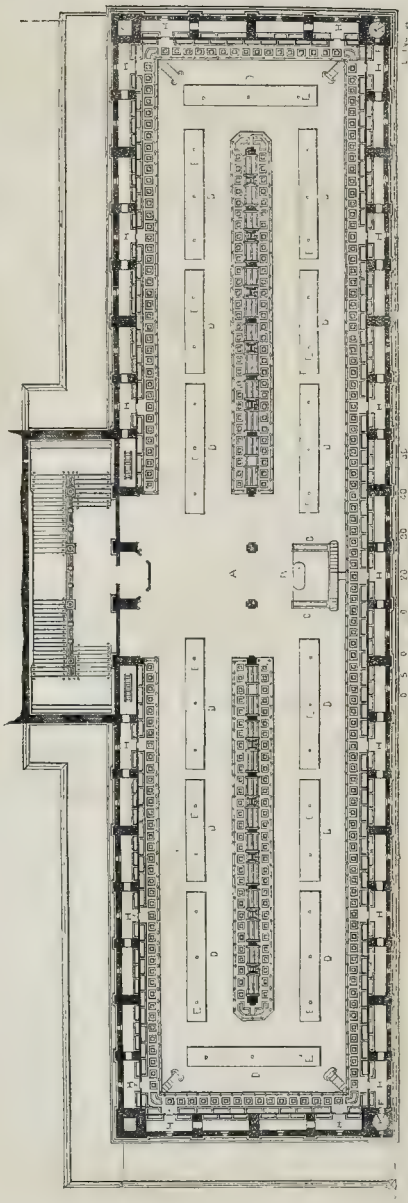
THE PORTLAND GALLERY, REGENT-STREET.

THE Exhibition of the National Institution of Fine Arts has been opened at this Gallery, and consists of 410 pictures. It is a pleasing although not first-rate collection, and will have notice from us hereafter. Mr. Glass, Mr. Lauder, Mr. Thorpe, Mr. Underhill, Mr. Deane, Mr. M'Ian, Mr. Sidney Percy, Mr. Arthur Gilbert, Mr. Dawson, Mr. Besson, Mr. Provis, and Mr. Laurence are the most successful exhibitors.

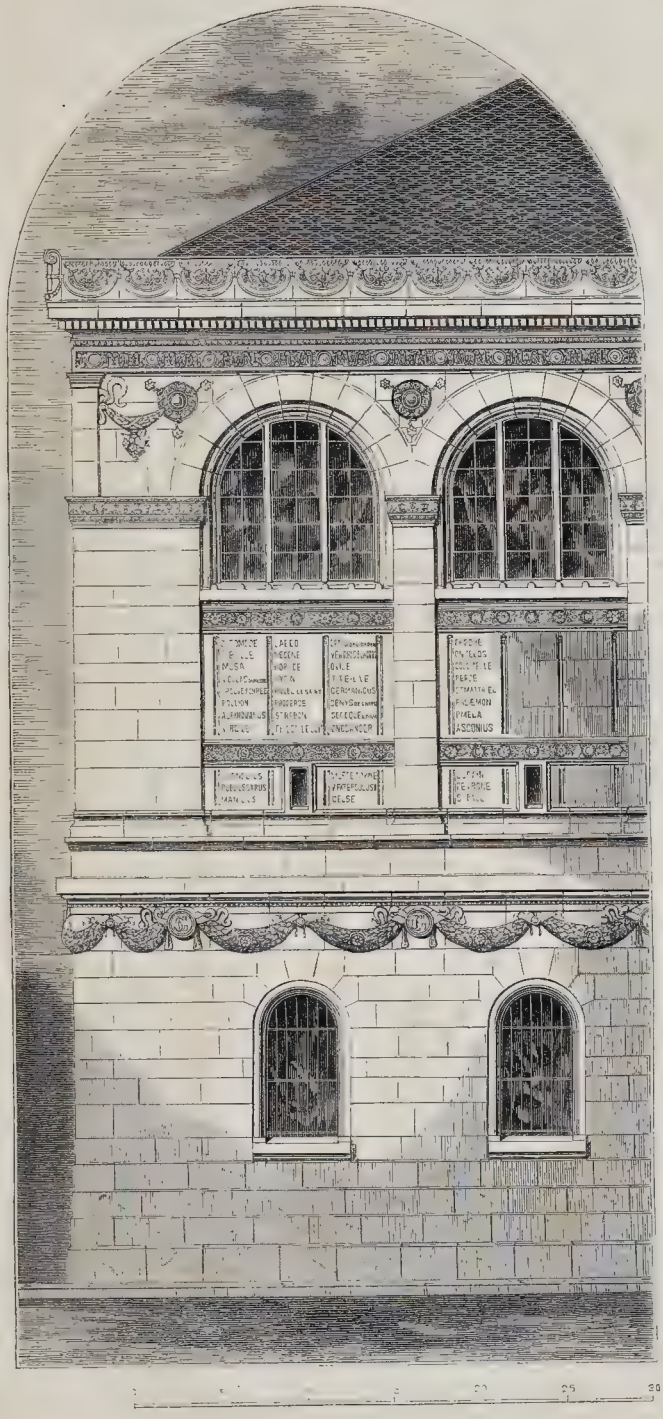
THE LIBRARY OF ST. GENEVIEVE.

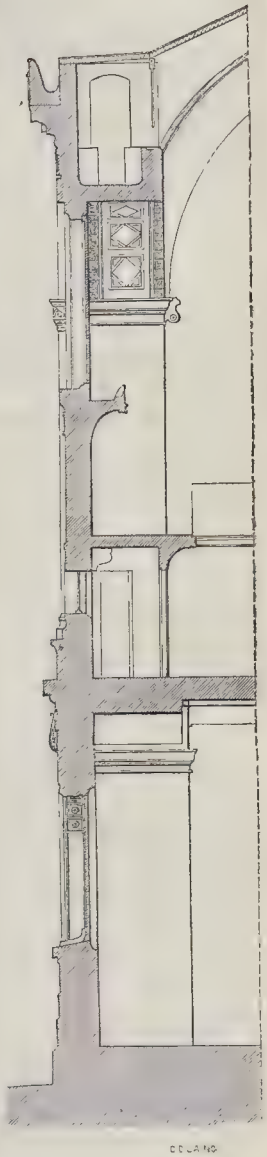


PLAN OF THE GROUND STORY.



PLAN OF THE UPPER STORY.





THE LIBRARY OF ST. GENEVIEVE, PARIS.——M. HENRY LABROUSTE, ARCHITECT.

HENNETT, THE RAILWAY CONTRACTOR.

THE failure of Mr. Hennett, the extensive railway contractor, has excited painful interest, especially in the West of England. The *Bristol Times* gives some particulars of his life, which show his great energy and endurance of labour. According to the writer, when he was in the full fling of his engagements, he might be almost said for weeks together to live in railway carriages, and conduct his business flying. Residing at Teignmouth (we are informed), he often left his home at night, and for two or three days together has been almost incessantly on the line from Exeter to London, Wolverhampton, and back again. A gentleman, whom business has more than once taken from Plymouth to London, when he has had Mr. Hennett for his travelling companion, has described to us the despatch with which the latter got through his engagements. For the most part he had a compartment of the carriage to himself, in which were his papers, drawings, &c. At Exeter, a clerk waited for him on the platform, got into the carriage and rode with him to the next station, doing business all the time, giving an account of what he was doing, and receiving instructions about what he had to do. When this man got out, his place was taken by another clerk of works, at a higher point of the line, with whom also Mr. Hennett quickly transacted his business. This clerk too got out, and another in, and so it continued until within some twenty miles or so of Bristol, when, knowing he had no one to meet him probably for the next half-hour, the contractor drew his woollen night-cap over his head, folded his cloak around him, settled himself into a corner of the carriage, and was the next moment fast asleep,—this doubtless being one of the secrets of his power of enduring labour, that he could instantly snatch a few minutes of sound rest in the intervals of work. A few miles the other side of Bristol, where he was to be met by another clerk, he woke up,—was ready to receive the man when he entered the carriage and go through work, refreshed in intellect, with him. All the way to London the same routine of business, with occasional short naps, continued, and he then told our informant that save for an hour or two in London each day, when he still would be at work, he expected for the next four or five days to live in the railway carriage with his papers and people. We believe when the Great Western Railway was first projected, Mr. Hennett was an assistant clerk at a small salary, though since then his contracts have at times amounted almost to millions.

THE FLUES OF THE BRITISH MUSEUM.

THE fate of Doncaster Church holds out an impressive warning, by making evident the necessity for extreme caution and constant vigilance wherever buildings are heated by flues. After that deplorable occurrence, who will say that the British Museum is safe. The prohibition of open fire-places and candles or gas is an insufficient precaution against such an accident as that at Doncaster. It is not, indeed, at all likely that if a fire were to break out the whole of the structure would be destroyed; but great, and of course quite irreparable, injury might be done to the contents of that part of it where a fire took place. Wherever there is a flue, fire may be hatching without any symptoms of it to create alarm. But you will, perhaps, begin to look upon me as a busybody alarmist: therefore, *punctum!* I have done, remaining as usual the very last of the alphabet,— Z.

WESTMINSTER BRIDGE.—In the House of Commons, the other evening, in reply to Sir D. L. Evans, Sir W. Molesworth admitted that Westminster-bridge was in a very ruinous and almost dangerous condition, and said that the present Government having been led to the conclusion that the determination of the late administration to pull down the existing bridge and to build a new one on nearly the same site was wise, he intended to proceed with their Bill, and that the new bridge would be wide, low, and at right angles with the present Houses of Parliament.

Miscellanea.

SIR JOHN GUEST AND THE DOWLAIS IRONWORKS.—The following particulars are condensed from the *Gentleman's Magazine:*—The mineral lease of Dowlais was granted about 1748 by Lord Windsor, and under it was erected the first furnace in South Wales for the reduction of iron-ore by means of pit-coal. By degrees, the Guest family became possessed of a part of the interest in this lease, and, finally, when Mr. John Guest succeeded to nine-sixteenths of the proprietorship, in 1815, he took the management, and raised the number of furnaces from four to eight, and the annual production from 20,000 to 30,000 or 40,000 tons. About 1824 there were eleven furnaces, and, by the introduction of new blowing machinery and improved arrangements, the annual production was raised to about from 45,000 to 50,000 tons. About 1826, Dowlais boasted twelve furnaces, and the largest blowing-engine then known. In 1831, Sir John rendered his works equal to the annual production of 60,000 tons. In 1835, there were fourteen furnaces; in August, 1840, eighteen; and, by various improvements, he raised the power of production to 100,000 tons annually, and actually produced that quantity of raw iron in 1849, when he sent into the market 75,000 tons in the form of bars and rails. The steam-power, which in 1815 was inconsiderable, at this time amounts to 4,989 horse-power, of which the blowing-engines employ 2,063; the forges and rolling-mills, 1,380; the coal and ore works, 967; brickmaking, 17; stabling, 9; and locomotion, 554. In 1849 there were 500 horses employed. The Dowlais Works freight, on an average, a ship a day in the port of Cardiff. Of ore, coal, and limestone, about 740,000 tons are annually raised, besides about 1,171,000 tons of shale and useless matter, raised to be thrown aside. In 1815, Dowlais contained from about 1,000 to 1,200 workpeople, residing in 100 cottages. At this time there are probably 3,000 cottages, and 15,000 inhabitants, of which about 7,000 draw pay direct from the works. The money payments in labour rose in 1845-6-7 to 30,000*l.* per month, or 360,000*l.* per annum,—a sum, the mere providing of which in coin to meet the weekly demand, was a somewhat weighty financial operation. At Sir John's death, he left the uncontrolled management in the hands of his wife, Lady Charlotte Guest.

STREET ARCHITECTURE.—In the present monthly review of Architecture as a fine art in the *Critic*, which is continued with great spirit and cleverness, the writer says:—"It is surprising that the rage for mediæval continental architecture has not yet alighted on the effectively ornate front of the *Palazzo Agostino*, at Pisa, so excellently delineated in three plates of the *Builder*, vol. x. pp. 120, 613, 643. As a piece of street architecture, it has not less general than particular merit. The horizontal divisions of basement, first and second storeys, are pleasingly varied: each compartment is for the most part beautifully designed and decorated with elaborate elegance. Character, breadth, and solidity are given by the projecting piers which reach from bottom to top; and we feel more than common regret that the proper decoration for the top story should be wanting. Doubtless the original design for this, with its crowning cornice, was worthy of the rest; and we would suggest, as well deserving attention, the supply of the deficient parts by some one well-instructed in the style, and competent in taste to afford them. In the event, however, of such an example appearing in our London streets, let the solid piers of the basement remain in bold development, with no more shop-front glass than may legitimately come between them. Let the faults of the front, moreover, be corrected; for unquestionably it is a grievous error to make arches rise *between* piers, instead of abutting *upon* them. Whether mere relieving arches, or open ones, they should seem to spring from a vertical solid, receiving at least a portion of their springing stones, and there is no reason why this should not have been done in the example under notice. A piece of recessed pier, not more than one-fifth the width of the main projecting one, would have sufficed, and in that case additional effect would have been given to the perspective of the front, by recessing the double and triple-pointed windows some inches within the circumscribing arches above them. A long range of such a building, terminating at each end with a bold projecting compartment of distinguished breadth, would present a scenic appearance scarcely to be surpassed by anything of the *same scale* in the metropolis."

FREE LIBRARIES IN THE CITY OF LONDON.—The Court of Common Council, moved by Mr. Anderton, have unanimously come to a resolution that it is desirable to establish a free library and a free circulating library in the city, and the matter has been referred to the library committee with instructions to consider whether any portion of the present city library can be made available towards such a purpose.

CLERKENWELL.—The correctness of your article on that portion of the south-west boundary of Clerkenwell, which boundary is defined by the in part uncovered Fleet-ditch, I can fully corroborate:—in the courts in and about Turmill-street, nothing can exceed the squalor, wretchedness, destitution and filth of the houses and inhabitants. This, however, be it remembered, is an outlying portion, and forms but a small part of Clerkenwell proper, which comprises an area of ground nearly equal to a square mile; extending from Battle-bridge to beyond the Angel at Islington (this is a misnomer, it being in Clerkenwell) to the Liverpool-road, thence down the Goswell-road to the Charterhouse-grounds; and embraces in its higher portions, on the heights of Pentonville, some of the most salubrious and pleasant squares and semi-suburban retreats that are to be found in the metropolis.—THE DISTRICT SURVEYOR.

RESPIRATOR FOR MASONS.—An Edinburgh clergyman, the Rev. Mr. Nisbett, of St. Giles's, has invented a cheap and simple respirator, of fine cloth (loose thick felt would have been better) and common horn, for protection of the breath and lungs from the injurious dust, for which Dr. Alison proposed as a preventive the wearing of the moustache. We long since suggested the use of a respirator, but, at same time, candidly expressed our belief that it would never be brought into general use. The moustache, as a saving of trouble rather than a daily prudential appliance, is much more likely to become a practicable and general preventive than any respirator, however simple or cheap.

CANADA RAILWAYS.—It is said that Mr. W. Jackson, M.P. is about proceeding to Canada with 15,000 labourers to carry on the railway undertakings in progress and projected there. Mr. Roney, the honorary secretary of the Dublin Industrial Exhibition, has been appointed general superintendent of the St. Lawrence and Atlantic Railroad.

COAST DEFENCE BY RAILWAY ORDNANCE.—Mr. Anderson, of Edinburgh, C.E. proposes, by the addition of a single hundred miles of railway added to to those which already encircle our also rock-protected coasts, and by the construction of 200 heavy, strong, special cannon-carriages, or moveable miniature forts, of which he has exhibited a model, to prepare the way for a warm reception to an invading army, at whatever point they might be landed on our coast. The basis of the carriage is, of course, a sort of truck, on which is a peculiar modification of the turn-table, with a heavy piece of ordnance,—a 32-pounder or even a 64,—to be worked by several men, protected by a bombshell shield, and supplied with power and apparatus for firing rapid successive discharges in any direction. The iron sides of the carriage convert it into a sort of masked battery till thrown down and fixed in the ground while in action, when they steady the carriage and protect the wheels from being shot away. This railway fort might also hold a dozen men with Minié rifles. The cost of the whole scheme Mr. Anderson estimates at half a million sterling. The military, we observe, are trying how rapidly artillery can be trucked and transmitted from place to place by rail.

RUSTY IRON.—About twelve months since I put up a considerable length of 5-8 rod-iron fencing in the country, purchasing the iron in London of a respectable merchant. I did not happen to see more than a sample rod of the iron until the fence was up, when I found a large portion corroded and eaten by rust; this was scraped off before painting, and my fence looked all I could wish. But *now* the rust and canker spread, and to all appearance many of the rods will soon be eaten half through. One remedy suggested is "bring an action against your iron merchant;" to this I reply, "No, for I hate law." Another remedy suggested by a country Solon is—"screape off the rust, loike, and rub in some *ile*;" this I decline, my adviser being an ignorant bumpkin of the "slow and dirty" school. I prefer, therefore, asking some of your numerous and intelligent correspondents what I ought to do to stop the corrosion, and enable me with safety to repaint my fence.—B. G.

ROAD MAKERS' TENDERS.—I forward to you for insertion the following tenders for making roads and providing and laying stoneware pipe-sewers on an estate at Wimbledon, Surrey, the property of the Church of England and General Freehold Land Allotment Society. Mr. Langford, surveyor:—

Oldham	£5,088!
Mayors and Davies	3,797
Bower	3,600
Murray	3,044
Pauling	2,798
Brown	2,600
Hayes	2,500
Siddons (accepted)	2,285
Diggle	2,250!

Difference, £2,838!! G.

GAS.—The Chelmsford Gas Company have reduced the price of their gas from 5s. 10d. to 5s. 5d. a thousand cubic feet. The company lately realized a dividend of 5 per cent. besides a reserve and 250*l.* expended in improvements.——The price of gas is to be lowered at Frome from 6s. 8d. to 5s. per thousand feet.——A gas company is about to be formed at Woodstock.——The *Ayr Advertiser* is of opinion that gas at Ayr ought to be a little lower than 6s. 8d. and with increased profit to the company from an extended consumption.——The price of gas at Sunderland is 3s. to consumers and 2s. for public lights; and the net cost of manufacture is said to be stated officially at 2s. The companies have advertised their readiness to contract for a series of years at present prices; and they are investing more capital in their businesses and extending their works.——Hydro-carbon gas is increasing in consumption at Southport, the number of consumers being now, according to the committee's half-yearly report, 30 per cent. more than they were in the previous half-year. The purification of the gas is said to cost only 1d. a thousand feet; and the loss by leakage and condensation to be only 10 per cent. The product per ton of Boghead cannel coal, at 30s. is stated to be 33,000 cubic feet. (At the South Metropolitan works it is said to yield 60,000 feet, equal to London gas.) The price at Southport is 6s. 8d.; and according to a calculation in the *Mining Journal*, the works must yield a profit of 17½ per cent. per annum for the winter half-year. The committee have set aside 200*l.* during this last half-year to a sinking fund, besides retaining a suitable sum in hand for current repairs. The quantity of gas produced at these works during the last half-year was 2,270,000 cubic feet.——A lecture on the chemistry of gaslight was delivered at Burton-upon-Trent last week by Mr. A. J. Bernays, F.C.S.

LIVERPOOL ARCHITECTURAL SOCIETY.— At the twelfth meeting of the session, the honorary secretary, Mr. Boult, read a communication which he had received from the assistant-secretary of the London Baths and Washhouses' Committee, relative to a note which appeared in a publication of theirs, in which Mr. James Newlands, the Liverpool corporation engineer, is charged with having put forward, as his own, certain plans or designs by the engineer employed by that committee. The letter was written with a view to substantiate the charges referred to. Ultimately, the subject was postponed to the next meeting. A letter was read intimating that a meeting, preliminary to the establishment of a photographic society, had been held that day, and that it was proposed to have working members and associates. Mr. Boult then read a paper entitled, "Some Remarks upon the Entrance to the Port of Liverpool," in which, after describing the causes which led to the formation of bars, he explained a plan of his own for relieving the river from such obstructions.

CROYDON.—GOVERNMENT SANITARY COMMISSION OF INQUIRY.—In consequence of the sickness which has prevailed in this town, Viscount Palmerston directed Dr. Arnott, M.D. and Mr. Thomas Page, C.E. to proceed thither and institute the most searching public inquiry as to the cause, which had been by some attributed to the system of drainage adopted. The commissioners have accordingly taken evidence on the subject.

AMENDMENT OF THE PUBLIC HEALTH ACT.—On a motion by Sir G. Pechell, for comprehensive returns as to the proceedings of the Central Board of Health, Sir W. Molesworth stated last week, in the House of Commons, that the Government have under consideration a measure for the amendment of the Act of 1848, so as to improve the constitution of the Central Board of Health, and render its working with relation to local boards more satisfactory. The Act, he believed, was founded on good general principles, and greatly promoted and cheapened local government, while it, in some respects, controlled it; but, doubtless, in details it required improvement. The motion was agreed to.

MR. THOMAS GRISSELL, well known to many of our readers, inaugurated himself on Thursday as High Sheriff of Surrey, when he first received his friends and the officials in the Town Hall, Kingston, and then proceeded, with the javelin men and a long cavalcade, to meet the Judges of Assize. With many of the magistrates of the county, there were about him Mr. H. T. Hope, M.P. Mr. W. Tooke, Mr. Charles Hill, Mr. N. Gould, Mr. W. Herbert, Mr. Elgcr, Major Grissell, the Rev. Mr. Bermeister, Mr. Field, Mr. Lee, and many others. Kingston, the ancient crowning-place of chief-magistrates, is a good locality for such acts. The inhabitants did themselves honour some few years ago, it will be remembered, by setting up in a fitting manner the ancient Kings' Stone. As a poet then sung:—

> "To the time-hallowed Past its homage due
> The Present wisely brings,
> And thus would we pour our chrism anew
> On the Throne of the Seven Kings."

THE METROPOLITAN DRAINAGE.—The Bill alluded to last week has been read a second time in the House of Commons, when the principle of it was supported by Lord Palmerston, on the part of the Government, on the ground that it would be for the public interest to relieve the ratepayers of the metropolis of the expense of arterial drainage, leaving their resources to be applied to the improvement of district drainage. Undoubtedly there was great room for improvement, whole districts being without drainage. The guarantee clause, his lordship remarked, was objected to, but it could be considered in committee, and, he confessed, that it seemed inconsistent with the soundness of the scheme as a commercial speculation; but believing that it would be a safe speculation, he thought it could be dispensed with. A meeting of delegates from the various metropolitan parishes has been held to consider this Bill, and very strong objections were urged against it, especially as to the guarantee clause empowering the company to tax the ratepayers. The consideration of the subject was adjourned. We view the Bill with some distrust ourselves, and advise watchfulness. We shall have more to say about it.

BRITISH ARCHÆOLOGICAL ASSOCIATION. — An ordinary meeting was held on March 9th, in Sackville-street; Mr. James Heywood, M.P. V.P. in the chair. Various presents were received. Mr. Bateman, of Golgrave, forwarded a communication relative to two casts of ivory carving-knife handles temp. Charles II. and of a Roman brooch, which was read by the treasurer, who also read one from Mr. Thomas Gunston, relative to discoveries in the City. Mr. Gunston states, that while passing through Budge-row, Watling-street, during the late improvements, he asked permission of the workmen to descend into the excavation there being made for a sewer, where he discovered a Roman wall, constructed of rubble, layers of tile, and concrete. This circumstance led him to inquire if any other remains had been found in that locality, and he heard that a vast quantity of articles of great interest had, and of which Mr. Gunston gave a list. Mr. Cuming read a short paper on the improbability of the genuineness of a great part of the remains said to have been lately found in London, and exhibited to the Association and elsewhere. The chairman and Mr. Pettigrew expressed themselves much interested in the necessity of exposing the deceptions which have been practised by dealers and others, by representing spurious articles to have been found in the City in the course of the late improvements. The following exhibitions were made to the Association by the Rev. Thomas Hugo. Three ancient weapons (Celts), found in Ireland, by Mr. S. I. Tucker; a pint pewter pot, found when old London-bridge was pulled down, and on which is, "Richard Smith, att ye 3 Neats Tongues, on London Bridg:" it has Queen Anne's mark on it. By Mr. James, a very perfect horse-muzzle, on which is the date 1561, and some German inscriptions; also several specimens of spurs of a very early period. By Mr. William Meyrick, a pauldron temp. Henry VIII.; a tassel for a page of the early part of the sixteenth century; and an inlaid sword temp. Elizabeth. Mr. Bartlett, some early spurs, and two Roman horse-shoes. Mr. Pettigrew read a portion of an elaborate paper on the antiquity of playing-cards; but more particularly relating to a pack exhibited to the Association at their second meeting this year by Mr. S. I. Tucker. These cards, which are fifty-two in number, are each embellished with a copper-plate engraving, caricaturing the members and acts of the Rump Parliament, and they were purchased some thirty years since by Mr. Prest, the collector, at the Hague.

THE ANCIENT PRIORY CHURCH, LEOMINSTER.—The excavations are still progressing, and the foundations may be said to be nearly all laid open. Since we last alluded to the matter, says the *Hereford Times*, an apsidal chapel has been discovered at the end of the eastern side of the south transept; also two other chapels, one on each side of the presbytery. The foundations of the Lady Chapel, at the extreme end of the eastern limb of the cross, are now being uncovered, and within the last few days a stone vault has been found, some 7 feet long by 4 broad and 15 inches deep, at the bottom of which, within a margin of about 14 inches all round, is an inner cavity of about the same depth.

THE WORKING-CLASS TESTIMONIAL TO THE LATE SIR ROBERT PEEL.—A deputation from the acting committee had an interview lately at the Admiralty with Sir James Graham, and other members of the Government, as to the clauses of the deed whereby the sum subscribed by upwards of 400,000 working men is to be invested in the London University College for educational purposes. The object is to apply the interest of the fund, under the direction of the college, in the purchase of useful literature for the working classes, to be presented annually to the various mechanics' and literary institutions throughout the United Kingdom.

THE ROSCOE CENTENARY.—At Liverpool the hundredth birthday of William Roscoe was celebrated by the various literary societies of the town and others on Tuesday in last week. Amongst other proceedings of the day a chief feature was the opening of the new museum by the mayor and town council in presence of a large number of ladies and gentlemen assembled in the reading-room. The Derby collection comprises 20,000 specimens, most of them consisting of stuffed beasts and birds, the remainder being in skin, simply from the inadequacy of the present accommodation for the display of the whole.

TELEGRAPHIC PROGRESS.—The wires of the magnetic telegraph were last week buried beneath the Preston and Lancaster Turnpike-road for a length of six miles, on the way to Carlisle. The same contractor, Mr. Read, of London, has begun operations at Gretna-green, from which place as a centre,—and a very appropriate one,—the magnetic connecting wires will proceed through Port Patrick to unite Ireland with Britain across the Irish Channel. The length of the two contracts from Preston to Port Patrick will be about 220 miles, making a total length of the six wires required in the iron troughs of 1,320 miles.——Mr. Elihu Burritt proposes a girdle telegraph to encompass the globe from St. Petersburgh to San Francisco, *vid* Behring's Straits, the British possessions in North America, and the Pacific coast, with, ultimately, ramifications towards the south of Asia and Europe, one of them threading the ports on the eastern coast of China—to astonish the Chinese.

AN OYSTER SEMINARY.—Under the leading title of "The Royal Emporium, George-street," an Edinburgh paper says,—"An establishment for supplying all the delicacies of the table has been lately opened by Mr. Anderson, fishmonger. It consists of a series of shops, combining fish, fruiterer's, butcher's, and poultry premises. What particularly arrests attention are the ice and oyster stores in the under apartments. Each of the former is calculated to hold 1,100 carts of ice. . . . The fish brought into the establishment are preserved on the top of the ice. The oysters, which are supplied from Mr. Anderson's great store at Prestonpans, where 50,000 of the natives are kept alive, are fed in their receptacles with rock-salt and water. . . . The convenient arrangement, freedom of ventilation, and consequent exemption from all offensive smell, render the Emporium a perfect model. Mr. Anderson has it in contemplation to embellish it with a superb crystal fountain." If there be a seminary on earth in which the oyster that is to follow his master upstairs is to be educated, it is this.

PARKS FOR THE METROPOLIS.—A correspondent of the *Morning Herald* suggests the formation of several small enclosures of 20 to 50 acres throughout a metropolitan district, in place of one extensive park of 200 to 300 acres, as at Battersea and Hackney. Some of the many melancholy pieces of field and garden ground throughout the suburbs, studded with boards announcing that they are "to be leased for building purposes," ought, as he remarks, to be purchased by the Woods and Forests, and laid out in time as recreative grounds for the people; and even the indiscriminate crowding of other such plots with streets of houses devoid of the smallest strip of garden ground or open space, ought to be put a stop to by law, so that the space either remain open or the proprietor be compelled to lay it out on a more healthful principle.

PROPORTION.—Do, pray, give a hint to your architectural readers that the gable cross of a cathedral 200 feet from the ground is a *little* too big for a gable only 20 feet high—that proportion has *something* to do with effect in architecture. The Weston-super-Mare station has hip-knobs and the usual modern additions of corner pendants big enough for a *ferme ornée* in Brobdignag, and it is not much worse than many one sees every day.—AN ARCHITECT.

BUILDING SOCIETIES.—We are told that there are at the present time 2,000 building societies in existence, having an invested capital of 30,000,000*l.* and an annual income of 2,500,000*l.*

A ROOF BLOWN OFF.—On Saturday week, the roof of a building in course of erection at Pendleton was blown off by the wind. The building is being erected for spinning-machinery. The amount of damages is about 300*l.*

ROYAL MANSION AT BALMORAL.—We understand that contracts have been entered into for the new mansion for her Majesty and Prince Albert, at Balmoral, and that the works will be proceeded with so soon as the weather permits. The works are to be carried out from the designs of Mr. W. Smith, of Aberdeen, architect.

METROPOLITAN WATER BILLS.—In reply to a question put by Lord R. Grosvenor in the Commons, the Home Secretary stated it to be the opinion of the Government that, considering the arrangement already entered into for the improvement of the supply of water by the present companies, no new ones should be established till the old "had received a fair trial."

THE GREAT SUSPENSION-BRIDGE OVER THE TAMAR.—In Mr. Brunel's report to the Directors of the Cornwall Railway, in allusion to the difficulties and the presumed excessive expense and doubtful policy of the construction of the Saltash Bridge and adjoining viaducts, it was stated, that Mr. Mare, M.P. of Blackwall, iron-ship builder, well known also as principal contractor for the iron-work of the Britannia Bridge, has contracted for the entire execution and completion of the whole work, from the founding of the pier in the centre of the river to the erection and finishing of the superstructure inclusive, for a fixed sum, which, taking into account the rise in the price of iron, does not exceed Mr. Brunel's previous estimate. The amounts of the different tenders are said to have been remarkably similar, approximating to a degree unusual in large contracts. Arrangements are making by Mr. Mare for proceeding with the work immediately and with expedition.

POWERS, THE AMERICAN SCULPTOR, in a letter from Italy to a correspondent of the *National Intelligencer*, U. S. who had asked him to return to America, complains of having been overlooked by Congress. In reply to an inquiry for a catalogue of his works, he says,—"It will not be large. I have made some hundreds of busts, but few statues—those of the 'Greek Slave,' 'Eve,' 'Calhoun,' the 'Fisher Boy,' 'California,' 'La Penseroso,' and 'Washington.' The three last are not yet finished. I have executed five of the 'Greek Slave,' three of the 'Fisher Boy,' one of 'Eve,' and one of 'Calhoun,' and others are engaged. 'Washington' is for the state of Louisiana. The order was given, I am proud to say, by a unanimous vote of the Legislature. I should have mentioned 'America' in the above list. This is about half done, in marble—a perfect block, but it is of the size of the model, 6 feet 1 in. high. I intended his for a colossal statue, say 12 or 14 feet high, but could not afford to make it without an order for it. She points to heaven with one hand, and treads on a sceptre with one foot, and she leans upon an emblem of union (the fasces) with her right hand. She wears the original thirteen stars upon her forehead. Her attitude is as of one addressing the people, and the motto is, 'Trust in God, maintain the Union, and crush Despotism.' Her expression is earnest and confident, and she is draped from the waist down, but in such a manner as to reveal her figure. I presume that you do not care for an enumeration of my busts, but I will mention some of them. I have busts of Mr. Webster, Calhoun, Adams, Jackson, Marshall, Everett, Col. W. C. and John S. Preston, McDuffie, Van Buren, Judge Burnet, Mr. Longworth, and some others of our conspicuous men. *Here* I have made busts of the Grand Duchess, Princess Demidoff, and others. Prince Demidoff, by the way, has two statues, the 'Greek Slave' and the 'Fisher Boy,' done by me. There are two of the 'Greek Slave,' and one statue of my 'Fisher Boy' in England, and there are many ideal busts of mine there. I hope you will understand me rightly in all that I have said above. I do not complain of anything, for I know how the world goes, as the saying is, and I try to take it calmly and patiently, holding out my net like a fisherman, to catch salmon, shad, or pilchards, as they may come; if salmon, why then we can eat salmon; if shad, why then shad are good; but if pilchards, why then we *can* eat them, and bless God that we have a dinner at all. Sincerely your friend—H. POWERS."

NATURAL GAS JET.—Some men employed in sinking a bore on the Dalziel estate, at Motherwell, near Glasgow, for the purpose of ascertaining the position of the underlying minerals, had penetrated to a depth of about 50 fathoms, having passed through what is known amongst miners as the Ell seam, when their labours were suddenly arrested by an upward gush of hydrogenous gas or fire damp issuing to the surface by the bore. Accidentally, or otherwise, the stream was ignited, when a jet of flame, peculiarly clear and vivid it is said, at once shot upwards to the height of 70 feet. From the elevated position of the bore, and the brilliant nature of the light, it is visible at a great distance.

TENDERS

For building a Hotel and Club Chambers in Victoria-street, Westminster. Mr. Henry Ashton, architect. Quantities supplied by Messrs. Hunt and Stephenson and Mr. Bennett.

	If an additional story be omitted, deduct
Holland £53,987	..... £2,024
Kelk 53,710	 1,973
Smith and Appleford ... 53,550	 1,903
Piper 49,877	 1,641
Cubitt and Co. 49,000	 1,860
Lock and Nesham..... 48,955	 1,500
Pollock and M'Lennan 47,744	 760
J. and C. Janson 47,300	 1,620
Rigby 47,100	 1,610
Lucas 46 947	 1,550
Jay 44,890	 1,550
Myers 44,148	 1,728
Mackenzie 42,000	 1,500

TO CORRESPONDENTS.

"E. J. K." (thanks: we do not require them). "Z." (we shall be happy at all times to hear from our correspondent). "A. W. H." "Paulatim" (the remedy proposed would be a failure). "H. A." "L. M." "G R." "J. S." "W. H." (overlooked). "E. H." "J. W." "B. G." "I. W." (we are unable to advise as to appointments in Australia). "B. F." (ditto). "M." (ditto). "J. J. C." "E. R." "R. L. S." "G. P." "B. A." "J. L." "E. L. G." "G. L." (we will visit the building). "L. G. B." "C. L. N." "Brighton." "Sea-sider." "J. H." "R. and N." (under our mark). "J. D." "W. C." "J. A. P." "C. M."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

BUILDERS' BENEVOLENT INSTITUTION.—The Offices of the Institution will be REMOVED, at Lady-day next, from 6, New Oxford-street, to 19, SOUTHAMPTON-STREET, Bloomsbury-square.
A. E. HARRIS, Secretary.

PHOTOGRAPHY.—Students are informed, that they may enter upon a COURSE of INSTRUCTION in all the branches of the above art, at the Photographic Department of the ROYAL PANOPTICON of SCIENCE and ART, in Leicester-square, on and after MONDAY, 21st instant.—By order of the Council, T. J. BROWN, Secretary.

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MANUFACTURERS OF

FIRE-BRICKS, PATENT GLAZED STONEWARE DRAIN PIPES, CLOSET PANS, ORNAMENTAL TRUSSES, BRACKETS, MODILLIONS, PEDESTALS, VASES, &c.;

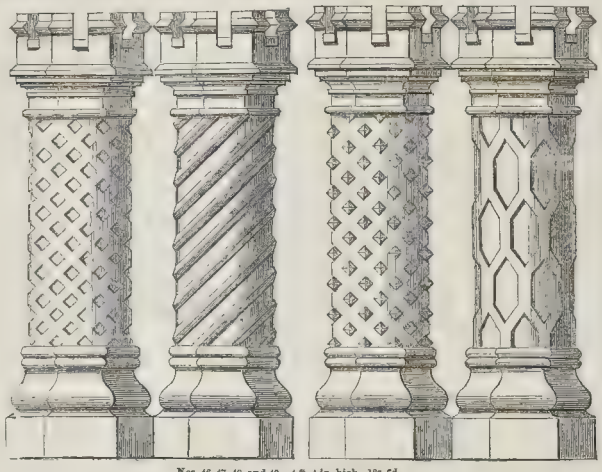
ALSO OF

TERRA COTTA CHIMNEY-TOPS,

In upwards of One Hundred Patterns, of various dimensions and of first-rate design, a few of which are given below,—scale half an inch to a foot.



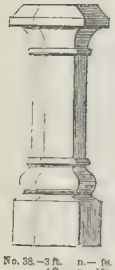
No. 67.—Wind-guard. 3 ft. 6 in.—10s.



Nos. 46, 47, 48, and 49.—4 ft. 4 in. high—18s. 6d.
" " 6 ft. 9 in. " 25s. 0d.
" " 9 ft. 0 in. " 60s. 0d.



No. 65.—3 ft. 6 in.—7s. 6d.



No. 38.—3 ft. 6 in.—6s. 0d.
4 ft. 0 in.—10s. 6d.



No. 18.—Oblong or Square.
2 ft. 3 in.—2s. 3d.
2 ft. 6 in. 2s. 6d.
2 ft. 9 in.—4s. 0d.



No. 24.—Wind-guard.
3 ft. 6 in.—5s.



No. 3.—2 ft. 0 in.—1s. 6d.
2 ft. 6 in.—2s. 0d.



No. 14. 2 ft. 6 in. 2s. 6d.
2 ft. 10 in.—4s. 0d.
3 ft. 8 in.—3s. 6d.



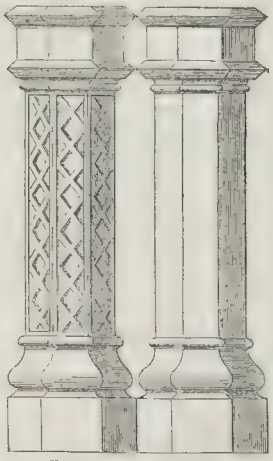
No. 13.—3 ft. 1 in. 4s. 6d.



No. 66.—Plain or Wind-guard.
3 ft. 10 in.—10s. 6d.
4 ft. 3 in.—12s. 6d.
4 ft. 8 in.—15s. 0d.



No. 76 (round).—1 ft. 10 in. high—2s 6d.



No. 73.
6 ft.—28s.

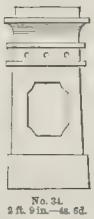
No. 74
6 ft.—35s.



No. 75 (square).—1 ft. 10 in.—2s 6d.



No. 50.—4 ft. 3 in.—13s.
6 ft. 0 in.—20s.



No. 34.
2 ft. 9 in.—4s. 6d.



No. 19.
2 ft. 9 in.—4s.



No 21
Oblong or Square.
2 ft. 6 in.—3s. 0d.
3 ft. 0 in.—3s. 6d.
3 ft. 6 in.—3s. 6d.



No. 4.
2 ft. 8 in.—2s. 6d.



No. 70.
4 ft. 3 in.—15s.

ARCHITECTS' DESIGNS CAREFULLY EXECUTED, AND WITH QUICK DESPATCH.

Prices quoted are delivered free in Leeds, on Boat or Rail, for any part of the Kingdom.

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LONDON..... No. 14, York Chambers, George-street, Adelphi; No. 16, Bath-place, New-road; St. Ann's Wharf, Limehouse.
BIRMINGHAM.. No. 7, Easy-row; also King Alfred-street, adjoining Bingley-hall, and Lawley-street.
BRISTOL..... No. 14, Nelson-street.
LIVERPOOL .... No. 9, Russell street, and Shipping Wharf, Leeds-street.
MANCHESTER.. No. 49, Travis-street, and 23, 24, and 25, Birmingham-street, London-road.
HULL..... No. 2, Humber-street, and Wellington-street.
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WHERE DRAWINGS, WITH PRICES, &c. MAY BE OBTAINED.

THE THIRD PIMLICO BUILDING SOCIETY.—Established February 24th, 1853. Shares, 120l. each; monthly subscription, 10s. per share; entrance fee, 2s. 6d. per share. This Society is based upon entirely new principles, the chief object being to secure the greatest possible advantages to the borrowers. The directors serve gratuitously. All the law charges are fixed and reasonable. On the first subscription evening 218 shares were taken by 89 members. The directors will be prepared to sell 3,000l. on the next subscription evening, March 31st, at half-past eight. The subscriptions being payable between the hours of six and eight. All persons taking shares previous to the sale will have the right of purchase.—Applications for shares, prospectuses, and rules, may be made to Mr. STENSON, 1, Bywater-street, Chelsea, or to Mr. STRONG, at the Office, 37, Sloane-square.

WANTED, a HYDRAULIC PRESS, for testing iron girders, up to 50 tons.—Apply to Mr. PATERSON, at Mr. Mackenzie's new buildings, Victoria-street, Westminster.

DRAWING INSTRUMENTS WANTED. A box of second-hand, with colours, brushes, &c. &c. complete, without chalk-scales and off-sets, all of first quality.—Pre-paid letters, addressed to T. A. Post-office, Oxford, with full particulars and description of both instruments and colours, will have immediate attention.

PLANING MACHINE.—WANTED, a SECOND-HAND PLANING MACHINE, to take oak planks 20 feet long and 1 foot wide.—Apply to JAMES OXLEY and CO. Vatmakers, Frome.

TO BE SOLD CHEAP, a PAIR of ENTRANCE-GATES or DOORS, with superior wrought-iron work, wicket-gate, locks, &c. 12 feet high, 10 feet 6 inches wide. Also, a Pair of Wrought-iron Gates, with locks, &c. all in a good state of preservation, 9 feet high, and 12 feet 9 inches wide; both used at the entrance of the late House of Correction, Guildford. For particulars apply (if by letter post-paid) to W. K. 113 High-street, Guildford.

BRICKS.—60,000 very superior White Facings; 100,000 good Ming'ed, half of which will do for facings; 40,000 good hard kiln-burnt Red. The Advertisers are willing to enter into contracts to deliver 500,000 during the next six months at any station on the Eastern Counties or Great Northern Railways.—For terms and samples, apply at 56, Aldersgate-street, City.

BRICKS.—700,000 Suffolk White and Red BRICKS for SALE, at Aldeburgh, Suffolk.—Apply to Mr. NEWSON GARRETT, Lloyd's Agent.

BRICKS.—From Two to Three Millions of good sound STOCKS to be SOLD.—Apply to Mr. FYSH, Trafalgar Tavern, Southgate-road, Hoxton.

BRICKS.—TO BUILDERS, BRICKLAYERS, &c.—Good STOCK BRICKS FOR SALE at H. R. BARLOW'S Brick Field, Queen's-road, Dalston, near the Turnpike-gate (no toll).

LIGHTERAGE.—To Saw-Mill Proprietors, Timber, Slate, and Stone Merchants, or others, requiring Lighterage.—The Advertiser having a large number of Barges, is willing to undertake LIGHTERAGE at prices that defy competition.—CHARLES STRUTTON, 34, Commercial-road, Lambeth.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c.—JAMES LYNE HANCOCK, Sole Manufacturer (and Licensee), Gower's Cement, Gower's-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now manufactured from 1-8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE for FIRE ENGINES, LIQUID MANURE, and for conveying HOT WATER to BATHS in DWELLING-HOUSES and BREWERIES, manufactured to resist great pressure of any length and size to order.

*** Testimonials may be had on application at the Manufactory.

N.B. VULCANIZED WASHERS and SHEET RUBBER or Steam and Hot-Water Pipes, and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Plaster Lime fresh as the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

BOILED OIL FOOTS.—TO BE DISPOSED OF, about FOUR TONS BOILED LINSEED OIL FOOTS, of good quality. Samples and price may be had on application to W. BINKS and SON, Oil Boilers and Refiners, 126, High-street, Hull. Warranted clean and free from any other description of Oil Foots.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

WHITE ZINC for PAINT, &c.—To MERCHANTS and WHOLESALE DEALERS.—White Zinc is much cheaper than White Lead.—To Private Families: Particulars of the sanitary advantages of this isothenic substitute for common paint, forwarded by LANGSTON, SCOTT, and WHITE, Sole Manufacturers in England (Scott's Patent) Works: Grand Surrey Dock, Rotherhithe.—Address letters, 10, Lombard-street, London.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore-street, City, Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.

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GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.
WATERLOW and SONS, 65 to 68, London-wall; and 49, Parliament-street, London.
Contracts for the supply of large establishments.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Trays, &c. &c. manufactured by J. M. BLASHFIELD, Mill Wall, Isle of Dogs (near the West India Docks), and sold at No. 1, Prescot-street, Edgware-road, Paddington.

M. late THOMAS WARD, SASH and SHOP FRONT MANUFACTURER and JOINER to the TRADE, 126, Upper Whitecross Street, St. Luke's. Established 1790.



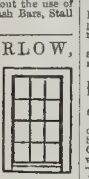
Upwards of 300 good seasoned doors in stock.
Workmanship and Materials of the best description.
Estimates given for every description of work.
By enclosing a postage stamp a full list of Prices will be returned.

REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 96, Regent-street, and at his Steam-works, 125, Old-street. These shutters have fully borne out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to noblemen whose mansions are fitted herewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

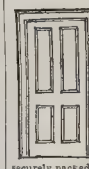
CHARLES WM. WATERLOW, Manufacturer of Sashes and Frames, and Joinerto the Trade, 121, Bunhill-row, Finsbury-square.

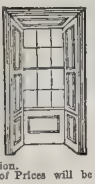


Well-seasoned materials, superior workmanship, lowest prices.
Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.
Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.
N.B. This establishment is worth the notice of all engaged in building.



NO. 18, CURSITOR-STREET, CHANCERY-LANE.
SANDS and EMERY,
Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.





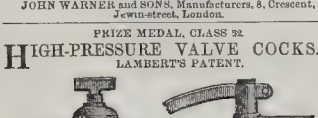
Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation.
By inclosing a postage stamp, a full List of Prices will be returned.

TO LOCAL BOARDS OF HEALTH, ENGINEERS, AND SURVEYORS OF WATERWORKS.

By Royal Letters Patent.

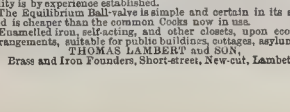
GRAY'S IMPROVED GALVANISED STEEL or GLASS BALL VALVE FIRE-COCKS or HYDRANTS.
T. W. GRAY begs to inform engineers of waterworks and others, that he has recently taken out a patent for a new description of Hydrant or Fire-cock, with Glass or Steel Balls, combined with India-rubber seatings, and with powerful double screw bottom stand-pipes, both of which he will warrant to stand any amount of water pressure.
The superiority of the new Patent Hydrant over all others consists in a cheap valve without brunsing, marking, or stitching, to which all other ball valves are liable, and it offers advantages not hitherto obtained. Boards of health, water companies, and the public have the option, under my new and old patent, of using a steel or glass ball. The glass ball has been under the pumping main of 400 feet pressure for many months, and the reports are perfectly satisfactory, for which testimonials can be given for its durability. The strength and beautiful surface of these balls calls the attention of all engineers interested in water supply. The new patent also claims the cock and box compound, which considerably decreases the expense.
Drawings and particulars may be obtained, or sent free by post, and Fire-cocks or Hydrants supplied in any quantity, on application to T. W. GRAY, at his Offices, 79, King William-street, City, London; or at the Works, 1, Margaret-street, Limehouse.

TO WATER COMPANIES AND PLUMBERS.
HIGH-PRESSURE COCKS & CLOSETS.



The Health of Towns Commissioners having recommended the adoption of the high-pressure principle in all towns, WARNER'S HIGH-PRESSURE COCK is recommended as a Cock free from leakage, and applicable for all purposes and situations. Patent Closets and Basins with supply-valve for attaching direct to main pipes without a cistern, cocks, or wire.
LEAD, IRON, and TIN PIPE.
JOHN WARNER and SONS, Manufacturers, 8, Crescent, Jewin-street, London.

PRIZE MEDAL, CLASS 32.
HIGH-PRESSURE VALVE COCKS.—LAMBERT'S PATENT.



These Cocks have, during the last five years, been extensively and most successfully used in many Towns under continuous high pressure, varying from 100 to 350 feet; their efficiency and durability is by experience established.
The Equilibrium Ball-valve is simple and certain in its action, and is cheaper than the common Cocks now in use.
Enamelled iron, self-acting, and other closets, upon economic arrangements, suitable for public buildings, cottages, asylums, &c.
THOMAS LAMBERT and SON,
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LIFE DEPARTMENT.—Under the provisions of an Act of Parliament, this Company now offers to future insurers four-fifths of the profits, with quinquennial division, or a low rate of premium without participation of profits.
The next division of profits will be declared in June, 1855, when all participating policies which shall have subsisted at least one year at Christmas, 1854, will be allowed to share in the profits.
At the several past divisions of profits made by this Company, the reversionary bonuses added to the policies from one-half the profits amounted, on an average of the different ages, to about one per cent. per annum on the sums insured, and the total bonuses added at the four septennial divisions exceeded 770,000l.
FOREIGN RISKS.—The extra premiums required for the East and West Indies, the British Colonies, and the northern parts of the United States of America, have been materially reduced.
INVALID LIVES.—Persons who are not in such sound health as would enable them to insure their lives at the tabular premiums may have their lives insured at extra premiums.
LOANS granted on life policies to the extent of their values, provided such policies shall have been effected a sufficient time to have attained in each case a value not under 50l.
ASSIGNMENTS OF POLICIES.—Written notices of, received and registered.
Notice is hereby given, that fire policies which expire at Lady-day must be renewed within fifteen days at this Office, or with Mr. SAMS, No. 1, St. James's-street, corner of Pall-mall; or with the Company's agents throughout the kingdom, otherwise they become void.

PHŒNIX FIRE ASSURANCE COMPANY, Lombard-street and Charing-cross, London. Established in 1782.

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SOLICITORS.—Messrs. Dawes and Sons, Angel-court.
Insurances against loss by fire are effected by the PHŒNIX COMPANY upon every description of property, in every part of the world, on the most favourable terms.
Persons insuring with the Phœnix Company are not liable to make good the losses of others, as is the case in some offices.
Insurances with this Company expiring at Lady-day must be renewed within fifteen days thereafter, or they will become void.
Receipts are now ready at the principal offices, Lombard-street and Charing-cross, and with the respective Agents throughout the United Kingdom.

ALL POLICIES INDISPUTABLE.
SOVEREIGN LIFE ASSURANCE COMPANY, 48, St. James's-street, London.
Advances made on real and on unexceptionable personal security where the sureties are resident in London or its immediate vicinity.
H. D. DAVENPORT, Sec.

TO ARCHITECTS, DRAUGHTSMEN, ARTISTS, &c.
WINSOR and NEWTON have on hand a large and varied stock of Whatman's Turkey Mill, stringmarked or outsides Drawing Papers, of all sizes, surfaces, and thicknesses, from demy, size 20 inches by 15, to double elephant, 40 inches by 26, well adapted for first plans, specifications, or general office purposes, and much cheaper than the ordinary cartridge papers.
Price Ten Shillings for 14 pounds, or 4l. the cwt.
WINSOR and NEWTON, Artists' Colourmen, 38, Rathbone-place, London.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 1s.; Dutch holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

WHERE TO BUY A DRESSING-CASE.—In no article perhaps is caution more necessary than in the purchase of a dressing-case, for in none are the meretricious arts of the unprincipled manufacturer more frequently displayed. MECHI, 4, Leadenhall-street, near Gracechurch-street, has long enjoyed the reputation of producing a dressing-case in the most finished and faultless manner. Those who purchase one of him will be sure of having thoroughly-seasoned and well-prepared wood of leather, with the fittings of first-rate quality. The prices range from 1l. to 100l. Thus the man of fortune and he of moderate means may alike be suited, while the traveller will find the Guinea Dressing-case especially adapted to his necessities.—4, LEADENHALL-STREET.

RESISTANCE of FROST by GUTTA PERCHA.—The peculiar non-conducting property of GUTTA PERCHA TUBING, by preserving greater resistance to frost, renders it SUPERIOR TO any kind of METAL TUBE FOR THE CONVEYANCE OF WATER. The Gutta Percha Company have received the following

LETTER FROM R. UNDERHILL, ESQ. BIRMINGHAM.
"June 22, 1849.
"Last winter I filled a half-inch gutta percha pipe with water, having also covered the ends with the same material, and I exposed it for two nights of severe frost. Early on the second morning I cut the pipe through, and found the water as liquid as when put in. This circumstance, of course, proves that gutta percha is an excellent non-conductor."
N.B. The Company's illustrated circulars, with instructions for joining the tubes, and for securely attaching gutta percha soles, will be forwarded, post free, on receipt of four postage stamps.
THE GUTTA PERCHA COMPANY, PATENTEES, 18, WHARF-ROAD, CITY-ROAD.

DO Builders BRUISE their OATS?—And if they can keep one horse, would they not like to keep a pair at the same expense? That's all. Then get MARY WEDLAKE'S MANGER FEEDING MACHINE. Portable mangles, 35s. 6d.; pea bitters at 18s. 6d.; gorse crushers, at 12l.;—118, Fenchurch-street. Book on Feeding, 1s.; per post, 1s. 4d.; list of machines, with 140 cuts, 1s.; per post, 1s. 4d. Out-bruisers, chaff engines, domestic flour-mills for private use, so as to make one's own bread, &c.

THE WRYSGAN SLATE and SLAB QUARRYING COMPANY, on the Festiniog Range, Port Madoc North Wales.

Capital, 15 000, in Shares of 1l. each, without further liability, On the Cost Book System. No Royalty, and no Deed to sign.

Offices, 26, Gresham-street, City.

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Edward Bates, esq. Boundary-place, St. John's-wood.
G. B. Heather, esq. East-street, Hackney
T. W. Wilkinson, esq. Gresham-street, City.
(With power to add to their number)

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Thomas Rowlandson, esq. C.E. F.G.S.
At Port Madoc—W. H. Rawlings, esq.
PRINCIPAL AND MANAGER—T. W. Wilkinson, esq.

The Directors have purchased the Lease of these valuable Slate Quarries on very advantageous terms, the proprietor taking seven-eighths of his purchase-money in paid-up shares of the Company. The lease, which is equal to near forty years unexpired, at the low rent of 35l. per annum, without any royalty whatever, embraces an area of about 400 acres, with ample water power for all purposes, the quarries, or veins, extending more than three-quarters of a mile and 60 yards wide, on the course of a high mountain, showing an almost inexhaustible supply.

Four openings have been made, and slates sold of the finest quality for roofing purposes, samples of which are lying for inspection at the Offices of the Company. Slabs and Blocks are raised at these quarries up to 18 feet long, and from the advantages of this rock scarcely any blasting will be required; thus enabling the Company to make nearly all large size slates. The roads here already made, with a tram-road from Port Madoc nearly to the works, so that a small outlay only is required to put the machinery and quarries into working order; and from the great and increasing demand for all kinds of slates, which far exceed the supply (all the principal quarries having at least six months' orders on hand), the Directors, with these advantages, hope to be enabled to pay a dividend in three or four months. The Festiniog Slates are well known for their superiority, and this quarry is equal, if not superior, to any on the range, with advantages for working that enable the Company, from careful calculations and estimates, to show a gross profit of 100 per cent. The Directors have, therefore, great satisfaction in recommending this undertaking as a safe and very pr fitable investment for tradesmen and the working classes in general. The public are invited to inspect the Estimates, Reports, and Engineer's Report, at the Offices of the Company, where Prospectuses may be had, and all information may be obtained.

Application for Prospectuses and the remaining Shares may be made on or before the 28th instant, in the usual form, to the following Brokers:—London, George Humphrey, Esq. 8, Throgmorton-street; Liverpool, Messrs. S. R and T. R. Healey; Manchester, Messrs. Johnson, Bradley, and Walker; Hull, Messrs T. W. Flint and Co.; Leeds, Mr. T. M. Beverly; Bristol, Mr. J. K Thomas; Edinburgh, Messrs. Hughens and Dobson; Glasgow, Mr W Mu ie, jun.; Birmingham, Mr. Thomas Kell; Wakefield, Mr. P Nightingale; or to the Purser, T. W. Wilkinson, Esq. at the Offices of the Company, 26, Gresham-street, London.

VALENTIA SLATE SLABS.—A barge, containing about 8,000 feet of inch, 4,500 feet of 1¼ inch, and 1,500 feet of 1½ inch SLABS of large dimensions, with some other thicknesses, is landed, for the convenience of purchasers north of the metropolis, at Freeman's Wharf, City-road Basin.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, Place Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRADIS, Belvedere-road, where terms may be obtained.

THE PIMLICO SLATE-WORKS. Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally. "MAGNUS'S ENAMELLED SLATE" notwithstanding the vile imitations and infringements of the public that are attempted, continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble Price-lists and a sheet of drawings sent to any part of the kingdom grans. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

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BOX WEATHER STONE, of best quality, SCALLETT BLOCK, &c. &c. supplied direct from the Quarries by ROBERT STRONG, Quarry Proprietor and Stone Merchant, Box, Wilts. The great durability of the Box Ground Stone, without using the most intense frost, renders it a desirable stone for all external building purposes. Orders to any extent immediately attended to. Depôt, Box Station, Great Western Railway, where an extensive stock is always kept. Every description of Stone Work, both plain and ornamental, prepared ready for fixing. Ashlar, Rangework, Walling Stones, &c. &c. always on sale. Vases in elegant variety. URNS, FOUNTAINS, CHIMNEY PIECES &c. &c.—Box, Wilts, March 10, 1853.

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CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

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The Machine is fed with any kind of clay rough from the bank, and at one operation PERFECT FACING BRICKS, solid or hollow, are produced at the rate of from one to three thousand per hour, and in no dry a state as to stand six or nine high in kiln, when delivered by the machine. The power required will be from ten to fifteen horse; and the Patentee furnishes an engine suited to this particular work.

For price and further particulars apply (pre-paid) to the Patentee and Manufacturer,

CHARLES JOHN CARR, BELPER, NEAR DERBY,

Where the first Machine may be seen in work on Monday and Tuesday next, the 21st and 22nd instant; after that, it will be taken down and erected in a brickyard in an adjoining county, to which it is sold.

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Malm Place, Bull-washed Stocks, and Place Bricks also on sale. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing

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ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridges, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 125 (having been at first No 111.

PAN TILES, 52s.; Plain, 35s. per 1,000; superior White and Red Facing Bricks.—Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gasand other shaped Goods. Window and Nonnich Oven Tiles and Bricks, Dutch and English Clinkers, Patent Malt-kiln, and Corn-drying finely perforated Tiles, 12 in. and 9 in. Paving ditto, unequalled in quality and colour, at WARD'S old-established Honduras Wharf, Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 36, Pall-mall, London.

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The Washington Chemical Company having, during the last year, established a Manufactory of Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent of the chemical of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour more like an Enamel than a paint, and a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its relative colour nearly better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively, is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 102, that is, 60 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of body being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than a paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable.

The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

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BELFAST	Messrs. William Stevenson, jun. and Co.

The Builder.

SATURDAY, MARCH 26, 1853.

THE recent sparring in the Metropolitan Commission of Sewers, and the assertion on the part of one of the commissioners, Professor Hosking, that it was practising a delusion on the public to say that the commission had settled upon a plan for the drainage of London, led us to inquire into the grounds on which this statement was made. It would require more time and space than we can now afford to place before our readers all the particulars we have gleaned; we must content ourselves with saying that the remark seems quite justifiable, and then give two or three of the reasons on which the commissioner in question founded it. The plans before the commission are those of the late Mr. Frank Forster. The sewer on the north side began on one of its levels at the end of the Serpentine in Bayswater and ended at Barking Creek Mouth. That on the Southwark side commenced at Kennington and ended in Greenwich Marsh, to the great horror of the people of Woolwich. Part of this sewer, on the Southwark side, was actually under contract; but this was cancelled when the commissioners found they had not power to borrow money.

Mr. Hosking showed that, although the instructions were that the fall of the sewer from Bayswater to the river was to be in no place less than 4 feet in a mile, for five miles out of the twelve the fall was much less,—namely, for one mile 2 feet, and for four miles about 3 feet 3 inches.* That there was no discharge till half tide instead of at low water. That the crown of this sewer where it crossed the East and West-India Docks Railway would have been within twelve inches of the rails, which would not have admitted a proper covering for the sewer, and that the commissioners had not power to cross the line. That the estimates given did not even pretend to be correct,—the expense for the districts north of the Thames was called 1,080,000*l.* exclusive of buildings and land,—and that the plan for this part of the metropolis had never even been formally "adopted" by the court. To call this, therefore, a settled plan was absurd. The stowage room required at the discharge end of the sewer was assumed by an eminent member of the late commission to be twelve acres, as it could only be 8 feet deep.

It should be mentioned, moreover, that it was impracticable to carry the line which was to skirt the Thames, along the beach at Waterloo-bridge; and that Mr. Forster had proposed to join his new sewer to the failure known as the Victoria-street sewer. This sewer, with its cracked crown,—a ruin from its birth,—was estimated, we may say, at about 17,000*l.*; and if we assert that it has already cost more than double this amount, we shall not exaggerate,—saying nothing of the buildings injured—the United Service Institution, Exchequer Office, &c. and the claim now made by the Duke of Northumberland for damage to the extent of 11,000*l.* It is, moreover, a deposit sewer, wholly unsatisfactory.

In October last the commissioner named moved:—

"That, having regard to the contemplated revision of the sewerage of the metropolitan district, with a view to the removal or discharge of the sewage waters in a manner less offensive and more efficient than that now in use, it is the opinion of this court that every endeavour ought to be made to ascertain, with respect to any scheme proposed for adoption, whether such scheme is, and can be shown to be, in any important particular defective, or for any reason, or on any account, objectionable, or not the best that has been devised or can be suggested."

This was carried. He afterwards moved—

"That the scheme before the court should be submitted to competently skilled professional and practical men for investigation; such investigation to have reference to the object aimed at, without regarding the instructions and limitations under which such scheme was devised and laid down."

An amendment, however, was carried, to the effect, that the motion was premature. And since then it would seem that the inquiry has slept.

It was quite time that all this should be known, that it might be seen that the commissioners were *literally doing nothing* towards the thorough drainage of London.

As to the "Great London Drainage Bill," it professes to be more than it is, and should have the immediate attention of all the parishes in the metropolis. The company expect to reap a profit (some of those concerned in it a certain fortune), but they are to take no risk. The shares in this company, if the Bill be made an Act, will be equal to stock in the Funds, with the possibility of much larger returns. On the back of the Bill its *powers* are set forth to be "To incorporate a Company for relieving the River Thames from Impurities by Draining the Metropolis by Tunnel Sewers—Powers to collect the Contents of Sewers, and to dispose of the same for Agricultural Purposes;" there is not a word of the power to claim from the public funds a sum sufficient to pay annually three per cent. on the whole amount expended, whatever that may be. We assume, without fear of contradiction, that we have yet to discover the means by which the sewage may be made to pay a dividend on the cost of constructing these sewers; the public will therefore have to pay it, and should of course have control over the expenditure, and be satisfied that the best mode of drainage is adopted, and that the works are efficiently performed.

We object *in limine* to confiding the drainage of the metropolis to the hands of a company, whose only object, naturally and as a matter of course, will be to secure the greatest possible return for the capital expended. If, however, this is to be conceded, it is absolutely necessary that the fullest investigation of the proposition should be made,—the course, fall, and construction of the sewer be properly determined, and that powers be taken to compel the company to adhere to the arrangement that may seem the best after the inquiry; so that should they relinquish the work before it is completed (not very likely, though, if they obtain the guarantee of three per cent. on their expenditure), it may be carried out by the public. One fact is sufficient to show how uncertain the data has been. The plan issued by Mr. Morewood, in 1847, sets forth the inclination to be 1 foot in a mile; in the plan adopted by the company now seeking to carry out his scheme, the fall is, we believe, set forth as 4 feet in a mile. Some may think this of little consequence, since, practically, their sewer will always stand charged. The City have petitioned Parliament to be heard upon the details of the measure before a Committee of the House of Commons; so, too, the Metropolitan Commissioners: and these examples ought to be followed by other bodies.

* It did not appear that the commissioners had any reliable data for fixing on 4 feet.

A Nelson Memorial at Portsmouth.—There has just been completed, on Southsea-beach, a memorial of Nelson, consisting of a superstructure of granite, surmounted by an anchor, which belonged to Nelson's ship, the *Victory*, and has been given by the Board of Ordnance. The spot on which it stands is that from which Nelson last embarked from the shores of England. The cost has been defrayed by Lord Frederick Fitzclarence, Commander-in-chief at Bombay, late Lieutenant-governor of Portsmouth.

A JANGLE ON BELLS ARCHITECTURAL, BY A LOVER OF DAY-DREAMS.

JANGLE THE FIFTH.*

INSPIRATION.

Weary, weary; I was very weary: for the houses were many and the outlay but very small; and I had my own private ideas and views, and, alas! my employer was on his side of the question similarly gifted; and though I loved it not I must give way, and fetter myself with ideas of "neatness," and adjust over my eyes the thick bandage of precedent:—an easy task enough, perhaps, some may think; and so it is when we do but get used to it; but, thanks to the Fates, or something better than Fate, this said task of "getting used to it" is a miserably dull and grievously wearisome process. And that it is so, and that we do feel weary and disgusted and dispirited, I here give thanks; no half-and-half polite compliments to the destinies, but real, loving, heartfelt thanks; and I would indeed that all these unpleasant feelings were yet stronger and still more strong, until they should at last attain such measure of power as to render this "getting-used-to-it" process for ever impracticable.

So thinking, I threw down my pencil, which, with that natural perversity common to all pencils, alighted on its good point, breaking it thereby. I hailed the omen, saying gladly, "No more of you for this one day at least;" and then drawing my chair before the fire, invoked with all my heart the presence of Pacifera; but, alas! she came not. Then, as I sat awaiting her presence, my thoughts, though rambling enough at first, began to shape themselves something into order, and to form a connected chain, some little way towards light out of the universal chaos; so, forgetting Pacifera, I sat muttering to myself:—

"What with our books of Grecian and our books of Gothic, every possible order and every conceivable style are most correctly delineated, even down to the 'imperceptible curvatures;' and many other things not much plainer to our vision. Surely, surely, we have dry bones enough, a stock on hand sufficient to furnish a new world with styles, ready made and ready cut and dried; and yet with all this we cannot manage to furnish ourselves.

Out of doors one universal cry of complete dissatisfaction is every day sounding; nor if we shut ourselves closely up can we then escape the clamour, but into our very studies it comes roaring and raging; no way are we free from it. And yet, when trembling for his safety and eager to appease, and anxious to propitiate, the poor architect turns to his anatomical chests, and picking out the very choicest of his dry bones, waves it as a wand of peace before the universal eye, he does but add fuel to the fire. Louder and louder is the clamour raised; fiercer and fiercer does the wrath arise, till some, more furious than the rest, shake their many curls, and threaten even with a halter. Then to the recesses of his study does he go, and with bitterness laments that this English people are so destitute of taste. Alas! and alas! when will the dawn come of better things?

Dear Sir, one word with you. Is the thing thus? Have you such amplitude of faith in your osteology, and is it faith or blindness? Now, candidly and between ourselves, should you swallow down in such implicit belief that some gaunt skeleton was a living man, even though one should try so hard to persuade you? Oh dear, no! You would see the light shining and hear the wind whistling through his ribs far too plainly for any such belief; and even were we to substitute a corpse for the skeleton, I for one should despair of convincing you of its vitality, and yet you do yourself certainly expect the 'discerning public' to put their faith in some such skeleton or corpse, and think it a real and living being. Not so, however: a corpse it will ever be till the breath of life finds its way into it, and the spirit pervades and animates it. Therefore, there is stern necessity that life, vitality, or inspiration (call it by what name you please) must be forced into these dry bones of yours before this said corpse can live; and the sooner this thing is accomplished the better for ourselves and the better for others.

* See p. 177, *ante*.

Now, that we have the dry bones is incontestable, Athenian Stuart laid the foundation for that; and since then, in our own country, many a pocket has been worn with lead tape, or scented with odoriferous heel-ball in the same worthy pursuit of bone collecting. But from whence are we to derive our inspiration? 'Nature,' says one; 'history,' another; 'Christianity,' a third; and 'ourselves,' cries a fourth,—a juvenile friend of mine, who will know better ere long, I hope. 'Gentlemen,' I would say, 'with all due deference to your judgment, you all (excepting the last) are right, and all are wrong. For we are not, I grieve to say, in that enviable state, that we can go so directly even to nature for our inspiration, as you would wish: we have for a long time now been advancing at a perilous rate in a wrong path, full of snares, and pitfalls, and big stones; and there is great room for wonderment and thanksgiving that we have escaped with even the broken bones we now possess; and so, before we go to nature, we must try and get out of this wrong path; we must endeavour to make our escape from this dread dungeon—one of despair, indeed, if we fly not soon; and to open the rusty locks of its barred door, a key which I have in my bosom will, I think, alone do it, and its name is 'Common Sense.'

Now I think that this key, simple enough (too simple for many, I fear), will open the locks of many dread dungeons in which we are sitting, and amongst others this dungeon of dry bones. For really, looking at it in a plain, John Bull, common-sense view, does it stand to this said 'common sense' that a style of architecture, invented for and adapted to the requirements of a people living many ages ago, foreign to us in manners, foreign in religion, foreign in climate, foreign, indeed, in almost everything,—does it, I ask, stand to common sense that this, their own national style of architecture, will meet our wants and our requirements in this much-vaunted nineteenth century, with all its chaos of marches of intellect, tubular bridges, Crystal Palaces, and other things exclusively our own, on which the public eye gazes with much complacency? Does not common sense condemn and declare altogether against this? 'But,' says the apologist, 'of course it wants adapting and altering to meet our requirements.' Exactly so, but yet not as he would dream; for what is wanted is such a good, stern adaptation as the Greeks themselves made of Egyptian work; or as we may see in the superseding races of animals as revealed by the geologist. Everything good being preserved and profited by, but how altered! How superior the new creation to the one preceding it! So superior, that in the case of architecture, learned antiquaries quarrel even now as to the exact root of many a fine tree. Not much quarrelling of this kind by-and-by over many of our trees, I fear: into the fire with them, root and branch, and scatter the ashes to the four winds, will be the universal cry.

But to return; once more, with reference to this dry bone question, we may let Ictinus sleep in peace, and come a little nearer home. How far grounded and established, and built up in 'common sense,' is much of our present day Gothic? Any osteology here? Were the requirements of the fourteenth century quite those of the present day? Do we, for instance, shut up ourselves in gloomy castles, surrounded by pestilence-breathing moats? Do we yet believe that the hideousness of gargoyles worthily represents the miserable fate of the outcasts from the church? And have we no better way of taking water from our roofs than pouring it down to ruin the very foundation? Are we yet building sedilias, in which none sit, and restoring piscinas, destined ever to remain innocent of water? Do we never torture wood into the semblance of stone forms, with mimic buttresses and mimic arches? Or do we never put real buttresses of solid stone in places where they are of no earthly use, but stand as a continual witness of our great blindness and complete folly?

Would not 'common sense' overthrow all this? And is it not the right key to unlock the doors of these our dungeons, and the right directing-post to guide us in retracing our errant footsteps.

Then if this be indeed the case, let 'common sense' be henceforth our guide and leader; so may we hope to be rendered fit for inspiration, and by inspiration to realize an architecture worthy of our age, and adapted to our every want; for 'common sense' will altogether condemn all things false and fictitious; and, indeed, in this consists its great value; for there never yet has been great work done by man, neither by poet, nor architect, nor painter, nor philosopher, but it has had stern truth for its basis; and the more national and widely diffused that truth the better for the success of its expounder. Then if truth is so necessary for the production of any really great work, and if the establishment of common sense as an authority will in any way guide us towards truth, and enable us more readily to condemn and cast out, and destroy, with every possible species of contempt and ignominious falsehood, from our art, why, all hail to our new leader; a long life and a prosperous reign to him.

In the name, then, of this mighty and magnificent chief,—this potent warrior in the cause of good,—dread enemy to evil,—dispelling light of the dark black vapours which surround us,—in the name, I repeat, of 'Common Sense,' let me beseech you henceforth and for ever, dear comrades, friends, fellow workers, whoever you are, and wherever you may be; whether imprisoned in our modern Babylon, and fighting your good fight there, or solacing yourselves in the sweet country, gaining strength for future efforts; let me beg and implore that you will never do anything, or permit, as far as in you lies, anything to be done in the exercise of your glorious art, but things which are founded on and sanctioned by common sense.

And if you doubt me in this, if you think it but a multiplicity of words without meaning, or at the best but a matter of opinion or of choice, or if in the warmth of your juvenility, and looking with foolish pride and complacency on your but half-fledged wings, you perhaps consider art as infinitely superior and far beyond so every-day a thing as 'common sense,' just stay a little while from pronouncing the condemnation which even now quivers on your tongue, and calmly reflect one short moment. Granted; I grant it fully and with acquiescence the most complete, that 'common sense' is, after all, what its name implies, and that there is nothing very wonderful or very elevated about it. All the more shame, then, in the first place, if you should be destitute of a thing so universal; and in the second, though art may be and is far beyond it, let us take a lesson from our own practice; for the stones are very rough and very massive with which we prepare and build our foundations; the earth is pressed firmly to their sides, and they are all unseen, and yet it is their strength which supports our building's glory; our fair spires, but for these, would be mingled with the dust, and our every effort would be useless; and so to us, when we design, should 'common sense' be the basis and the foundation on which all our fancies must be built: get this thing firm and sure before we dare to indulge in one glowing thought or wander into the mystic realms of imagination.

It would be but an endless task to show how deeply we have continually erred against this great law, and how frequently we have built up fabrics of strange fancies founded not even on the sand; and so, what wonder that before the artist dies, his work should fall into contempt. What wonder that fashion should so hold our art enthralled under its wretched yoke? What wonder that we hear of Grecian and Gothic and Crystal Palace manias, and are quite unable to deny the existence of such things? What wonder that this should be indeed the case, when the first law of our art is continually disregarded, and but seldom entertained even in thought. Of what avail has it been to us that we have had, and still continue to have, fountains from whose waters we might draw inspiration in such plenteous streams as hitherto no other nation has been blessed with seeing, and much less blessed with realising? Of what avail has it been to us that we have a history full of noble actions and records of noble men, who gave up their energies and their happiness and their lives, that so they might benefit and do good to this erring world? Of what avail has it been to us that we stand forth now first of the nations of the world, resting in our strength, and firm in the exercise of our lawful liberty, a light to all afar off, and a beacon in their path? Or again, of what avail has it been to us that we have a country whose forest glades Diana need not blush to frequent, and rivers whose waters might well be imagined the right abode of fairest nymphs. Or, better still,—for we care not for nymph or goddess now,—forests and rivers, and hills and plains, clothed with the spirit of beauty, and speaking in clear and lasting accents of the wisdom and the praise of Him who gave to them their being, and clothed them with their loveliness? Once more, of what avail has it been to us that we live under the light of a religion which should be in itself sufficient to give us such thoughts and aspirations as should leave those of all other nations far behind. Think what Greece might have been had she lived in our light, instead of struggling in a darkness which many of her greatest sons perceived, and seeing, strove to rend, but strove in vain; and yet of what avail to us has all this been? Ah! what indeed!

Must there not be something strangely wrong, something singularly deficient, and most lamentably wanting, that all these things, blessings unspeakable, should be lavished so bounteously upon us, and yet our profit be so small, and our efforts so poor and feeble? Is it not because we have swerved from the right path and gone, perversely gone, astray, bowing down to the dictates of men, and worshipping any Nebuchadnezzar's image which may have been set before us, lapsing into a blind, cold, hard, foolish, and unthinking idolatry, which has so completely ensnared us, that we stand, or rather lie, bound hand and foot, not knowing how to rise, or whither to go should we rise.

Common sense! common sense! key to this dreary dungeon, would indeed that your reign might instantly commence; would indeed that men would try your power, grounding in you all their efforts, and doing nothing but what your laws would sanction: and then should our corpse of architecture speedily indeed revive, filled with new life and gloriously inspired."

So I ceased, and sitting still for a time, a feeling of self-gratulation and complacency began to steal over me, and I secretly indulged a half regret that my sermon should have been all so unheard, and so likely to die into oblivion; when,—

"'Ever thus, ever thus,'" said Pacifera, "ever ready are you, ye sons of men, to claim for yourselves, and greedily snatch at any morsel of praise or fame which you may think belongs to you; and so, because I did not absolutely appear to you, but contented myself with prompting you, when I saw your ideas were coming to an unavoidable stand-still, why, forsooth, you attribute all to your own cleverness, and your guide and leader, though so lately found, is altogether forgotten. No; not a word; it is my turn now. Prompting you, as I said,—for though you may plume yourself on this new-found guide of yours, yet, as you were arguing his worth mainly because he will ensure truth, why not rather hold up to admiration, and as a guide and leader, that more glorious light still,—truth? Perhaps you were afraid of trespassing on other people's ground, but to me there are no such fears; free as the air through which I float, I rejoice in all, and use all; and even were it not so, truth is a wide field, and perchance we might find something new to observe in it. But now, farewell: this topic for my next visit, which shall not be long delayed; and, meanwhile, regard not your pencil's omen, but diligently strive to mould your houses into forms guided by 'common sense.'"

I did as I was told; resharpened my pencil and set to work: pleasant work this time, too, and with some little satisfaction I viewed the result. The design struck, however, on the rock of my employer's prejudices, and he abandoned the project altogether.

Roman Pavement at York.—In making a drain in Tanner-row, York, a Roman tesselated pavement has been discovered, about 10 feet below the surface.

A VISION OF TRAFALGAR-SQUARE.

IT appears to me that amongst the many signs of the times favourable to the cause of art, nothing of a more hopeful character has occurred than the discussion which took place in the "House of Commons" on the 8th inst. respecting the enlarging the present National Gallery, or building a new one on another site. How much-soever members might differ in their particular views of the subject immediately under discussion, they were unanimous in their appreciation of the culture of fine art; and professional artists as well as the public generally must derive satisfaction from the earnest tone, the comprehensive views, and the unfeigned devotion to the cause manifested by the Speaker. But I wish not to deal in generalities, but rather to advert to a suggestion made by Mr. Hume on the occasion alluded to, viz. the recommendation that the temple of the arts should stand in Trafalgar-square, and that the barracks and other buildings in the rear be removed, in order to give full scope for accommodation and architectural display.

English artists look with an anxious eye at Trafalgar-square. They know well what might have been, and what may still be done, in that arena, to the honour of art and for the benefit of the public. It is my firm belief that no point in any existing city offers such an opportunity for the legitimate display of architectural magnificence as that of Trafalgar-square. Artists, like prophets, look into the future. Will you permit me, therefore, to sketch out a design which, I think, will, in the course of time, be carried into effect in the above-mentioned neighbourhood? When nations shall have laid aside the weapons of war, they will take up those of peace; an intellectual and generous warfare will then be waged, and England—comprehending that her honour is at stake in such a struggle, will cherish the arts. Then blunders in art will no more be overlooked than blunders in legislation, or on the field of battle; then, and not till then, will opportunities of achieving triumphs in art, such as that under immediate consideration, be turned to account.

I suppose such a time arrived, and the architect legislating in this, his legitimate domain. He would preserve the statue of Charles I.—this being a work of high merit,—in memory, moreover, of a king, devoted to the cause of art. He would see in the *one* column to Nelson a mistake; all the circumstances of the case, the moral involved in the whole distribution of the square, demanding that there should be two columns, not one only. Having ever present to his mind the prowess of our army and navy, he conceives two graceful pillars, each commemorative of either branch of the service, and so designed as to be complimentary to our warriors, whilst challenging the admiration of other countries. It is in the province of art to achieve this. There was nothing of a boastful character in the monuments of Athens; and yet it has been well observed that "the Parthenon and the Propylæ may be considered as the trophies of 'Marathon' and 'Salamis,'—monuments of the past, and pledges of the future."

The military and naval columns our architect places on a line with the spot occupied by the present column, but at some distance apart, thus preserving an uninterrupted view of the distant scenery. The twin fountains he also suppresses, and places a flight of steps against and in the centre of the present dead wall, thus affording an agreeable and ready access to the roadway above. This area, then, he adorns with statues of some of England's bravest sons, making what may be considered as Trafalgar-square proper, breathe the very spirit of war. But, remembering that the object of war is peace, and being desirous of giving an artistic expression to this sacred maxim, he orders his design accordingly. Certain it is that the arts can only flourish in peaceful times,—that is in a state of security obtained through martial prowess—a nation to run the race of art must first have won its spurs,—these are the laurels gained on the battle-field. All things then considered, it seems desirable that the trophies of war should stand in juxta-position with the temple dedicated to the peaceful arts. With pain our architect surveys the front of the "National Gallery." His chief regret is, not that it must come down, but that it ever should have been put up; that the free and energetic English should have so signally failed to typify their character in art; that the spirit of the nineteenth century should have shown itself so incapable of estimating the meaning of a project for a "National Gallery," as to permit of so flimsy and undigested a design, and one consequently so unworthy of the cause and the nation, being erected.

That the stigma inflicted on the country by this architectural puerility should no longer exist, he levels the present building with the ground; and comprehending the nature of his mission, valuing the expectations of an enlightened community, he designs an edifice which, whilst it is made to combine all the requisites of a National Gallery, is rendered at the same time an object of striking beauty. To effect this, he forms a quadrangle in the rear of the present building, extending the whole width of the square. Three sides of this quadrangle he devotes to the national edifice; the south side, or that contiguous to Trafalgar-square, he encloses with a screen of columns, pierced with one or more arches; the further, or north side of the quadrangle, he adorns with a noble portico, backed by a dome of *wider dimensions* than the portico itself; in the centre of the quadrangle he displays a magnificent fountain.

Let us now view this architectural scene, taking our stand a little below King Charles's statue. The eye glances from this monument to the lofty pillars of war, then to the goodly company of heroes surrounding the latter; and darting on, pierces through the screen, and surveys with increased delight the gorgeous effect of the sun's rays, commingled with the spray of gushing waters; and led on by the converging wings of the distant building, dwells with rapture upon the captivating forms of the stately portico and ample dome. Having gratified ourselves with this view, let us enjoy the spectacle offered from the portico itself of our new "Gallery."

A scene of enchantment presents itself, heightened by the moving nature of the ideas associated with it. We look from the region of peace on to the seat of the legislature of this favoured empire: thus much for the moral of the scene. Let us now mark the artistic effect: how grateful to the sight is that well-designed fountain in the immediate foreground, with its foaming tide, imparting movement as well as colour to the graceful screen beyond. How stately those twin columns of war! rearing themselves on high from amidst trophies akin to them in character; like two noble chieftains to whom their followers devotedly look up. How well their vertical lines contrast and harmonise with the raking lines formed by "Northumberland House" on the one hand, and the dwellings on the other, amongst which Gandy's good design stands most conspicuous. How willingly does the sight linger upon the well-defined form of the statue beyond; then scans "Whitehall," gleaming in the distance; and finally rests on the lofty towers of the Palace of Westminster, and those of the venerable Abbey.

I will ask any candid traveller and lover of art whether he knows a city that presents two such points of view as those just realised to the mind's eye. Nay, I will appeal further, and ask whether, in the magnificent restorations of Athens and Rome by the "regius professor of architecture," there occur points of view surpassing these in architectural splendour and moral interest. Sad to think, how much that is unworthy must be undone before that which has been here hinted at can be contemplated as a fact: still sadder, to contrast the much done badly and the little well, with what might be honorably achieved with England's ample means: and this entirely owing to the want of appreciation of the subject, in the first instance, on the part of our rulers. Hence it is that we hail with pleasure the dawn of a happier period for art!

A. W. HAKEWILL.

DYKES.—A correspondent states that the first Dutch fort on the Scheldt has been completed by Mr. Winder, an English engineer, and that the same gentleman has just constructed an immense dyke in Zealand: the obstacles were great.

PUBLIC WORKS IN FRANCE.

THE readers of the *Builder* are aware that for some years past the work of repairing and restoring the ancient ecclesiastical edifices in France has been proceeding with considerable vigour and success. The funds for this purpose have been principally provided by the Government; but the administration of them, and the arrangements for carrying on the works, have varied from time to time with the rapid political changes of late years. From a report just presented to the emperor by M. Fortoul, the Minister of Public Instruction and Worship, the following appears to have been the course of procedure to the present time.

Previous to 1848, no fixed rule was adopted, either in the appointment of architects, or in the disbursements of the funds, and no general system of revision was organized. The authorities in each diocese acted without control, and no efficient check existed on the mode in which the funds were applied. Accordingly, it is stated in the report, that the buildings to which aid was given at that period "exhibit very faint traces of the intelligent application of the public funds. After the revolution of 1848, efforts were made to introduce system, economy, and well-digested superintendence into the diocesan works. A permanent commission was appointed to examine the future proposals for construction or restoration. The entire country was divided into thirty-two diocesan districts, each of which was placed under the charge of an experienced architect. Consultations were directed on the state of the various edifices. A system of finance was matured, and a code of instructions prepared. From this time, it is stated, the repair of the diocesan edifices began to assume a regular organization.

Subsequent experience has shewn, however, that this system had its defects and inconveniences. The local architects had been superseded in favour of the metropolitan ones, under the idea that a greater degree of unity would be obtained in the direction and superintendence of the great works of restoration. It was found in practice that many buildings which required only simple repairs were neglected, waiting for months, and even years, for the inspection of the "*architecte conservateur*." In many cases the travelling expenses were found to exceed the fees due to the architects, who were paid by commission.

To remedy this state of things, the minister has propounded a new system, which has been authorised by an "*arreté*" of the emperor, bearing date 7th March, 1853, to the following effect:—

1. The ordinary repairs of the diocesan edifices are to be under the direction of architects residing within the diocese, nominated by the Minister of Public Instruction and Worship, on the recommendation of the bishops and prefets.

2. Any extraordinary works of restoration and construction may be entrusted to architects residing out of the diocese, as shall be decided by the Minister of Public Instruction.

3. The plans and designs of the diocesan architects, whether for ordinary or extraordinary works, shall be submitted to the Board of Administration for Public Worship by the 1st of December in each year, accompanied by the observations thereon of the bishop and the prefet.

4. Three inspectors-general, to be nominated annually by the minister, shall be placed at the head of this department, with a salary of 6,000 francs each (240*l.*).

The present inspectors named by the minister are—M. Leonce Reynaut, engineer of roads and bridges, professor of architecture at the Polytechnic School; M. Vaudoyer, government architect; M. Viollet Leduc, ditto.

5. The inspectors-general shall visit, either periodically or by express commission, the diocesan buildings, the supervision of which is entrusted to them by the minister. They shall examine the state of the buildings, the suitability of the plans of the architects, the manner in which the works have been executed, the correctness of the accounts, and report thereon to the minister. Acting jointly as a committee under the presidency of the Director-General of Public Worship, they shall examine the proposals and designs submitted to them by the architects; they shall advise on all questions of art and construction which belong to the works; they shall direct the application of the funds; they shall present annually to the minister a general report on the condition of the diocesan build-

ings. The applications for aid from the communes on behalf of their churches, &c. are to be submitted to the committee of the inspectors-general.

6. The Commission of Arts and Religious Edifices instituted at the bureau of public instruction is in future to be divided into three sections; viz.—the section of architecture and sculpture; that of stained glass and religious ornaments; and that of organs and sacred music.

7. The three sections shall be combined under the presidency of the director-general to receive the annual report of the inspectors-general to the minister, and to annex such observations thereon as they may deem necessary.

8. The section of architecture and sculpture, of which the three inspectors-general shall necessarily form part, shall be charged, on the report of any of the inspectors, with the examination of all projects involving extraordinary works.

Whatever may be thought of the military centralization which is affected by our continental neighbours even in matters of art, few will be disposed to doubt that if some of the funds at the disposal of the Ecclesiastical Commissioners, to say nothing of the deans and chapters, were applied under the direction of "Inspectors-general" and a "Commission of Arts" to the repair and restoration of some of our noble cathedrals, the result might be something of an improvement on our present systematic neglect of a sacred duty. J. A. P.

THE ART-UNION OF LONDON.

THE two engravings to which each subscriber of the year will be entitled are now ready, namely, "The Surrender of Calais" (by Mr. Selous) and "Christ led to Crucifixion," ruled from a bas-relief. The first is fairly worth double the amount of the subscription, though, in addition to these, each subscriber will, of course, have, as usual, the chance of selecting for himself a painting or statue from the current exhibitions. The great merits of this picture were acknowledged by the whole of the periodical press when it was selected in competition by the council; and the engraver, Mr. Robinson, has executed his task with great ability, and has made from it a very fine engraving. He has done great mischief to the society, however, by the lengthened detention of the plate beyond the time stipulated. If the impressions had been ready for delivery at the time of subscribing, as the council had arranged should be the case, this print would, doubtless, have produced a large extra subscription. The subscription list, our advertising columns show, will be closed on *Thursday next*.

At the dinner of the Artists' Benevolent Fund, at the Freemasons' Tavern, on the 19th inst. in reply to the toast "Prosperity to the Art-Union of London," Mr. G. Godwin made a few observations, to which we desire to give circulation, with the hope of bringing in fresh subscribers to this institution. The speaker reminded the meeting of the singular progress of the Art-Union of London, and the part it had played in producing the present state of public opinion on art in this kingdom. When first established a subscription of 500*l.* could not be obtained; the second year brought 750*l.*; the third, 1,300*l.*; the fourth, 2,200*l.*; the fifth, 5,500*l.*; and the sixth, 13,000*l.*: the amount of subscriptions had culminated at 17,800*l.* and then subsided to a settled income of about 12,000*l.* a year. This, of course, had not been effected without the occurrence of many obstacles. It had been his lot to fight out the question, face to face, with two prime ministers, the late Sir Robert Peel and Lord John Russell; with Mr. Goulburn, Mr. Labouchere, and Lord Granville. If not convinced, these statesmen, at all events, adopted the views of the society, and, first, an Act of Parliament, and then a Royal Charter, had enabled the Council to pursue uninterruptedly what they believed to be a course of usefulness. Many were scarcely aware that the association had already spent at least 170,000*l.* for the encouragement of art and artists. The prize-holders had expended about 90,000*l.* in the purchase of pictures, the Council about 50,000*l.* on these and other works of art. For pictures purchased from the Royal Academy alone the sum of 34,291*l.* had been paid. Engravers had received 16,000*l.* Artists should remember this, and if they did not need buyers themselves, aid the association for the sake of those who did. It was unnecessary to talk of the attention now given to the fine arts in England by the majority compared with what was the case when the Art-Union was first established. There never had been so many lovers of art, there never had been so many picture-buyers in England as now; and he was satisfied, notwithstanding we had been recently called, abroad, "varnished barbarians" in matters of art, causes were in operation which would enable us, before long, to congratulate ourselves on the number of men who understood art. The great object of the Art-Union of London had been to popularise art, to imbue the people with love of art, and thus would artists best be encouraged. The speaker urged, in conclusion, the importance of establishing picture-galleries and museums in the provinces.

BURFORD'S PANORAMA OF GRANADA.

WITH Easter comes, as a matter of course, a new panorama at the "old original shop" in Leicester-square. Granada, the ancient city of the Moors, is this time the subject. Mr. J. Uwins and Lady Louisa Tenison supplied the sketches, Mr. Richard Ford lent costumes and advice, and, from these materials, Mr. Burford, assisted by Mr. H. C. Selous, has produced a very interesting and beautiful picture.

Granada stands in a luxuriant plain, and includes the fortress-palace of the Alhambra. The spectator is supposed to be in a prospect-tower built in the gardens of the Generalife, the ancient summer palace of the Moorish sovereigns. Standing thus in the gardens, the painters have been able to avail themselves of the trees as a prominent foreground for a part of the picture, which is often wanting in a panorama. The tall dark cypresses waving over the Generalife have poetry in them, and, with the pensive female figure seated in the balcony, suggest the sad story of the original owners.* The Moors became possessed of Granada in 715, and had dominion till 1492, when they were driven out and became extinct as a people. The Alhambra, which is included in the title of the panorama, scarcely displays its characteristics so prominently as some will expect: the nature of panorama painting prevented it. The palace of Charles V. the cathedral, and the Moorish fortifications form parts of a picture which may safely be called the most successful that has been produced here for some time past.

PROVINCIAL NEWS.

Bourn.—The plan and specification for a new bridge to be erected here have been prepared, and advertisements for tenders are shortly to be issued.

Stanton-upon-Hineheath (*Shropshire*). — The tower of the church of this place was fired on Saturday week by an overheated flue connected with a stove in the vestry. The belfry flooring was completely burnt away and the bells were spoiled.

Devizes. — Proceedings have been taken towards the erection of a new corn-exchange here.

Upton (*Chester*).—The ceremony of laying the corner-stone of a new church to be erected at Upton, a rural district in the parish of St. Mary, Chester, took place on Thursday in last week, in presence of a numerous gathering of all classes of society, from the Marquis of Westminster (patron of the parish) and the Bishop of Chester downwards. The building is of stone, in the Decorated style of architecture. The nave is 53 feet by 24 feet; the chancel 30 feet by 20 feet. There is an organ-recess and vestry off the chancel. The tower at the west end is open to the church. There will be sittings for 300 persons. The walls will be finished internally with dressed stone. The spire will be 93 feet high.

Hereford. — The Archdeacon of Hereford having been desired by the bishop to make a careful examination of the state of the tower and spire of All Saints Church, recommends, on inspection, that some professional architect of acknowledged eminence and reputation be employed to give advice as to whether the present structure should be taken down and rebuilt or merely repaired. Alterations were in contemplation, it appears, which involved the taking down and rebuilding of the north wall of the church and the refitting of the whole of it. The dean reports as to the tower and spire, that the battlements of the former are so dilapidated as to require immediate attention, and that the fissures and rents in the walls, the falling of the arches in the windows, the looseness of the mortar, which crumbles and falls on being touched, and the total loss of perpendicularity, are alarming symptoms. On the other hand, none of the fissures or rents are apparently very recent, the walls are of unusual solidity, and the declension of the spire does not appear to have increased in late years.

Cardiff.—A correspondent says,—"The unsightly bench ends in St. John's Church, of which you made mention (Vol. x. p. 7), have been transformed into poppy-heads, by Mr. Jones, who had some specimens of wood-carving in the Exhibition of 1851. From the form of the original ends, the proportion is far from good, although it may be said that the best has been made of a bad job. Some of the foliage is gracefully executed."

Rhyl (*North Wales*).—The drainage works of this watering-place are just commencing, and are expected to be brought to a completion in the course of six or seven months. The most important feature, and that which forms the greatest expense, is the construction of a brick sewer of upwards of three quarters of a mile long, to convey the sewage from the town into the river Clwyd, about 100 yards above its entrance into the Irish Sea. This has been contracted for by Messrs. Beattie and Hughes, of Liverpool, for 1,497*l.* Mr. John Myatt, of Congleton, is the engineer of the works.

Birmingham.—The foundation-stone of a new Wesleyan Chapel, about to be erected at the corner of Benacre-street, Bristol-road, was to be laid on Monday last. The work, it appears, has long been in contemplation. The style of the chapel will be Gothic. A commodious school will be added. The estimated cost is 4,000*l.* of which sum not more than half has been at present raised.

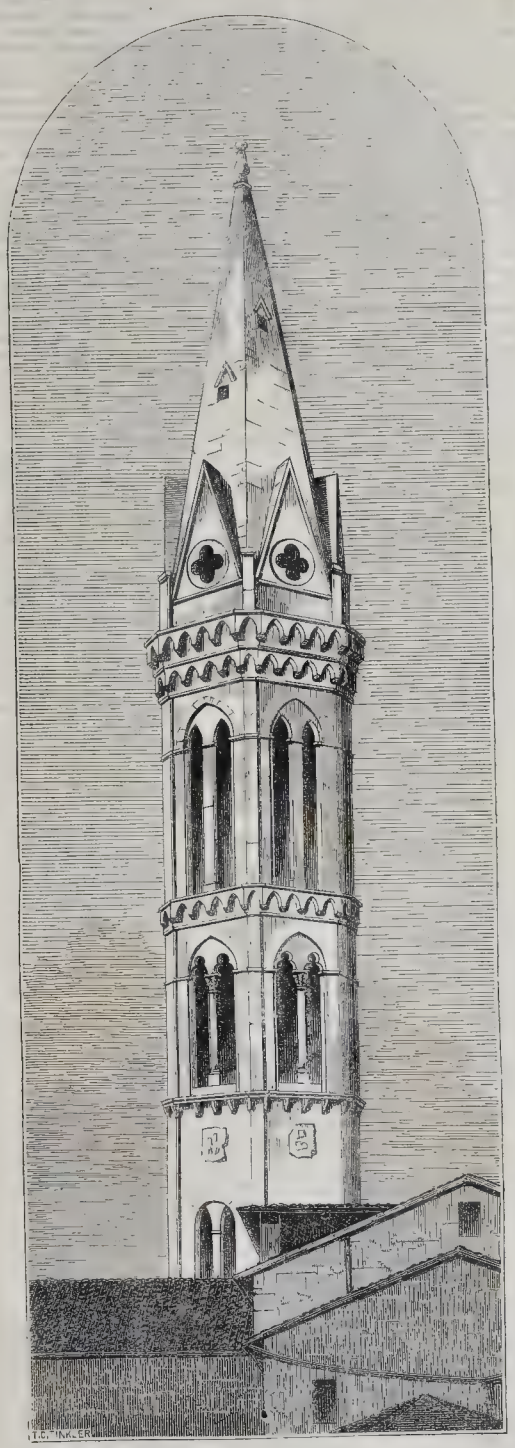
Coventry.—At a recent meeting of the inhabitants of this city it was resolved to recommend the corporation to erect a corn-exchange, with accommodation for musical and other entertainments.

Over Darwen.—We are sorry, says the *Blackburn Standard*, to perceive that the architectural beauty of the steeple of Holy Trinity Church, Over Darwen, has been sadly disfigured during the past week by placing a galvanised pipe connected with the two stoves in the church in a very prominent position outside, to its extreme height; which might easily have been avoided had the opinion of a scientific man been taken on the subject. We trust steps will be immediately taken to remove the unsightly projection.

Barnsley.—It is proposed to build a church to be dedicated to St. John, and capable of holding 700 persons; also to erect a parsonage house: the cost of the former cannot be less than 2,000*l.* that of the latter 550*l.*—in all, 2,550*l.* a sum which it is said to be impossible to raise in the district.

Stirling.—The *Falkirk Herald* describes the design of the new academy to be erected here as that of a quadrangle composed of a series of buildings in the Elizabethan style of architecture. The entrance to the playground, which is in the centre of the quadrangle, is ornamented by a steeple, surmounted by a vane. The estimated cost of the building is 5,000*l.* Of this amount 1,000*l.* are the gift of Lieut.-col. Tovey Tennent, who was educated in Stirling, and presented that sum to the magistrates and town-council for the erection of an Educational Institution. 100*l.* have also been presented by the Commercial Bank of Scotland, and the remainder of the sum it is proposed to raise by subscription. As a site, the council have agreed to set aside the present flesh market, Cowane's-yard, and the schools there with the playground attached to them. The work of raising subscriptions is being prosecuted with vigour.

* A view of the Arcade in the Generalife will be found in our 10th vol. p. 89.



TOWER OF LA BADIA, FLORENCE.

LA BADIA, FLORENCE.

This church, the tower or campanile of which is illustrated, is situated near the Bargello, in the Via dei Librai. It has no architectural feature particularly remarkable internally, though it numbers amongst its relics and antiquities the following:—a bas-relief of the Virgin and Child, by Mino da Fiesole; a tomb by the same artist (considered one of his finest works); and also that of Hugh, Marquis of Tuscany, the founder of the Badia, who lived in the eleventh century. The memorial itself, however, was not erected until 1481. Above the orchestra is the Assumption, by Vasari. The church itself—at least the greater portion—is said to have been erected by Segaloni in 1625, while there are some remains of the first structure, dating from the thirteenth century, by Arnolfo. The plan at present is a Greek cross.

It is hardly necessary to comment on the campanile. It is a most pleasing object from every point of view; and if it was even placed amongst some of our modern mediæval works, it would prove that it is not so much the adherence to dates which produces elegance in architecture as the due study of proportion and outline.*

T. C. T.

DEFRIES'S LECTURE ON GAS.

Mr. N. Defries, the gas engineer, delivered a lecture lately on the manufacture and use of coal gas, at the Athenæum Literary Institution, Camberwell, to a large and attentive audience. The lecturer began by pointing out and refuting some erroneous notions as to the positively dangerous nature of gas. The assurance companies, he observed, had never, that he could ascertain, rated the use of gas as hazardous, and there could be no more striking proof than this of its safety under ordinary management (under just such management, he might have added, as that of ordinary prudence in the use of the household fire,—like it a most useful servant, but certainly a dangerous enough master). The lecturer exhibited and strongly recommended the use of Leslie's burner, and his apportioned glasses (long since also recommended in our columns), in place of any with a glass of unarranged length, which diminished the brilliancy of the light, and increased the quantity consumed.

The burner he was then exhibiting would, with an appropriate glass, produce a quantity of light equal to fourteen standard candles; and the cost, they would hardly credit, was 0½d. per hour. Many a capital thing had slumbered in obscurity, or had never been turned to a proper account by the want of instruction on the one hand, or indifferent application on the other. Let them witness this striking proof. The burner he was then exhibiting, with a short glass upon it, gave, as he said before, for 0½d. per hour, the light of fourteen standard candles. But let him change the glass, and put on one much longer, they would see the quality of the light comparatively destroyed, and would find that, to obtain the general amount of illumination that had been produced by the short glass, they would have to turn the gas on considerably higher, and even then in a most unsatisfactory way.

Though prejudices still existed against gas, the lecturer said he did not desire to create the impression that it was in consequence but little used. Gas was, in fact, in extensive use. It cheered every street in the metropolis, and where was the shop of any importance to be found without it? It had been introduced into thousands of private dwellings, and it was computed that the United Kingdom alone had nearly a thousand gasworks, of all sizes and characters; but this was not enough. What he wanted to see was this. Where gas was not burned at all he wished to see it at once introduced; and where it was used in shops only, he wished to see it carried to every room throughout the house. Its use was spreading fast throughout the continent. Works were erected in many of the colonies; and even Rome—that city of exclusiveness and lovely moonlight nights—had lately given her testimony to the immense value of gas lighting, by employing an

* The Tower of S. Francesco *della Vigna* (p. 149) was misprinted *della Viqua*.

English company to illuminate her streets. Scotland was the place for gas lighting; the "cannie folk" considered it as a necessary of life, and a tallow-chandler's shop in the North was a rarity. Of course, gas lighting had many difficulties to contend with. For his own part, he wished the gas companies would consult their own interests a little more, and strain every nerve to produce good gas as well as cheap gas. The quality of the metropolitan gas was certainly much improved of late, but there were two or three London companies, whose names, for obvious reasons, he would not mention, who seemed to think more of the quantity of coke they produced than the quality of the gas they manufactured.

As to meters, everybody knew that there was a water meter and a dry meter. The water meter, when in action, had to be charged with water, and the great point in the matter was, that if there was too much or too little water in it, the registration would be powerfully affected, in one case registering against the consumer, and in another against the company. Gas, too, had the quality of taking up any fluid in its passage, and carried the water from the meter into the fitting, causing extensive corrosion. Another great difficulty with the water meter was, the liability of having the light unsteady at all times, and in winter to have the water frozen, and the light suddenly extinguished. He did not speak to disparage a competing instrument, but these bare naked facts were known to all the gas world. The dry meter was altogether a different nstrument. That before them was his own invention, and, unlike the water meter, required no agent but the gas itself, which, on passing through the meter, set the machinery in motion, and registered the quantity consumed.

The lecturer exhibited a model for melting glue, wax, tallow, &c. by means of a small gas-burner. The advantage of this was that no fear of fire need be apprehended; in fact, gas might be used for thousands of purposes of which they at present formed no idea. The gas-bath, invented by the lecturer, was exhibited, and the process explained, by which, at the cost of 1½d. nearly 50 gallons of water could be heated in five minutes to 100 degrees.

The Over Darwen Gas Company have recently declared a dividend of 9 per cent.——The proprietor of the gas-works at Ross has lately offered to reduce the price of gas there from 8s. to 6s. a thousand cubic feet, if the public lamps pay at same rate. The price had previously been 14s.——We are informed that a Mr. Bower, of Saint Neots, Hunts, has invented and patented some improvements in the manufacture of gas—by which small works may be erected to supply twenty lights and a gas cooking-stove for 50*l.*; that the gas is exceedingly pure, and coals being at 15s. per ton, that it does not cost, on this small scale, more than 2s. to 2s. 6d. per 1,000 cubic feet; and that the cost, therefore, of twenty lights, burning four hours per night, would only be 8d. The spare heat may also be applied to heat a green-house, or to generate steam, so as to warm the dwelling or drive a one-horse engine; and the retort when worn out may be replaced without disturbing the brickwork. The whole, our informant adds, is so simple that any boy about the place may manage the works. If such be the fact, we may expect to see many a private house, where gas is unobtainable from a public company, lighted up by such an apparatus.

Sea-Sand for Mortar.—If any of your scientific readers would point out some means of preparing sea-sand so as to render it fit for use in the composition of mortar, &c.; or a method of dressing the walls after plastering, so as effectually to prevent the destruction of the paper by the damp and salt crystals given off from them, a great boon would be conferred, amongst many others, on your correspondent. Painting on the outside, and gutta percha on the inside, have been tried, but without avail.—A Sea-Sider.

*** The evils of sea-sand have been treated of in our earlier volumes. Repeated washings with fresh water, and bleachings, are said to be successful in fitting the sand for use: but we do not think it a very safe experiment.

THE FIRE AT WINDSOR CASTLE.

FLUES.

While the public were reading in our columns a note of warning against defective flues (a note we have sounded again and again), another evidence of its necessity was being given in Windsor Castle, where a fire, with a flue for a cause (according to all belief), broke out in the room above the Gothic Dining-room, in the Prince of Wales's Tower, and did much damage. It had smouldered some days; had it not shown itself till the middle of the night, such was the volume of smoke generated, and so great the difficulty of getting to the window, that several of the occupants must have lost their lives. As our correspondent of last week said, "Wherever there is a flue, fire may be hatching without any symptoms of it to create alarm." The greatest care is, therefore, necessary. The *Times*, commenting on our almost prophetic note, and on the mode of forming flues, observes,—"We must start with the understanding that the apparatus will certainly be tried before long to the very utmost, and that therefore itought to be adapted to such a trial. Let it be clearly made out that the flues can be swept; that a casual fault in the work will not communicate the fire to cavities out of one's reach; that if the walls of the flues become red hot, as they will always be liable to do, they will not ignite a beam or some other lighter woodwork. Let the arrangements be such that if the whole apparatus should become one river of fire—as it may any day, especially when the flues are horizontal—it will be with perfect safety to the rest of the building. There can be no doubt that adequate precautions are perfectly within our power, inasmuch as firemen and architects have never the least difficulty in telling how a fire has happened, and where the fault lay—when with the builder, and when with the lighter of the fires. Whatever has evidently caused one conflagration as evidently will cause another, and had better be avoided beforehand, instead of being censured afterwards."

THE IRON TRADE.

Severe depression is now the characteristic of the pig-iron market. "We are at last," says the Glasgow trade correspondent of the *Manchester Courier*, "feeling most acutely the consequences of the rash and illegitimate business which has for some time past forced the value of this article far above its proper level. The speculative strength has been exhausted for the moment, and the trade is left to its own resources. It would have been better for all concerned had such been permitted earlier, since, in place of a low price and general feeling of distrust, confidence might now have ruled, and the value been maintained at a remunerative point. There seems little prospect of an immediate reaction, or of arresting the downward movement. Store-keepers' warrants are a drug, and can only be quoted nominally at 5*s*. 9*d*. Shipping lots are somewhat better inquired for, and command about 5*l*s. 6*d*. for mixed numbers, f. o. b. here."

Pigs, the material of bars, having thus passed their high-price climax and rapidly retrograded, bars, sheets, and plates begin themselves also to decline in price, particularly bars; and the fall will now be facilitated by an increase in the supply of coal, so that the very cause which, by its former scarcity, helped to enhance the price while it was rising, will now, by pouring in and falling in price, itself precipitate the downfall. The scarcity of copper and tin, which were kept back by speculators for the rise till extensive works at Birmingham were on the very eve of a speedy suspension, is now being superseded by a ready supply of both, though at still recklessly and ruinously high prices, namely, 140*l*. a ton for copper, and 128*l*. a cwt. for tin. Rapid reaction here, too, is looked for. The trade, therefore, is very unsettled. A new copper-mine is about to be opened near Leek, in Staffordshire.

The cut nail business is in an unsettled state. The make, in consequence of the facility of manufacture afforded by machinery, is apparently beyond the demand, and the present high price of iron, as a matter of necessity, operates restrictively. One cut nail manufacturer has in stock 300 tons of iron and eighty tons of nails; and instead of, as formerly, executing orders for nails to the amount of 1,400*l*. weekly, his business returns do not amount to 100*l*.

A *zinc* sloop, the first vessel of that metal in Europe, has just been built at Nantes: she draws but little water, and is called the *Compt Lehon*, after one of the directors of the Vieille Montagne Company. Iron is used to a certain extent in the construction of this vessel, and the deck and upper works are of wood.

ERICSSON'S CALORIC ENGINE.

Attention being very naturally directed to this new "motor" (or motive power), as this principle has been designated; and as you have very properly apprised the public, in your number 524, for 19th February, that Captain Ericsson first tried the caloric principle in this country some twenty years ago,—permit me to correct some little inaccuracy as to the locality where it was tried, which was not "Laird's boiler-yard," Liverpool.

The engine was constructed by myself and set to work at a branch of my establishment at the Regent's-park Basin, where it continued to work very successfully, so far as the development of the principle was concerned; and was witnessed by thousands,—by many, if not all, of our scientific men,—and would have continued, but the difficulty we had then to encounter was that which I fear may prevent the practically carrying out, to a successful issue, of the present engines constructed for the caloric ship, now experimentalising in America,—namely, the dry heated air, at a temperature of 500 degrees Fahrenheit, without the means of *lubrication*, unless some ingredient other than water or oil has been discovered, but which I do not gather from the various reports we have seen in circulation, and which at present, I submit, appears to be the only drawback in carrying out the principle to perfection.

I need not observe, to one like you, who understands these matters perhaps better than myself, that the mode or manner of carrying into effect the present caloric-engine operations is the best, as before observed by the American correspondent of the *Times*; but *this will not affect the principle:* for instance, the application of the heating furnace to the bottom of the cylinders (as in the case of the hot-air engine constructed by Stirling), does not appear to me "a move in the right direction."

I cannot understand why Capt. Ericsson should have departed from the method adopted in the engine which I constructed in the year 1833 (*vide Mechanics' Magazine*, p. 81, No. 535), where the heating necessary to compensate for loss by leakage and radiation is carried on apart, and is not likely to interfere with the working cylinders, applied as it now is only at their lower end.

To Capt. Ericsson belongs, as you fairly state, "the credit of a discriminating compiler," and he has laboured hard in the cause to my knowledge, by endeavouring to carry out this beautiful principle of the expansion of air by heat, and the economy resulting by using the heat over and over again, and I have but little doubt he or some more fortunate discriminator will eventually succeed.

Allow me to observe, in conclusion, that no less merit was due to the late celebrated Watt, when, with his great discriminating and powerful mind, he applied the condenser to the steam-engine, by which the world, and this country in particular, have been so immensely benefited.

John Braithwaite.

York School of Art.—The annual meeting of the York Government School of Ornamental Art was held on the 15th inst. The Rev. Wm. Hey, M.A. principal of St. Peter's Collegiate School, presided. A selection from the works of the students was exhibited, and the annual report was read, by which it appeared that the actual working state of the school is highly satisfactory. Under the present master the average number of students and the amount of fees have been increased by nearly one-half; the monthly average of students registered in 1851 being 73, and in 1852, 108; and the amount of fees being respectively 68*l*. and 95*l*. The report further states that the amount of subscriptions is reduced, and that the entire receipts are inadequate to the necessities of the school.

TO MAKE CASTS OF SCULPTURES IN LOW RELIEF, INSCRIPTIONS, &c.

THE method of making rubbings by placing wetted paper over sculptures and inscriptions is well known. The extreme lightness of these *fac similes* makes them available for the pedestrian, student, &c. Still, from these no casts can be taken. M. Aimé Rochas, of Paris, has proposed the following method for obviating this want:—While the paper adheres yet to the original sculpture or inscription, and while its *exterior* surface begins to dry, a layer of paste is placed thereon, either with a sponge or brush. The paste is to be made of cold water, putting two or three handfuls of grain flour to one *litre* of that fluid. When the paste has been put on, the specimen is left to become perfectly dry, and also when taken off, is to be kept in that state. If casts are to be made of such pasted rubbings, another procedure is to be resorted to for making the paper impervious to the fluid contained in the plaster of Paris. For this end some oily or resinous substance is to be used, of which the following is a good example. Two parts of common incens (resin), are solved in ten parts of tallow, and the *interior* of the rubbing is painted with it, after it has been placed horizontally on a table. The solution is to be used very hot, because then only it will penetrate both the paste and the paper; and it is only by a thorough soaking that the rubbing can be made water-tight. If, however, too much of the preparation be used, the slighter parts of sculpture or writing become filled up, which is to be avoided. For making casts from a rubbing thus prepared, a table, furnished with a rim, is strewed over uniformly with fine, dry sand, on which the exterior side of the rubbing is placed, and then impressed on the sand by gentle touches of the flat hand. Then a rim is made round the model, which is painted over internally with oil, and the plaster of Paris poured in, which can be made of any thickness wished for.

BRAMPFORDSPEKE CHURCH.

THIS church, with the exception of the tower, has been rebuilt, of the same dimensions as the original structure, with the addition of a new north aisle. In the Cowley Chapel, which forms a south transept, there is a canopied tomb of the fourteenth century, and several other interesting features, which have been preserved in the restoration. The principal dimensions of the church are as follow:—

The nave, 40 feet by 15; chancel, 18 feet by 14; the Cowley Chapel, 18 feet by 14; the north aisle, 40 feet by 12. A new vestry has been added on the north side of the chancel, and a porch on the south side of the nave.

The church will afford accommodation for 150 persons in open benches. The timbers of the roofs and the seats are of deal, stained. The chancel is paved with Minton's encaustic tiles: the portion *west* of the communion railing is the gift of the bishop of the diocese, to whom the chancel belongs. The paving within the communion railing was most liberally presented by Mr. Minton, the well-known manufacturer of encaustic tiles. Powell's quarries have been introduced in some of the windows, and a memorial window to the Lords of Cowleyh has been put in the south side of the Cowley Chapel by Baillie, of London, and was presented by the vicar, the Rev. G. E. Gorham.

The restorations have been carried out in the early Decorated style, at a cost of about 1,500*l.* 1,000*l.* of which were bequeathed by will by the late Miss Tucker, of Brampfordspeke, for the repair and improvement of the parish church.

The works have been executed by Mr. Mason, builder, of Exeter; under the superintendence of Mr. L. G. Butcher, architect.

ARCHITECTURE IN BRIGHTON.—A correspondent says, a lecture was delivered on the 15th inst. by Mr. F. Drake, at the Royal Albion Scientific Institution, Brighton, on "The History and Principles of Architecture." The library there, at present without a single treatise on this important part of the fine arts, is to be directly supplied with some standard works on architecture, thanks to the influence of the lecture.

WISBECH PUBLIC HALL EXHIBITION.

THE Wisbech Exhibition of Paintings and Antiquities was opened on the 1st ult. The proceeds will be appropriated to the liquidation of a debt upon the building.

Entering from the street on the left hand is the pay room, on the right the smallest of the three exhibition rooms,—the largest of which, or the hall, is immediately opposite the entrance.

The pictures are hung round the walls, inclined to the spectator, and behind is drapery of red cloth. Immediately under them are tables, on which are arranged cases of British and foreign insects, cases of shells, of minerals, and autographs, and wax flowers, &c. In the alcove which contains the platform for speakers are some specimens of wood-carving, by Mr. Rattee, who also exhibits a font cover. In the centre of the room is a fountain with a *limited* supply of water.

Upon one screen are twenty-five paintings by Mr. T. Baines, representing scenes in South Africa.

Amongst the pictures, "The Culprit Detected," by Mr. Cruikshank, "The Tomb-scene from Romeo and Juliet," "The Adoration of the Shepherds," "Portrait of an Artist by Velasquez," and a copy of Raffaelle's "Virgin and Child," several water-colour drawings by Pyne, and several oil-paintings by Jerome, may be noticed. In the Lecture-room, which is on the first floor, are engravings, specimens of needlework, philosophical instruments, and many articles exhibited by tradesmen in the town.

The whole collection is under the care of four curators. The mayor is chairman of the committee. About 450 three-shilling season-tickets have been sold, and between 50 and 100 five-shilling tickets.

SCAMPING WORK.

CAUTION TO BRICKLAYERS AND OTHERS SUB-CONTRACTING.

IN the Marylebone County Court lately a bricklayer named Wheelbro sued Mr. Hunt, a builder, for 4*l.* 2*s.* under circumstances of some interest, in the present extensive system of sub-contracting; and the evidence of the surveyors engaged by each party illustrated the cause by which the opinions of surveyors are daily becoming of less value and importance; and, *en passant*, it may not be amiss here to observe that if surveyors continue their partisanship when called in to speak to the value of work and workmanship of buildings, the day is not far distant when Courts of Law will dispense with surveyors' testimony altogether.

In answer to the questions of Mr. George Keene, the plaintiff stated that he contracted with the defendant to do the brickwork of new houses at 1*l.* 14*s.* per rod. In consequence of defendant not paying him in proportion to the work done, he gave up the contract.

By Mr. Herring.—The work was done in a proper style, and was not crooked. Defendant said the work had been scamped. Will swear that the walls were perpendicular. Defendant did not complain of the walls not being perpendicular until after he (plaintiff) refused to go on without money to pay his men. Had done brickwork at houses which fell down. Houses are liable to get out of the perpendicular. Does not believe that a brick has been altered of his laying. The district surveyor has passed the work.

Mr. Goddard, surveyor, said he had examined the work, which was done in *a workmanlike* manner. The materials were of the *worst* kind. The bricks were the coarsest and cheapest that could possibly be used, and with such inferior materials he considered the work to be very well done indeed. It was not out of the perpendicular more than the generality of new buildings, and less than might have been expected from the rough materials the plaintiff had to work up.

By Mr. Herring.—I have been a surveyor thirty years. Did not plumb the walls. Cannot say if they are an inch or more out of the upright. Does not know if a screw-jack had been applied to the front wall to make it perpendicular. Was engaged half-an-hour in the survey.

Mr. Herring said this was a case which his client felt it to be not only to his own interest, but a duty he owed to the building-trade, to defend. The system of sub-contracting had of late altered the relative position of operatives and masters; and where masters formerly discharged men who did their work improperly, the only redress now left them was to refuse to pay for work badly executed by these middlemen. Mr. Herring called the defendant, who stated that he had been in business as a builder, eighteen years, and had erected a great number of houses. He repeatedly complained about the work, and asked the plaintiff why he did not make use of the plumb rule, who answered that he could work as well with the eye as with the plumb. After he discharged the plaintiff,—for it was not true that he left of his own accord,—he found it necessary to take out some of the arches and turning pieces. Some of the work was so bad that he was afraid to take out the arches lest the whole should fall in. None of plaintiff's work was upright, level, or in a straght line. Had paid plaintiff considerably more than the work he had done was worth. It will now cost 7*l.* or 8*l.* to make plaintiff's work sound. Had to use a screwjack to get the front wall upright, which would have fallen down without its being placed perpendicular by the jack.

Mr. Wilson said he had surveyed the work, and as a surveyor he certainly would not have passed the plaintiff's work. It was neither upright nor level. The upper part of the brickwork, which was done by some one else, is done better. In fact, the mildest term he could use was to declare the plaintiff's work to be most *horridly scamped*. The failure was not at all attributable to the materials, which were ordinarily good.

Mr. Gardiner said he took the contract after plaintiff left it, and he found great difficulty in finishing it. It was dangerous to work on plaintiff's brickwork. By Mr. Keene.—The work of plaintiff's is still standing, but it will not many years.

Mr. Keene contended that if the defendant knew that the work was improperly executed, it was a duty he owed to the poor men engaged on the building to see their lives were not endangered by crooked walls; and if his testimony were to be credited the sooner Mr. Hunt retired from building unsafe houses the better it would be for the public safety; and it said but little for the utility of district surveyors if the house was in the state represented, by thus certifying it to be safe and tenantable. He urged that the work done was properly executed, and that the opinion of Mr. Goddard was strengthened by the district surveyor's allowing the houses to be passed.

The Judge said the question was, whether the work done was improperly or well executed, and beneficial to the amount claimed. He thought it was not, although the testimony of the two surveyors was too conflicting for him to be assisted by their opinion. With respect to the district surveyor's passing the work, there was no evidence in proof of the statement. Under the circumstances, he thought Mr. Wilson's survey, supported by the other evidence, to be deserving of some attention, and, with this view, he considered that the plaintiff was not entitled to anything, on the ground of his bad work not being beneficial to his employer. Verdict for defendant, with costs.

DISCOUNT UPON PIPES.

BROMPTON COUNTY COURT.—In *Stiff* v. *Stredder* the plaintiff, a manufacturer of drain-pipes, sought to recover 6*l.* 14*s.* of defendant, a builder at Kensington. A curious feature arose in the case as to the custom of allowing discount upon goods which were not paid for on delivery, or one order upon another. The defendant admitted owing 3*l.* 10*s.* and the delivery of the pipes to the value of the amount sued for was not denied.

The plaintiff's traveller stated that the agreement with defendant was to pay for one order under the other. The defendant had not done so. It was not their custom to allow discount until the goods were paid for. Their discount ranged from 25 to 40 per cent. and they never allowed 45 per cent. This discount was not allowed when credit was given.

The defendant's answer to this was, that his agreement with plaintiff was to have 45 per cent. discount taken off; and that he left a cheque for 3*l.* 10*s.* with his clerk, but plaintiff refused to take that amount, their dispute at the time being, that they never allowed but 40 per cent. They had now disallowed anything. He considered that the 3*l.* 10*s.* he offered was sufficient to answer the suit.

His Honour said, he considered, as defendant had not paid at the time of agreement, the plaintiffs were entitled to the full amount. Verdict for the plaintiff, with costs.

STONESFIELD SLATE QUARRIES, CHARLBURY.—The setting in of the late frost was hailed here by joyous merry-makings and ringing of bells. The livelihood of those who work in the quarries at Stonesfield depends on the advent of frost, which is essential to the splitting of the slates quarried from the ancient workings with which both sides of the valley here are completely honeycombed. The mode of working is by drawing horizontal galleries, about six feet high, into the side of the hill, and then extracting the two strata of pendle, laterally piling up the refuse masses of the intermediate bed of *race* so as to support the roof: deep perpendicular shafts communicate with these galleries. In this geological formation an immense animal, approaching in its dentition and character to the Moniter, occurs: specimens have been found which must have belonged to an animal 40 feet long and 12 feet high.



A CLERKENWELL EXTERIOR.

THE HOMES OF THE LONDON POOR.

WE must remove an impression entertained by two or three correspondents,—that we seek, in our papers on the dwellings of the London poor, to awaken sympathy in behalf of individuals, to be expressed by pecuniary assistance to them. So far from this being the case, we must decline taking part in any such step. Our object, it must be evident to all who will give it any consideration, is permanent improvement and general amelioration. We would show the great want there is of decent accommodation for the poorer classes, the miserable state in which thousands are lodged, the degrading and demoralizing effect of this upon the character; and then point to the fact that this accommodation may be provided for them and a fair return be obtained for the money laid out in effecting it, to say nothing of the sums which would be saved to the community by the diminution of crime, disease, and death (not confined, let it be remembered, to the locality of the originating hovels), to which such improvements would unquestionably lead. The attention which these papers have already excited, encourages us to proceed, and makes us hopeful as to their effect. Returning for a moment to Clerkenwell,—"Nigh," as Garth wrote,—

> "Nigh where Fleet Ditch descends in sable streams,
> To wash his sooty Naiads in the Thames,"

or, as Pope described it in nearly the same words,—

> "To where Fleet Ditch, with disemboguing streams,
> Rolls its large tribute of dead dogs to Thames,"—

we give an exterior view of the upper part of the dirty ruin which contains the room illustrated in the previous paper.* The pencil, in such a case as this, is a more powerful exponent than the pen.

It was about two in the morning when we next wended our way to the valley of the Fleet, to visit some of the lodging-houses in that neighbourhood, starting from the police-station in Smithfield, where the suspended handcuffs of various sizes recall a time when these were more needed here than they are now. For many years, in early days, Smithfield was called "Ruffian's Hall;" by reason, "it was the usual place of frayes and common fighting during the time that sword and bucklers were in use." In the still night you may see, with the mind's eye, Rahere exhorting the people to aid him in building the Priory of St. Bartholomew: to this succeeds jousts and tournaments, with brave knights, fair ladies, and a vast deal of ruffianism: here Wallace was executed, and Wat Tyler slain, and there, opposite to the entrance to the old church (the moon is just now touching with bright light the dog-tooth moulding in the entrance arch amidst modern houses),

> "Christians have burnt each other, quite persuaded
> That all the apostles would have done as they did."

A heap of rough blackened stones and ashes remain, underground, to mark the spot.

London is dead asleep at this time; there are few persons abroad excepting a few roisterers around the bright fires of the street coffee-stalls, but at short intervals we stumble on the quiet guardians of the City, and are reminded that, while all seems at rest, the spirit of law watches and protects. It is not market morning at Smithfield, or there would be more bustle in Cheapside and other important parts of the City, which in the daytime overflow with passengers and carriages; our boots ring with a hollow sound upon the pavement, and have an echo. The air seems denser as we approach the ditch, though it may be fancy; and it is now that bad airs become worse, and the human frame is less able to resist injurious influences.

As our business is not with the *élite* of society, we progress towards what remains of Field-lane. In St. John's-court, West-street, Fox and Knott-court, and others, there are still some common lodging-houses; but these seem to be completely under the *surveillance* of the police, and in no instance that we saw were occupied by more than the number of lodgers allowed by the regulations. Some had been cleaned recently, and otherwise improved. There are many abominations, nevertheless, in Fox and Knott-court: if you need proof, open that door at the bottom of it, but shut it again quickly, and let us go.

The back parts of many of these premises are exceedingly filthy. At the end of the new street is the *City Hospice*, where several persons, male and female, are lodged in apartments separately arranged and well ventilated. A visit to this place would be interesting to those inquiring into the important subject of improving the dwellings of the poor, although we are not prepared to recommend the system pursued here. One good feature of this institution is the establishment of washing-places, &c. which can be used by any one (free) at any hour of the day. Adjoining this is the Field-lane Ragged School, under the patronage of the Earl of Shaftesbury. In this place we found about 163 lads and young men asleep: this is a curious sight; the room is lighted with gas, and the floor is divided by planks about a foot high, into compartments a little larger than the body of a man. In nearly all of these was a lodger, covered with a rug, most of whom, if we may judge from the loud snoring, were sound asleep. Those who attend the school may sleep without payment; and nearly all this sleeping assembly are without visible means of obtaining a living,—many of them are known thieves. At the end of Field-lane, the houses are occupied for doubtful purposes: in one we found a witch-like figure still waiting for business. What that business was we need not inquire. The house was a dilapidated and unwholesome den. In Field-lane there are several lodging-houses which have the ground-floor fitted up as kitchens or coffee-shops: large coke fires were burning in these. On the seats, on the tables of the first we looked into, under the tables, and strewed about the floor, in some instances partly lying over each other, like eels in a dish, were men of various ages. In a back room, partly divided by a partition, was another fire with more lodgers, some of whom, at that late hour, had but just arrived, and were cooking their supper. There could not have been less than twenty lodgers in these apartments, who pay 3d. each for the privilege of stopping here; for sleeping in the beds upstairs 4d. a night is charged for each lodger. These houses have four rooms upstairs, many of them six. Allowing four persons in each room, and only four rooms in each house, we have

	£	s.	d.
Sixteen lodgers, at 4d. per night (7 nights)	1	17	4
Twenty ditto at 3d. per ditto.....	1	15	0
	£3	12	4

Per annum if always full... £188 1 4

This would be the night-work only; but most of their lodgers are the receivers and assistants of thieves, and no doubt many sleep during the day in order to be prepared for night-excursions, and by this means the profit of the lodging-house keeper is enhanced. We went into five of these houses, and found them all full,—of misery and vice.

Leaving Field-lane and crossing Holborn into Shoe-lane, opposite the wall of St. Andrew's Churchyard, is the entrance to Plumtree-court, which has long been the haunt of fever: this court extends a considerable distance towards

* See page 161.

THE HOMES OF THE LONDON POOR.



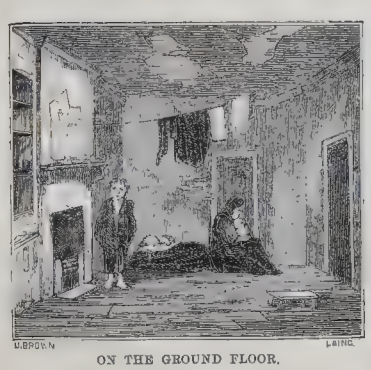
THE FRONT ATTIC.



ON THE TWO-PAIR FLOOR.



ON THE ONE-PAIR FLOOR.



ON THE GROUND FLOOR.

THE FRONT ROOMS OF A HOUSE IN CHARLOTTE'S-BUILDINGS, GRAY'S-INN-LANE.

Farringdon-street, when it goes off at right angles to Holborn; the court is very narrow, and the drainage very imperfect. A sink at the bottom of this pestilent place receives the greater part of the refuse of the place; it is often stopped, and then a pool of considerable extent is formed. Pulling the latch of the outer door of one of the houses here, and then entering, with the assent of its occupants, the room on the left, we found an atmosphere so stifling that we were forced for a moment to retreat. There were two beds in the room: in one, which seemed to have heads all round it, were no fewer than nine women and children. They were stored so oddly and so thickly that it was not an easy matter to count them even by the strong light of the policeman's lantern. In the other bed were a man and a lad, and in a small room, or closet leading from this room, three other persons were sleeping. There was little ventilation. Had there been *none*, assuming that each respiration is 40 cubic inches (Menzies), the respirations twenty a minute (Haller), and that the existence of ·08ths. of carbonic acid is destructive (Liebig),* *the occupants of the front room must have died in eight hours!* We will not trouble our readers with the inference, nor need we give them further details of this quarter. Pondering on what we had seen, and weighing the possibility of improvement before the *infant-school* has done its work, we were glad to make our way homeward, to freer air. The morning was dawning, and Wordsworth gave us utterance for our impressions:—

"The city now doth like a garment wear
The beauty of the morning; silent, bare,
Ships, towers, domes, theatres, and temples lie
Open unto the fields, and to the sky;
All bright and glittering in the smokeless air."

"Ne'er saw I, never felt, a calm so deep!
The river glideth at his own sweet will:
Dear God! the very houses seem asleep;
And all that mighty heart is lying still."

The sun is up again, and we will look a little farther west. Let us examine what in Stow's time was the pleasant path "leading to the fields towards Highgate and Hampstead," and is now called, as it was then, Gray's-inn-lane. The courts and lanes in this locality extending towards Clerkenwell have long enjoyed an unenviable celebrity; and certainly the condition of many of them, as well as of their inhabitants, is miserable in the extreme. It is difficult to find fresh words to describe the varied scenes of wretchedness to which this inquiry leads us. We will enter the worst of these courts, Charlotte's-buildings, which, whether viewed in the bright sunlight, in drizzling rain, in the twilight or the dead of night, still has the same dismal, dreadful aspect. During the day, and particularly in the evening up till about ten or eleven o'clock, the narrow area is filled with strange-looking and ragged figures, whose dresses and complexion harmonize with the grey mouldy and dingy-looking walls of the buildings. So wild and haggard is the scene, that few who have not had experience of these places and people would venture to the bottom of the court. There are fifteen houses in this narrow place. Let us take one at random, and examine the interior. We have, Asmodeus-like, removed the outer wall from the top to the bottom, that our readers may examine without fear, and at their leisure, the extraordinary and distressing scene it presents. Let us schedule its contents, beginning with the *ground-floor front*. There are no bedsteads, chairs, or tables, a few ragged clothes are drying before a little fire in the grate, above the mantel are a looking-glass about 3 inches high and some torn prints of the Crucifixion, &c.; in the cupboards, without doors, are pieces of broken crockery; a kind of bed in one corner, with children asleep; the floor rotten in many parts, the walls and ceiling

* See First Report of Metropolitan Sanitary Commission, page 127.

sadly cracked. The rent is 2s. 3d. per week, which is called for every Monday, and must be paid on Wednesday.

The ground-floor back presents a sad scene of distress,—the man, his wife, and some children earn a living by chopping fire-wood; the man had been ill and not able to rise for two days, he was lying on a quantity of wood-shavings, and was partly covered with an old black and ragged blanket; his skin did not appear as if it had been washed for weeks; he was very ill, and evidently in a state of fever; his wife was almost equally dirty. "We have no wood to chop," was the expression of their ultimate distress. This room was much dilapidated, and they had suffered greatly during the late severe weather, owing to the broken condition of the windows. The rent was 1s. 9d. per week: the window overlooks a back yard, the condition of which was shocking: the senses of these poor creatures have, however, become so deadened that they seem only to be susceptible of cold and hunger, and the grossest impurity of the atmosphere is in no manner cared for. Viewing the unwholesome state of the back yard of this house (the others are equally bad), and considering the numerous places in London where similar accumulations of filth are allowed, we cannot but wonder that before this time the necessity for the formation of a sanitary police has not been admitted.

The first-floor, both back and front, was crowded with inhabitants. The people acknowledged that fifteen persons slept in the two little rooms last night; the walls were cracked and dirty, and the ceiling constantly falls upon the floor while the inmates are taking their food: one woman said that a part of the cracked hearthstone from above had fallen amongst the children. Some of the people in the front room are employed in chopping firewood, which the children are sent out to sell. It is difficult, since the new police regulations respecting the lodging-houses, to get a true account of the number who actually reside in these places, as the parties are afraid of the particulars getting to the ears of the authorities; they, however, confessed that fifteen grown people and children slept on this floor: the rent of the front room is 2s. 3d.; back, 1s 9d. Continuing our way up-stairs, we find the state of the staircase and the rooms worse and worse.

In *the front room two-pair*, when our eyes had become accustomed to the Rembrandtish gloom, we found fifteen persons: some had been selling onions, &c. in the streets; some begging; one or two were seemingly bricklayers' labourers; and others had been working at the carrion heaps in the neighbourhood. It was a motley group: a characteristic Irishman was seated on the top of an iron cooking-pot engaged in conversation with one whom he called "Mr. D." at the chimney corner. They were exceedingly polite, and no gentleman in his arm-chair could have been more courteous than our friend on his odd sort of throne. It is, unfortunately, difficult to get truth from the poor Irish, who will impose all manner of fables upon a stranger, and we did not find this case an exception. Nearly all the Irish by whom this court is occupied agree in stating that they were driven from Ireland by sheer distress, and that many fled from almost certain death at the time of the great famine. The rent of this floor is the same as that below.

The *attic*, in a state of repose, is shown in the top cut. This, if possible, exhibits greater poverty than below. The attics are full of large holes, and the light is visible through the roof. The rent of the attics is the same as below: it may seem strange that the prices of the rooms should not vary, but this uniformity is effected by the landlord removing those whose necessities are greater, or who may be a shilling or so in arrear of rent, to the upper quarters.

The first feeling after visiting this place is that of astonishment that persons should be allowed to let such dilapidated buildings to these poor people, who really pay more than a fair rent for a good house; the rooms are seldom unoccupied, and the loss trifling. The rent would be as follows:—

Four front rooms at 2s. 3d....	9s. 0d.	per week.
Four back do. at 1s. 9d....	7s. 0d.	,,
	16s. 0d.	,,

or 41*l.* 12s. per annum.

The population of this small court is immense. If we take an average of fifteen persons in each floor of the houses visited, and this is greatly below the number, we find sixty persons are occupying one house, and 900 are in the court.

In the neighbourhood of the above place are Bell-court, Tyndall-buildings, Baldwin's-gardens, Verulam-street, &c. Some of these are close courts, and others lead with various narrow ramifications towards Leather-lane. Fox-court, which for long was the habitation of the worst characters, is one of those passages with many branches and little courts,—some of which are very badly constructed. One small square place of this description, and which contains several tall houses, is entered by a very narrow covered entrance, in which, as if to stop the passage of even partially pure air, is situated the dust-heap, which we have seen overflowing, and in bad condition. The state of the houses not only here, but in Charlotte's-buildings, &c. bad as it is, is considered to have been wonderfully improved during the last few months. In Fox-court are several licensed lodging-houses; these have been limewashed, and in other ways cleansed; the space of the various rooms measured, and a number of lodgers appropriated to each, corresponding to the size of each. In this place is a clump of fourteen small houses, which have been thus prepared for lodgers. The number allowed is seventy-five, and the beds are mostly occupied: this at the charge of 3d. for each lodger per night, would produce 6*l.* 11s. 3d. per week, or 341*l.* a year. In this place, Fox-court, the unfortunate known in literature as Richard Savage, was born of the Countess of Macclesfield. In Portpool-lane is an improved building, erected under the superintendence of the Society for improving the Dwellings of the Working Classes—part of the funds for the erection of this building was provided by subscriptions collected in the London churches on the Thanksgiving-day for the departure of cholera. It is a great advantage to the neighbourhood, and consists of a very large washhouse, apartments for ironing, &c. It has been converted to its present purpose from the wreck of a brewhouse. Underneath the washhouse the cellars have been divided and fitted with closets intended for the purpose of the costermongers storing their unsold goods, instead of taking them, as they have now to do, into rooms so thickly occupied as those we have mentioned.

Each of the closets is provided with a lock and key, and a small weekly sum is charged for this, and accommodation for their barrows, &c.; there are also two sets of rooms for families, similar to those erected by the Society in other parts of London, and rooms for single women of good character; these rooms are neatly fitted with washhand-stand, two iron bedsteads, mattresses, &c. and plentifully supplied with water, and well ventilated: the rent of each of these rooms is 2s. per week: they are mostly occupied by two persons, who pay thus 1s. a week for a comfortable lodging, partly furnished. The great advantage of houses of this description for needlewomen and poor persons who take in washing, which they can complete at the washhouse opposite, is evident; and the good will be great if it can be shown that this class of buildings will pay the cost of erection at this rent.

Something should be done with Charlotte's-buildings forthwith. Few of the countless throng who flood the paths in Gray's-inn-lane have any knowledge of the hot-bed of disease and vice which exists within a dozen yards from them.

On the 18th Lord Shaftesbury echoed in the House of Peers our demands for the provision of proper dwelling-houses for the labouring classes in cases where houses so used were cleared away for improvements or otherwise, and sought to carry a motion compelling individuals or companies to whom power of clearance was given to make adequate provision of dwelling-houses for these classes within a convenient distance from the spot, and "sufficient for the accommodation of at least as many persons as can reside in the houses to be taken." The Bishop of London seconded it, and said, truly, that it was impossible to overrate the evils, physical, social, and moral, resulting from the overcrowding of many parts of the metropolis. The House refused the motion in that shape, and we are disposed to think wisely; but they agreed to appoint a committee to inquire what provision with the same ends in view should be inserted in Bills by which dwelling-houses occupied by the labouring classes are proposed to be extensively destroyed.

The view of the front of a house in Charlotte's-buildings, Gray's inn-lane, which we give in our present number, should be framed and hung up in the committee-room.

AMERICAN NEWS.

The Athenæum at South Brooklyn.—The building erecting for the Athenæum at South Brooklyn, New York, is approaching completion. It extends 90 feet on Atlantic-street, and 80 feet on Clinton-street, and is 62 feet in height from the sidewalk to the top of the cornice. The library is 21 feet wide by 70 feet in length. The reading-room will be 25 feet by 42 feet inside. The conversation-room is 21 feet by 36. There is a ticket-office and keeper's closet, and three rooms for offices. The third story will be entirely appropriated to the grand lecture-rooms which is 70 by 90 feet in extent, and 30 feet in height. A gallery supplied with seats is erected across the end of it. This room will seat over 1,800 persons, and is by far the largest public hall in Brooklyn. It will be furnished with a large organ. The cost of the building and site will be about 50,000 dollars.

Street Railways.—A petition to the Mass. Legislature has been signed by many of the more influential citizens of Boston for leave to form a railway from Roxbury to Boston, and through certain streets of the city. Railway street-tracks, as we have before noted in the *Builder*, exist in other cities of the United States, such as New York, Philadelphia, and Baltimore, but none have hitherto traversed any street in Boston. The *Transcript*, in advocating their introduction, says,—"The cars have advantages over omnibuses in many important respects. They are more convenient for persons to get into than coaches, and as they have doors at each end, and double steps, four persons can have egress from them at the same time. They are much wider than omnibuses. The drivers are always on the look-out for passengers, and by applying the break, they can stop at a crossing. Each car has an inside attendant to collect the fares and to answer questions in regard to localities. On a route of three miles there is but little difference in time gained by a car over an omnibus. In a car drawn by horses there can be social intercourse without annoyance. In cold weather a car can be made comfortable by means of a fire in a stove."——By recent improvements in the manufacture of rails, for city use peculiarly, a track can be constructed, which, while quite durable, offers little or no obstruction to the easy progress of ordinary vehicles. The cost of a single track, with proper turnouts, and all appliances, is estimated to be about 15,000 dollars per mile. But it is probable that two entire tracks would be required in our

streets, to accommodate the great number of passengers."

"*A Mammoth Locomotive*" has been built in Trenton, for the Camden and Amboy Road. It weighs 30 tons, is equal to 350-horse power, and is designed for burning coal. There are some peculiarities in its gearing and general construction. The engine is calculated for freight trains, and has wheels only 4 feet in diameter. The boiler is 24 feet in length, and 50 inches in diameter, tapering each way, forming a line on the bottom. The furnace is 47 inches wide, and 7 feet long, having a bridge 12 inches from the tube sheet. It is to be hoped that "mammoth *railways*" will ere long be looked on as an essential preliminary to the formation of "mammoth locomotives."

Railway Statistics.—Upon the Erie-road 31,000,000 of persons were carried one mile last year, at an income of about $1\frac{3}{4}$ cent. a mile for each passenger.

San Francisco is said to be now the third city in commercial importance on the continent of America. "The China trade," says a States' paper, "has hitherto been round the Cape of Good Hope: ere long it is to come directly across the Pacific to our Western shore. The great tract of 2,000 miles from the Missouri to the Pacific is not always to be a wilderness. Already there is a half-way house, and a beaten track, marked by human graves—pioneers that have fallen by the way. Yet each mouldering skeleton is an argument for not only the line of telegraph, but the railroad." As we think we have already noted, there are two schemes now before Congress for a telegraph to the Pacific, Eddy's and O'Reilly's.

The Hot-air Engine.—Captain Ericsson (says the *New York Home Journal*) is overwhelmed with orders for caloric-engines.

Notices of Books.

An Essay on the Principles and Construction of Military Bridges, and the Passage of Rivers in Military Operations. By General Sir HOWARD DOUGLAS, Bart. G.C.B. G.C.M. and G.D.C.L. Oxf. F.R.S. &c. Third edition, containing much additional matter. London: Murray, Albemarle-street. 1853.

THE fruit of many years' professional experience and reflection is here embodied in a highly important and well-known work. The first edition of General Douglas's treatise on "Military Bridges" was almost ready for publication nearly half a century ago, namely, in 1808; but from professional causes the publication was postponed till 1816. The second edition was called for in 1829, but elaborated and improved till 1832, when it appeared; and the present edition comes before the military and architectural public with the still farther advantage of other twenty years' experience and wisdom. This may, therefore, well be a standard work.

For behoof of our architectural readers chiefly (though we have also not a few military readers), we may here give some brief account of the contents. There are sections or chapters on the motion of water in rivers, on pontoons and pontoon bridges, bridges of boats and bateaux, flying-bridges, bridges on rafts of timber, casks, air-tight casks, and inflated skins; bridges on tressels, piles, and carriages; and, finally, on trussed and suspension-bridges. An Appendix contains much valuable information, also, on the cohesive strength of timber and other materials, the transverse strength of materials, resistance of beams to compression, and an investigation of the properties of the catenary curve. The whole is largely illustrated by engravings, and reference is facilitated by full indices to the subjects and the words.

The new matter has regard, mainly, or amongst other subjects, to the great alterations which have taken place within the last twenty years in the construction of the vessels employed in the formation of floating-bridges, and the numerous experiments carried on in this country, as well as on the continent of Europe and in the United States of North America, for the purpose of discovering the conditions under which stability with portability might be most effectually secured in the vessels employed. The various forms of pontoons adopted by different nations in consequence of such experiments have been introduced in the present edition, together with new modes of constructing stationary bridges for military purposes, and the fruits of Indian experience of late years in establishing communications across rivers of considerable breadth. There is, besides, much interesting detail as to military manœuvres and inventions in particular instances of advance and retreat in celebrated campaigns, and a miscellaneous infusion of other matter of interest to any reader.

The work is dedicated to Field Marshal H.R.H. Prince Albert.

A Plea for Geology and its Professors. By E. P. H. Vaughan. Trimen, Portugal-street, Lincoln's-Inn. 1852.

PROBABLY one main purpose in publishing a "plea" such as this on behalf of a science which itself really now needs it not, may be gathered from one of its own sentences, to the effect that as "astronomers of old were attacked as heretics, geologists in our time have been charged with being little better than atheists." In short, here is "milk" for those "babes" in grace whose delicate little *science digesters* revolt at the "strong meat," which is only fit "for those that are of full age, and who, by reason of use, have their senses exercised to discern" what is right and what is wrong,—what is true and what is false. Should any of our readers happen to be mentors to any such babes, they may find this *brochure* to be of some use in nourishing them with a little of the tender pap of science.

Miscellanea.

TREATMENT OF BLANK WALLS.—Why should even a mere wall be such an eyesore as we almost always see it? One of the plates in a work issued by the Architectural Publication Society has shown what may be done with a little thought—and something beyond ordinary modern practice has just been attempted in brickwork in Endell-street. Again, the streets of the city are too "cabined, cribbed, confined," not to render it desirable that all interests should aid in giving the appearance of spaciousness, wherever it will not interfere with private convenience. We would therefore substitute for the lofty blank wall [of Grocers' Hall] next Princes-street a screen of columns, and if the space suffices, we would place a statue in each intercolumn. The ugly wooden gates would of course be removed, and iron gates of superior design substituted. The doorway in the centre would remain. Some such arrangement, in the hands of the architect to the company, would still further aid the fine effect of this part of the city. If the connection of architectural forms with natural objects enhance the beauty of the latter, the advantage is reciprocal, and is, perhaps, never more apparent than when trees and foliage are seen through a screen of columns.—*Art-Journal.*

PATENTS UNDER THE NEW LAW.—W. E. Newton, Chancery-lane,—machinery for boring or cutting rocks or other hard substances; means of producing a vacuum for condensing steam, pumping water, exhausting air, &c.——A. V. Newton, Chancery-lane, apparatus for obtaining and applying motive power; means of urging the fires and increasing the draft of furnaces, and arresting sparks from locomotive engines.——J. C. Jeffcott, Cork, a heat-producer and steam-generator.——W. Beales, Louth, cement for resistance of fire.——J. Macintosh, Berners-street, compositions to be used as paints.——W. G. Elliott, Blisworth, manufacture of bricks, pipes, tiles, &c. in moulds.——W. Aspdin, Gateshead, manufacture of Portland and other cements.——J. Copling, jun. Hackney, a safeguard railway signal.——S. Smirke, Berkeley-square, apparatus for giving signals on railways.

BREACH OF AGREEMENT.—IMPORTANT TO WORKMEN.—At Liverpool last week, a workman was placed at the bar, charged by his masters, Messrs. Betteley and Co. chain-cable manufacturers, for refusing to return to his work. The solicitor for the masters said he appeared to apply for a warrant of commitment against the prisoner under 4th Geo. IV. c. 31. Applications were very seldom made under this most important statute; but it ought to be generally known, and he hoped it would go from the bench to the public, that if artisans or workmen of any description entered into any agreement with their masters, whether such agreement was in writing or not, for any time—a week, or a month, or a year,—and they did not perform such agreement, then that they could be brought before the magistrates and committed to the house of correction for any time not exceeding three months. Here the charge (which was then made by the solicitor) would not be preferred if the workman would return to his work—and he asked him if he were willing to do so?—Prisoner: I can't until I have finished a job I have in hand. If I go back to-morrow, how can I finish it? The Magistrate: Well, you have three months staring you in the face; and if I send you to goal, how can you finish it?—Prisoner: Who is to pay me?—The Magistrate: I can make no terms with you. If you do not consent to return to your work, the case must go on.—After some further hesitation, he promised to return to his work, and was then discharged.

CAMBRIDGE ARCHITECTURAL SOCIETY.—On Tuesday, March 8, Mr. G. M. Gorham, B.A. produced the drawings by Mr. R. Brandon for the proposed restoration of St. Benedict's Church, the well-known Saxon tower of which was restored some years ago under the auspices of the Camden Society. It was stated that in consequence of the opposition which had existed in the parish being withdrawn, the work of rebuilding the north aisle would be speedily commenced; and an appeal was made for funds to complete the restoration of the church. A paper was read by Mr. J. H. Cooper on the origin and objects of Architectural Societies. After alluding to the connexion between Christian architecture and freemasonry, and the decline of the former on the loss of the church's influence, the writer found the origin of these societies in the endeavours to recover the lost principles of the science. It was then shown how they effected this by the collection and comparison of examples and details from the whole Christian world. The senior secretary read some remarks upon the paper entitled Æsthetics of the Church, read at the last meeting, followed by Mr. S. B. Gould, on a monolithic church at St. Emilion, in the department of the Gironde, which he described as hewn out of the freestone cliff; it is Flamboyant in character, and known as the Chapelle des Rois.

THE GRAVEYARDS CLOSING.—In reply to a question put in the Commons by Mr. Whalley, Lord Palmerston stated last week, that being deeply impressed with the importance of carrying into effect the Act of last year, he had given instructions by which a member of the Board of Health was inspecting, one after another, all the graveyards of the metropolis; and as portions of his reports were received, he (Lord Palmerston) had taken the steps necessary for shutting up those reported unfit for permanent use. He expected that within a very short period all the graveyards of the metropolis unfit for use would be closed. We have not been mistaken, then, in anticipating that Lord Palmerston was not the man to let useful powers lie fallow. It remained for consideration in course of the session, his lordship added, whether it would not be expedient to ask for powers with regard to the country similar to those in existence as to the metropolis.

IMPROVEMENTS IN GENERATING STEAM.—Mr. S. Cable, of St. Louis, U.S. has taken out a patent for a new mode of generating steam, by which he proposes to dispense with boilers altogether. His plan is to employ a metallic net-work, similar to Ericsson's, upon which, when in a properly heated state, jets of water will be thrown, and being immediately converted into steam, will be conveyed to the steam-chest, where it will be employed in the usual manner. The advantages claimed are economy in fuel, and safety from explosion. How he proposes to restore the heat we do not know.

STRIKE.—A large body of supernumerary labourers at the Albert Dock warehouses, have struck for higher wages. The regular men get 3s. 6d. a day, whilst the irregular are said to get only 3s. and that after waiting days for a job. Another grievance is, that instead of being paid for half a day, when called in for a job, they are only paid 4d. the hour.

IMPROVEMENTS IN THE PRESERVATION OF WOODS AND METALS FROM DECAY.—The composition specified in Machabee's patent is formed by melting together three 1-5th parts of vegetable tar, one part of mineral tar, one-sixth part of resin turpentine of Pinus Larix, one-third part of wax, one-sixth part of white grease, with or without the addition of one-third-part of Roman cement, and a similar quantity of hydraulic lime in fine and sifted powder. The mineral ingredients are added to the others when in a boiling state, but are only required in those cases in which the material to be coated with the composition of mastic is to be exposed to the action of heat. The composition is applicable to wood, metal, brickwork, &c. the surfaces of which must be well cleaned prior to its application, which may be effected by means of a brush, whilst in a heated state, and any number of coats may be employed. When the composition is used for covering the inner surfaces of walls, a coating of plaster is applied over the mastic.—*Pharmaceutical Journal.*

VALUE OF GROUND-RENTS, &c. OLD BROMPTON.—At Garraway's, recently, Messrs. Cafe and Reid sold an extensive freehold estate, in the new Richmond-road, Old Brompton, between Fulham and Kensington. The following, according to the *Morning Advertiser*, are the prices realised by some of the lots:—A freehold residence and grounds, called Hermitage Lodge, let on lease at 130*l.* per annum—sold for 2,350*l.* A freehold detached residence, with stabling and pleasure-grounds, called the Hermitage let on lease at 115*l.* per annum—sold for 2,170*l.* Freehold ground-rents, amounting to 22*l.* per annum, secured on Nos. 1, 2, 3, and 4, Veira Villas—sold in four lots for 580*l.* Freehold ground-rents, amounting to 18*l.* per annum, secured on a detached residence and ground, adjoining Veira Villas—sold for 505*l.* Freehold ground-rents, amounting to 50*l.* per annum, secured upon Nos. 1, 2, 3, and 4, Hermitage Villas—sold in four lots for 1,310*l.* Freehold ground-rents, amounting to 12*l.* per annum, secured on Nos. 1 and 2, Portland Villas—sold in two lots for 335*l.* Freehold ground-rents, amounting to 64*l.* per annum, secured on Nos. 1 to 12 (both inclusive), Lansdowne Villas—sold in two lots for 1,650*l.* A freehold ground-rent, of 35*l.* per annum, secured on premises known as the North End Brewery—sold for 910*l.* Freehold ground-rents, amounting to 40*l.* per annum, secured on Nos. 1, 2, 3, and 4, Hermitage Cottages—sold in four lots for 1,130*l.* A plot of freehold ground, abutting on the Kensington Canal, and having a frontage of 169 feet to a side road—sold for 640*l.* A plot of freehold building ground, with a frontage of 28 feet to a side road, and a depth of 140 feet—sold for 105*l.*

OPENING OF ELEMENTARY DRAWING AND MODELLING SCHOOLS AT HEREFORD.—On Monday week these schools were formally opened at the Scudamore School, Hereford, in presence of a large and influential assemblage. The room was appropriately decorated with casts, &c.; and the master sent down by the Board of Trade to superintend the school, Mr. Skinner Clifton, delivered an address, Archdeacon Freer being in the chair. An evening class for mechanics, artisans, &c. has also been opened. About 40 pupils already attend the day class, and 54 the evening one.

SHROPSHIRE MECHANICS' INSTITUTION.—A lecture on "Ecclesiastical Architecture," illustrated by drawings of parts of the churches of Shrewsbury, was delivered at this institution on Friday evening last, by Mr. Dodson, of that town.

HEALTH ACT IN SWINDON.—MR. W. Lee, superintending inspector of the General Board of Health, has issued his "Report on a further inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the parish of Swindon, Wilts." It is very evident Mr. Lee had not an easy task to perform. Unfair prejudice had been raised by "misrepresentation," and the consequent "misleading of the less intelligent by some of those who should have taken care to inform themselves before instructing others." He describes the "wealthy and influential opponents of the Act" as having "made numerous statements which, on examination, were immediately found to be in error." One could hardly think men of rank would be found to openly protest on oath that it has "always been a remarkably healthy place," when the tables of mortality show that thoroughout the entire parish of Swindon the inhabitants do not, on the average, live to the age of twenty-four, while in the other registration districts in Wiltshire, as, for instance, Amesbury, Alderbury, and Wilton, the average duration of human life is more than thirty-nine. Throughout the report much virulence appears on the part of the opponents to the measure. It may be galling to certain individuals who have long "ruled the roast" in a small town, to find they are not big enough for a place growing still bigger. If the place has no local form of government, it surely is time one should be awarded it, and a local board chosen by the ratepayers from among themselves.—LYNX.

ARCHITECTURAL INSTITUTE OF SCOTLAND.—The eighth meeting for the session of this Institute was held on Thursday, 17th, in their hall, George-street. Mr. A. Thomson, of Banchory, sent a communication on the materials used in building by the ancient Romans, with illustrative specimens. The rest of the evening was occupied in the consideration of Bailie Boyd's model of the old town, which was exhibited, and in conversation on the plan suggested by that gentleman for widening the north bridge, and forming a new road to the railway station.

THE COMMITTEE ON THE NATIONAL GALLERY consists of seventeen members: Colonel. Mure, Mr. Labouchere, Mr. Charteris, Mr. Stirling, Mr. R. Currie, Mr. Milnes, Mr. Marshall, Lord Seymour, Mr. Vernon, Lord Brooke, Mr. Goulburn, Mr. Ewart, Mr. B. Wall, Sir W. Molesworth, Mr. Hardinge, Lord Graham, and Mr. Hamilton.

THE TOMBS OF VOLTAIRE AND ROUSSEAU.—The New York *Literary World* says,—Napoleon has determined not to remove the tombs of Voltaire and Rousseau from the Pantheon, now known as the church of St. Geneviève. He knows that the whole literary world of Paris would be indignant at such an act. A *bon mot* worth repeating is attributed to M. Romieu, the director of the Beaux Arts, on the occasion of his conveying the emperor's final resolution on this subject to the archbishop of Paris. The archbishop observed that he could not reconcile himself to the idea of saying mass over the ashes of such heretics as Rousseau and Voltaire. "Monseigneur," said M. Romieu, "you must admit that you could not do anything to annoy them more." Besides, may we add, and with all due deference,—were they not the very men beyond most others, who need it?

M. LABROUSTE.—A friend writes,—The sight of M. Labrouste's work in your last number recalled to my mind a circumstance which occurred at Rome, and which shows the spirit evinced by the French in matters of art. M. Henri Labrouste was a gold medal student at Rome, and in 1830, or thereabouts, he, according to the stipulated conditions, made a restoration of an ancient edifice, to be forwarded to Paris. He chose as subject the "Temple of Neptune at Pæstum." As you are aware, the "guttæ" in the Corona here are enormous; and being cylindrical in form, and the stone having a granulated appearance, they look like stupendous Stilton cheeses. Mr. Labrouste stated it to be his opinion, that these "guttæ" were inserted in the soffit. This idea met with opposition at Paris, and the controversy was carried on with great acrimony on the part of Mr. L.'s adversaries. Horace Vernet being made acquainted with the circumstance (he being the President of the French Academy at Rome at the time), without the slightest hesitation left the Eternal City to visit Pæstum, and make himself master of the question on the spot. The verdict was given in favour of M. Labrouste. I remember hearing Vernet's spirited behaviour in the matter much applauded at the time; nor was it thought in Rome that the president lost any portion of his dignity in evincing such decision and promptitude. I have been acquainted with M. Henri and M. Theodore Labrouste—both men of very great ability; M. H. distinguished for his great taste in designing and ability in drawing; M. Theodore for scientific and practical acquirements, as well as for his ability as a draftsman: the latter, the elder, also gained the gold travelling medal, and joined his brother at Rome. Both are known for their labouring habits and their great amiability towards their fellow-workers.

TENDERS

For the rebuilding Nos. 73 and 74, Leadenhall-street; Mr. Charles G. Searle, architect. The quantities supplied:—

Locke and Nesham	£1,975	0	0
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"*Books and Addresses.*"—We have not time to point out books or find addresses.

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KING'S-ROAD, CHELSEA.—To BUILDERS, TIMBER MERCHANTS, and OTHERS, requiring extensive premises.—TO BE LET, a commodious SHOP, with DWELLING, and TWO COTTAGES, and spacious premises at the back, measuring 200 feet by 50 feet, with a large productive garden, walled in. Immediate possession may be had.—Particulars of Mr. MITCHELL, 21, Moorfields street, Belgrave-square.

TO LET, a small WHARF, with Dwelling and Stabling, about 35 feet frontage on the River, situate in the south side of the river, near London-bridge. Apply at Messrs TANSON, 9, Lawrence Pountney-lane.

WANTED, to PURCHASE, a Six-Roomed HOUSE, or CARCASE; if the latter, price not to exceed 300l. The neighbourhood of Camden-town or King's cross preferred. Address, stating length of lease, ground rent, and full particulars, prepaid, to A. B. 30, Platt-terrace, Old St. Pancras-road.

WANTED to PURCHASE, a PLOT of FREEHOLD LAND, from a quarter to half an acre in extent, situate at Islington, Kingsland, Hoxton, Dalston, or Hackney, suitable for the erection of Almshouses. Good drainage and a supply of water are indispensable.—Terms and particulars to be furnished to Mr. SAMUEL ANGELL, 18, Gower-street, Bedford-square.

BIRKBECK FREEHOLD LAND SOCIETY.—A PUBLIC MEETING will be held at the ANGEL INN, Islington, on MONDAY, the 4th of APRIL, at which a second Investment Estate will be chosen for priority of choice out of the Estate recently purchased at Highgate. J. A. NICHOLAY, esq. JAMES BEAL, esq. and other influential gentlemen will address the meeting. The chair will be taken at EIGHT o'clock precisely. Members enrolled daily at the chief office, London Mechanics' Institution, Southampton-buildings, Holborn; also by Mr. WARR, 37, Blandford-street, Caledonian-road; Mr. CADNEY, 2, Russell-terrace, Oakley-square, St Pancras; Mr. HUNSEY, 30, Sudeley-street, Islington; Mr. BARNARD, 33, Albany-street, Regent's-park; and by

FRANCIS RAVENSCROFT, Manager.
15, Argyle-square, King's-cross.

All persons joining at or previous to the meeting will be entitled to part cipate in the ballot.

THE THIRD PIMLICO BUILDING SOCIETY. Established February 24th, 1853. Shares, 12l. each; monthly subscription, 10s. per share; entrance fee, 2s. 6d. per share. This Society is based upon entirely new principles, the chief object being to secure the greatest possible advantages to the borrowers. The directors serve gratuitously. The law charges are fixed and reasonable. On the first subscription evening 218 shares were taken by 89 members. The directors will be prepared to sell 3,000l. on the next subscription evening, March 31st, at half-past eight. The subscriptions being payable between the hours of six and eight. All persons taking shares previous to the sale will have the right of purchasing. Applications for shares, prospectuses, and rules, may be made to Mr. STENSON, 1, Bywater-street, Chelsea, or to Mr. STRONG, at the office, 37, Sloane-square.

HORTICULTURAL SOCIETY of LONDON.—PRIVILEGED TICKETS. 21, Regent-street.

The Exhibitions will take place on the Second Saturdays in May, June and July, namely, MAY 14, JUNE 11, JULY 9.

All Fellows who shall apply on or before Tuesday, the 26th of April, may obtain, at the rate of 3s. 6d. each, any number of tickets, not exceeding forty-eight; but no application for such tickets will be received after that day. Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 26th of April during which they may claim them. After that period all the 3s. 6d. tickets subscribed for, but not issued, may be cancelled.

After the 26th of April, any further number of tickets will be delivered to Fellows, on their personal application or written order, at the price of 5s. each ticket.

SPECIAL PRIVILEGE of FELLOWS.—Fellows of the Society enter free at half-past twelve, and can introduce two friends with tickets; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of free admission.

ARCHITECTURE, ENGINEERING, SURVEYING, and the FINE and DECORATIVE ARTS. A NEW LIST of Works, ENGLISH and FOREIGN, "sent free" on application by post to the Publishers.

ATCHLEY and CO. 106, Great Russell-street, Bedford-square, London.

THE ARCHITECTS', BUILDERS', and CIVIL ENGINEERS' DRAWING CLASSES, Conducted by THOMAS J. HILL. Offices, 32, Hinde-street, Old-street. Morning Classes from Ten till Four. Evening ditto Seven till Ten (Sundays excepted). Terms, with detail prospectuses, to be had on application.

PARQUET BORDERS are now laid (at about half the former prices) in geometrical, spiral, and all other designs on a new system, by which a room of the largest dimensions can be completed at a few days' notice. Applications from architects for designs and further particulars will be promptly attended to by

The LONDON PARQUETRY, 8, Whitefriars-street, City.

SAW MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw mills for exportation or otherwise.

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it is well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body, by which term the power of covering surface well and extensively, is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of proving its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed in the large way, by various practical men to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

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EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bal[illegible]un Greenside place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
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THE FINE-ART SUBSCRIPTION GALLERY FOR THE LOAN OF WORKS OF ART.

S. and J. FULLER respectfully invite the Patrons of Art to VIEW their SUBSCRIPTION GALLERY for the LOAN of WORKS of ART. Every department will contribute examples to the Collection: Landscape, Figures, Animals, Flowers, Fruit, Architecture, Ornamental and Decorative Designs, and Original Works of the principal Water Colour Painters.

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24 and 35, Rathbone-place.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Ve etian blinds, per square foot, 9d.; best holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; green wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

HEAL and SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, SENT FREE BY POST, contains designs and prices of upwards of ONE HUNDRED different Bedsteads, and also their priced List of Bedding. They have likewise, in addition to their usual stock, a great variety of PARISIAN BEDSTEADS, both in wood and iron, which they have just imported.—HEAL and SON, Bedstead and Bedding Manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

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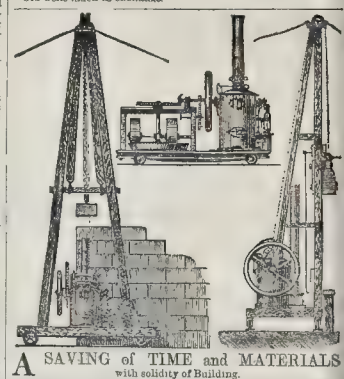
of any weight or key, singly or in peals, of superior tone. Peals augmented, cracked bells recast, rehung, &c.



MUSICAL HAND BELLS,

Clock, House, Ship, Cattle, and every other description of Bells kept in stock.

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A SAVING of TIME and MATERIALS with solidity of Building.

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From the Trustees of the Birkenhead Docks.

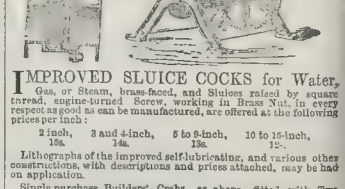
"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir.—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERCROMBY."



IMPROVED SLUICE COCKS for Water, Gas, or Steam, brass-faced, and Sluices raised by square thread, engine-turned Screw, working in Brass Nut, in every respect as good as can be manufactured, are offered at the following prices per inch:

2 inch,	3 and 4-inch,	5 to 9-inch,	10 to 16-inch,
18s.	14s.	13s.	12s.

Lithographs of the improved self-lubricating, and various other constructions, with descriptions and prices attached, may be had on application.

Single purchase Builders' Crabs, as above, fitted with Two Handles, and Wrought Iron Braces and Spindles, with Scit to throw in and out of gear, price 60s. each. Delivered in London free.

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THE STOCKTON BLUE LIAS LIME, ROCK, and PORTLAND CEMENT COMPANY.

No applications for Shares in this Company can be received after SATURDAY, the 2nd day of APRIL next.

Applications for Shares will be received by the Solicitor, JOSEPH ARCHER, Esq. 71, Tokenhouse-yard, City; or at the temporary offices, 34, Coleman-street, where also, and from the Solicitor, prospectuses with testimonials and forms of application may be obtained.

FORM OF APPLICATION FOR SHARES.

To the Committee of the Stockton Blue Lias Lime, Rock, and Portland Cement Company.

Gentlemen,—I request you will allot to me Shares in the above Company, and I agree to accept the same, or any less number you may allot me, and to pay the amount of 10s. per Share when required.

Name in full .....
Address .....
Occupation .....
Reference .....
Date .....

THE WRYSGAN SLATE and SLAB QUARRYING COMPANY, Port Madoc, North Wales.

Capital 15,000l. in shares of 1l. each.

On the Cost-book System; no royalty and no deed to sign.

Offices 26, Gresham-street, City.

The directors are making arrangements to put these valuable Quarries into active operation, and expect to pay a dividend in three or four months.

A small capital only will be required, as the rock is easily worked; the slates and slabs are of the finest quality and the estimates show a gross profit of 100 per cent.

Application for shares and prospectuses can be made on or before the 28th inst. to G. HUMPHREYS, Esq. 8, Throgmorton-street; or to the Purser, T. W. WILKINSON, at the Offices of the Company, where samples can be seen, and all information obtained.

By her Majesty's Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern

Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water and which particularly claim the attention of Water Companies.

Specimens may be seen and further particulars obtained at the offices

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Capital 50,000l. Provisionally registered pursuant to 7 & 8 Vict. c. 110. In 10,000 shares of 5l. each. Deposit, 1l. per share, to be paid on allotment.

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SECRETARY—Mr. J. F. Stanford.

OFFICES—No. 8, Arundel-street, Strand.

Application for prospectuses and shares to be addressed to the Secretary, 8, Arundel-street, Strand.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 300 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, an extent of 300 miles resulting from a close investigation of its merits recently made by some eminent French Engineers

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 26, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained on application to CHARLES MAY, Esq. C.E; or to WILLIAM HOWDEN, Secretary.

VALENTIA SLATE SLABS.—A Cargo, containing about 8,000 feet of inch, 4,500 feet of 1¼ inch, and 1,000 feet of 1½ inch SLABS of large dimensions, with some other thicknesses, is landed, for the convenience of purchasers north of the metropolis, at Freeman's Wharf, City-road Basin.

VALENTIA SLATE SLABS.—The Valentia Slate Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Milbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

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Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the idle imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Fittings, White Tiles, Slabs, and every variety of plain Slate work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

SLATE MANUFACTURE, by STEAM MACHINERY, at BRINDLEY'S OLD ESTABLISHMENT. Always on hand, a large assortment of useful size SLABS, of various qualities, and an extensive stock of ROOFING SLATES. Price lists may be had upon application, or sent by post.—Works and Wharf, Bermondsey-wall, Deckhead.

Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulines let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Pine Stuff, &c. Prompt attention paid to country orders.

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BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others, that he continues to supply the Box-hill Grouad Stone, Corshamdown, Coombedown, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

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BRENT MOOR GRANITE QUARRIES, SOUTH DEVON. W. TUCKWELL begs to inform Architects, Engineers, and Contractors, that he is prepared to SUPPLY any quantity of GRANITE from the above quarries.—Apply to W. TUCKWELL, at the Depôt, Norway-Sufferance-wharf, Greenwich, where a stock for immediate use is always available.

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FREESTONE.—Architects and Others are respectfully informed that a great REDUCTION has been made in the price of the LITTLE CASTERTON FREE-STONE, which may now be obtained at the Quarries, or at the Stamford Railway Station, at 1s. 3d. per cubic foot. This Freestone offers immense advantage to the purchaser, from the facility with which it is wrought.—Apply to FRAS. and COTS. M. SIMPSON, Stamford.

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MINTON and CO.'S ENCAUSTIC and other PATENT TILES for Churches, Entrance Halls, Conservatories, Balconies, &c.; Antique, Geometrical, and Alhambric Mosaics, manufactures of a highly decorative character and extreme durability, Slabs and Tiles for Fireplaces and Hearths, Covings for Grates, Door Furniture, White Glazed and Ornamental Tiles for Baths, Dairies, and Kitchen Ranges, may be had in great variety at their Warehouse, 9, Albion-place, Blackfriars-bridge, London, and at their Manufactory, Stoke-upon-Trent, Staffordshire.

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ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridges, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature also many other purposes supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 123 (having been at first No. 111).

PAN TILES, 52s.; Plain, 35s. per 1,000; superior Wide and Red Facing Bricks.—Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gasan 1 other shaped Goods. Wilson and Nonnuch Oven Tiles and Bricks, Dutch and English Clinkers, Patent Wall-kiln, and Corn-drying finely perforated Tiles, 12 in. and 9 in. Paving ditto, unequalled in quality and colour, at WARD'S old-established Honduras Wharf, Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded Bricks to any pattern.

COWLEY, KENT, and ESSEX BRICKS; also Yellow and Pale Malm Seconds, Cutters, Paviors, Shippers, &c. &c.

KENTISH RAG STONE of the finest quality, and of the blue tinge so much approved by architects, can now be supplied, at a FURTHER and CONSIDERABLE REDUCTION in PRICE.

Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington Butts.

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, and to judge for themselves.

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1852.

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July, 1852.

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And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square. Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen who have extensively used it, sent free to any part of the town or country. A Descriptive Folio for covering Boilers, &c. is also manufactured, by which a saving of about 25 per cent in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and CO.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW. Roofs covered with the Felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.

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In order to supply the deficiency which has hitherto existed in Furniture suitable for the many Mansions that have been erected or restored in the MEDIÆVAL STYLES, Messrs. CRACE have directed their particular attention to this subject, in addition to their other works, and have prepared appropriate specimens in the various branches of Furnishing.

STUFFS for HANGINGS, in simple Worsted Damask, in Silk; also in Tapestry of Bauderkin.

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The whole of the above-mentioned Furniture, &c. is designed by the late Mr. A. W. PUGIN, Architect.

To render this Furniture generally available, a considerable portion has been arranged in the simplest manner, consistent with its ancient character.

14, Wigmore-street, January, 1853

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New Wharf, Abingdon street, Westminster, Sept. 23, 1852.

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PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

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NO. 18, CURSITOR-STREET, CHANCERY-LANE.

SANDS and EMERY,



Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.



Glazed and Polished Goods in Walnut and Mahogany securely packed for the country and for exportation.

By inclosing a postage stamp, a full List of Prices will be returned.

DISSOLUTION of PARTNERSHIP.—HENRY PASK (late Johnson and Pask), Baker-street, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.

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The Builder.

SATURDAY, APRIL 2, 1853.

WE were amongst the first to announce to the public the details of Mr. Layard's singular discoveries at Nineveh, when his springing fame was first cherished by the Royal Institute of Architects; and ever since we have kept our readers pretty well acquainted with the progress of the interesting excavations by which he and others in his track have brought to light many long-buried and forgotten treasures of antiquity. We have now to trace out a few further outlines of the progress of the vision of that ghost of a departed nation which has been called up by the divination of Dr. Layard's sagacity. The last volume published by him* contains the result of his second expedition, undertaken for the trustees of the British Museum; and on the eve of its publication we find the indefatigable author taking his departure once more to the East, from which quarter he doubtless will not return without a still further accumulation of materials to add to the noble archæological structure he is rearing.

As indicated in the title, Mr. Layard, in the present rather bulky volume of 686 pages, details his last progress to Nineveh and Kouyunjik, both near Mosul, his report of progress there, his journey thence to Babylon, with his remarks and excavations on that ancient site and centre of archæological interest, and, finally, his return to Mosul and report of further progress during his visit to Babylon.

The volume, besides its antiquarian interest, is full of lively descriptions of the people and the districts through which he journeyed, and even its architectural interest is not confined to Nineveh and Babylon. The author describes everything of archæological or architectural importance which presented itself on his way, and we may here follow his route and glean a few of the particulars with which the volume is filled.

On the journey to Erzeroom, at a small Armenian village, the author visited the remains of several early christian Churches or baptisteries.

"These remarkable buildings, of which many examples exist, belong to an order of architecture peculiar to the most eastern districts of Asia Minor and to the ruins of ancient Armenian cities, on the borders of Turkey and Persia. One of those visited is an octagon, and may have been a baptistery. The interior walls are still covered with the remains of elaborate frescoes representing Scripture events and national saints. The colours are vivid, and the forms, though rude, not inelegant or incorrect,—resembling those of the frescoes of the Lower Empire still seen in the celebrated Byzantine church at Trebizond, and in the chapels of the convents of Mount Athos. The knotted capitals of the thin tapering columns grouped together, the peculiar arrangement of the stones over the doorway, supporting each other by a zigzag, and the decorations in general, call to mind the European Gothic of the middle ages. These churches date probably before the twelfth century; but there are no inscriptions, or other clue, to fix their precise epoch, and the various styles and modifications of the architecture have not been hitherto sufficiently studied to enable us to determine with accuracy the time to which any peculiar ornaments or forms may belong. Yet there are many interesting questions connected with this Armenian architecture which well deserve elucidation. From it was probably derived much that passed into the Gothic, whilst the Tatar conquerors of Asia Minor adopted it for their mausoleums and places of worship."

The square head of the doorway of the church at Varzahan, of which a sketch is given, formed of wedge-shaped stones, with a huge key-stone, is curious.

At Akhlat, on the lake of Wan, are some early Mussulman tombs worth a passing notice. They are built of a deep red stone, with conical roofs resting on arches, and columns with deep cornices intervening, formed of many bands of ornaments, each different from all the others.

At Nimroud, discoveries of very considerable importance were made in the high conical mound at the north-west corner. After tunnelling into it for no less than 84 feet through fallen rubbish, the workmen came to a wall of solid stone masonry. The tunnelling Mr. Layard ordered to be carried along the basement wall in both directions, hoping to reach some doorway or entrance, but it was found to consist of solid masonry, extending nearly the whole length of the mound. Its height was exactly twenty feet, which, singularly enough, coincides with that assigned by Xenophon to the stone basement of the wall of the city (Larissa). It was finished at the top by a line of gradines, forming a kind of ornamental battlement, similar to those represented on castles in the sculpture. These gradines had fallen, and some of them were discovered in the rubbish. The stones in this structure were carefully fitted together, though not united with mortar, unless the earth which filled the crevices was the remains of mud used, as it still is in the country, as a cement. They were bevelled with a slanting bevel, and in the face of the wall were eight recesses or false windows, four on each side of a square projecting block between gradines. Further excavation led to the conclusion that this high conical mound was the remains of a square tower, and not a pyramid, as was conjectured. The author thinks it very probable that this ruin represents the tomb of Sardanapalus, which stood at the entrance to the city, and might thus, we presume, have been built upon the basement wall of the latter. Central tunnelling, cross tunnelling, and pit sinking, however, failed to decide this question, though a long gallery or chamber was discovered which, Mr. Layard thinks, was evidently the place of deposit for the body, if this were really his tomb. The height of this tower, it is calculated, must have been 200 feet, possibly considerably more. Into details of the other discoveries further made at Nimroud and Kouyunjik, we shall not now enter, unless it be to state that a vaulted drain was discovered beneath the north-west palace at Nimroud, and that two massive bronze sockets, in which must have turned the hinges of the gates of the palace, were also found. We shall afterwards have occasion to speak of the restoration of the whole palace at Kouyunjik.

On a tour in the mountains of central Kurdistan to escape the summer heats, which already fevered his blood, the traveller, after leaving Wan, passed through Vistan and visited the Armenian convent and church there.

"The church, which is within the convent walls, is built of the sandstone of a rich deep red colour that has been quarried for the turbehs of Akhlat. Like other religious edifices of the same period and of the same nation, it is in the form of a cross, with a small hexagonal tower, ending in a conical roof, rising above the centre. The first monastery was founded by a Prince Theodore in A.D. 653; and the church is attributed to the Armenian king Kakhik, of the family of Ardzrouni, who reigned in the tenth century; but the island appears from a very remote date to have contained a castle of the Armenian kings. The entrance and vestibule of the church are of a different style from the rest of the building, being a bad imitation of modern Italian architecture. They were added about one hundred years ago by a patriarch, whose tomb is in the courtyard. The interior is simple. A few rude pictures of saints and miracles adorn the walls, and a gilded throne for the Patriarch stands near the altar. The exterior, however, is elaborately ornamented with friezes and broad bands of sculptured figures and scroll work, the upper part being almost covered with bas-reliefs, giving to the whole building a very striking and original appearance. The conical roof of the tower, rising over the centre of the cross, rests upon a frieze of hares, foxes, and other animals. Above arched windows are bands of rich foliage, and beneath them, at the base of the tower, a row of small vaulted recesses. The roof of the transept is supported by human heads. Beneath is a frieze, Assyrian in its character, and resembling the embossed designs on some of the bronze dishes described in a previous chapter. It consists of lions springing upon stags, and figures of wild goats, hares, and deer. Under the projecting roof of the aisle is a frieze, formed of bunches of grapes mingled with grotesque forms of men, animals, and birds. Next is a row of the heads of similar figures, projecting in high relief from the wall. They are succeeded by bas-reliefs representing Scripture stories from the Old and New Testaments, divided into separate subjects by medallions with images of Armenian saints. An elaborate border of scroll work completes the exterior decoration about half-way up the building. The human form is rudely portrayed in these sculptures; but the general design is far from inelegant, and the ornaments rich and appropriate. I know of no similar specimen of Armenian architecture, and I regret that time would not allow me to make detailed drawings of the edifice.*

In a graveyard outside the church are several most elaborately carved tombstones belonging to the early Armenian patriarchs. That of Zachariah, who died in the fourteenth century, and who was for one year patriarch at Echmiadsin and for nine years at Akhtamar, is especially worthy of notice for the richness and elegance of its ornaments."

At Babylon, as yet, not much has been done in the way of architectural discovery. The remains of a tower, supposed by some to have been the great tower of "Babel" itself, were bored into, but found to have been used as a burying ground, the stench of which was too much even for the rude workmen employed in tunnelling its interior. The actual shape of the building of which this mound is the ruins, Mr. Layard regards as having been square, and as having had story upon story rising as terrace within terrace, the inmost terrace having been the highest. Mr. Layard has been able to add little to our actual knowledge on this head. Though few architectural curiosities have as yet been found here besides abundance of Nebuchadnezzer's bricks, various interesting and curious objects of general archæological interest have been added to former acquisitions from the same source.

As yet no traces have been discovered of the great wall of earth round Babylon, rising, according to Herodotus, to the height of 200 royal cubits.

In reference to the theoretical restoration of the royal edifices at Nineveh or Nimroud and Kouyunjik, and of one of which the volume contains an illustration as a frontispiece, we may quote some of the author's remarks, in course of which he had drawn a close comparison between the palace and temple of Solomon and the edifices at Nineveh:—

"Mr. Fergusson, in his ingenious work on the restoration of the palaces of Nineveh, in which he has, with great learning and research, fully examined the subject of the architecture of the Assyrians and ancient Persians, availing himself of the facts then furnished by the discoveries, endeavours to divide the Khorsabad palace, after the manner of modern Mussulman houses, into the Salamlik or apartments of the men, and the

* Discoveries in the Ruins of Nineveh and Babylon; with travels in Armenia, Kurdistan, and the Desert. By Austen H. Layard, M.P. author of "Nineveh and its Remains." With maps, plans, and illustrations. London: Murray, Albemarle-street. 1853.

* This building affords another clue to the origin of the early Mussulman architecture—Arab and Tatar—of which remains exist in many parts of Asia Minor, and particularly at Akhlat.

Harem or those of the women. The division he suggests, must, of course, depend upon conjecture; but it may, I think, be considered as highly probable, until fuller and more accurate translations of the inscriptions than can yet be made may furnish us with some positive data on the subject. In the ruins of Kouyunjik there is nothing, as far as I am aware, to mark the distinction between the male and female apartments.

In all the Assyrian edifices hitherto explored we have the same general interior plan. On the four sides of the great halls are two or three narrow parallel chambers opening one into the other. Most of them have doorways at each end leading into smaller rooms, which have no other outlet. It seems highly probable that this uniform plan was adopted with reference to the peculiar architectural arrangements required by the building, and I agree with Mr. Fergusson in attributing it to the mode resorted to for lighting the apartments.

In my former work I expressed a belief that the chambers received light through an opening in the roof. Although this may have been the case in some instances, yet recent discoveries now prove that the Assyrian palaces had more than one story. Such being the fact, it is evident that other means must have been adopted to admit daylight to the inner rooms on the ground-floor. Mr. Fergusson's suggestion, that the upper part of the halls and principal chambers was formed by a row of pillars supporting the ceiling, and admitting a free circulation of light and air, appears to me to meet, to a certain extent, the difficulty. It has, moreover, been borne out by subsequent discoveries, and by the representation of a large building, apparently a palace, on one of the bas-reliefs discovered at Kouyunjik. In the restoration of the exterior of the Kouyunjik palace forming the frontispiece to this volume, a somewhat similar capital has been adopted in preference to that taken by Mr. Fergusson from Persepolis, which, although undoubtedly, like the other architectural details of those celebrated ruins, Assyrian in character, are not authorised by any known Assyrian remains.*

A row of pillars, or of alternate pillars and masonry, would answer the purpose intended, if they opened into a well-lighted hall. Yet inner chambers, such as are found in the ruins of Kouyunjik, must have remained in almost entire darkness. And it is not improbable that such was the case, to judge from modern Eastern houses, in which the absence of light is considered essential to secure a cool temperature. The sculptures and decorations in them could then only be seen by torchlight. The great halls were probably in some cases entirely open to the air, like the court-yards of the modern houses of Mosul, whose walls are still adorned with sculptured alabaster. When they were covered in the roof was borne by enormous pillars of wood or brickwork, and rose so far above the surrounding part of the building, that light was admitted by columns and buttresses immediately beneath the ceiling. It is most probable that there were two or three stories of chambers opening into them, either by columns or by windows. Such appears to have been the case in Solomon's temple; for Josephus tells us that the great inner sanctuary was surrounded by small rooms, 'over these rooms were other rooms, and others above them, equal both in their measure and numbers, and that these reached to a height equal to the *lower part* of the house, for the upper had no buildings about it.' We have also an illustration of this arrangement of chambers in the modern houses of some parts of Persia. Although no remains or even traces of pillars have hitherto been discovered in the Assyrian ruins, I now think it highly probable, as suggested by Mr. Fergusson, that they were used to support the roof. . . . . I have endeavoured, with the able assistance of Mr. Fergusson, to convey, in a coloured frontispiece to the Second Series of my larger work on the Monuments of Nineveh, the general effect of these magnificent edifices when they still rose on their massy basement, and were reflected in the broad stream of the Tigris."

Amongst the numerous engravings with which the present volume is interspersed are several which we may here briefly notice.

Amongst the bas-reliefs discovered at Kouyunjik is one of a casket or vessel mounted on a pedestal, and probably of gold or silver.

"The upper part, shaped like the walls of a castle, with battlements and towers, rested upon a column whose capital is formed by Ionic volutes (an instance of the early use of this order of architecture on the banks of the Tigris). The whole is supported by projecting curved feet ending in the hoofs of bulls, and stands on the cone-shaped ornament so frequently seen in Assyrian furniture."

Another bas-relief, at the entrance to a small temple at Nimroud, representing what has been called a Fish God or Dagon, suggests an idea which it may be worth while here to notice. The figure is that of a man, in all respects, and in some essentials, such as the sacred pine cone in one hand, and basket in the other, identical with many others also sculptured on the walls of the Assyrian temples. The main peculiarity of this figure consists in a singular piece of dress in the form of a fish, the body of which extends down the back, while the head forms a covering for the head of the man, or priest, or god, as it may be. Now, what to us appears plainly to be the gills of the fish, as represented in the figure on page 350, forms, along with the fish's head, a portion of the head-dress, and what is remarkable, and may be of importance in inquiry, these gills assume so exact a likeness to what has been called "the sacred horns," on the head-dress of many of the other priestly or idol figures, that it at once suggests the question whether these "horns" were not intended, at all events originally, to represent the gills of a fish rather than the horns of an animal, more particularly as they do not consist simply of a single horn on one side, but are of a threefold nature. That the rest of the usual head-dress of the figures is not exactly like this fish-formed head-dress is nothing, for in another sculpture, the fish-formed head-dress stands confessed as a bishop's mitre, different from either.

Moreover, on a remarkable bas-relief of the king himself, in his priestly character and sacrificial robes, represented in the engraving facing the page immediately following that on which the Dagon is represented, namely, p. 351, we are told by the author that "the four sacred signs,—the crescent, the star or sun,* *the trident*, and the cross," are strung round his neck; and the engraving itself displays more than one of these, together with "the mystic symbols of Assyrian worship,—the winged globe,† the crescent, the star, *the bident*, and the *horned cap*." As for the "horned cap" here depicted, it is decidedly much liker to a fish's gills than to a horned cap. Since, therefore, on the whole, we find the worship of Dagon, with the fish form, the fish-headed mitre, the trident, and the bident so curiously denoted in various of these Assyrian sculptures, is it not probable that, however like to horns the emblem may have become in other cases, or at a future time, it originally signified the same thing which appears, where the whole of the fish form is shown, in connection with that form, and as the gills of the fish? We know that even in Christian tradition the fish was an emblem of a perfect man, or "a son of God," and the *vesica* is a form in bas-relief on Christian temples which interchanges most significantly and most singularly with the cross of the Christian sculptured as a sacred emblem on the bas-reliefs of the ancient and pre-Christian temples of the Assyrian and Egyptian Magi. That the fish form and its adjuncts, thus so curiously brought out as prominent symbols in Assyrian worship, are connected in meaning with that of "the mysterious fish" of the Magi, as to which these ancient sophi or sages often spoke, we cannot doubt; and since the cross, too, was with them a sacred emblem, and denoted, even in the religion of the Magi, the spiritual life, we may readily grant that these ancient Magi knew more of "Him who came by water," and "the Head of every man," than many may feel inclined to give them credit for. In fact, since water is denotive of the life of the Spirit,—"the living water" into which Christians are typically born in baptism by water,—what more fitting or significant emblem could there be of that very *life* than the peculiar organ whereby alone the fish is enabled to preserve its life in water? Even the mitre of the bishop thus comes to have a new—or rather a restored—significance, in singular harmony with the doctrine which he preaches.

We may note that to the chariot horses in the Assyrian sculptures there is usually attached, either to the extremity of the pole or to the trappings of the neck, a long fish-shaped piece of drapery, embroidered. It has been suggested that "the precious clothes for chariots," alluded to by Ezekiel as being obtained by the people of Tyre from Dedan, applied to this singular piece of trapping.

It is a curious circumstance, that a *bonâ fide* magnifying glass, identified by Sir David Brewster as decidedly and designedly such, was found by Mr. Layard in one of the temples at Nineveh. In perusing the present volume we were several times rather oddly reminded of this, by here and there finding the author remarking, and indeed complaining or regretting, that many of the cuneiform inscriptions and other smaller sculptures are so delicately cut *and so minute* as to be "almost unintelligible without a magnifying glass." Could he not have tested them with what we may call *their own* magnifying glass? Was it not *intended* that they, or others still more minute, *should* require such an instrument to reveal their mysteries? May there not be other discoveries to be made by aid of the magnifying glass, of which even Dr. Layard has as yet not the slightest idea?

We have been more mystical than usual: let us end, at any rate, with a practical reminder for students of architectural history of the fresh links in the chain of inquiry which the researches and discoveries at Nineveh have provided. The discovery of the arch here, the prevalence of the honeysuckle ornament, nowhere seen in Egyptian work, but adopted by the Greeks, the germ of the Ionic order here, and the extent to which Greek art generally is indebted to Assyria, are all points for study and inquiry. The interest of the sculptures, in an archæological point of view, increases with the reflection that "Before these wonderful forms Ezekiel, Jonah, and others of the prophets stood, and Sennacherib bowed; that even the Patriarch Abraham himself may possibly have looked upon them."

It is fortunate for all that Dr. Layard had not exactly the same ideas concerning investigation as a certain Turkish Cadi, to whom he wrote, inquiring as to the population and remains of antiquity of an ancient city, and whose reply he prints:—"Although I have passed all my days in this place," said the worthy Cadi, "I have

* "See Frontispiece to Mr. Fergusson's Palaces of Nineveh restored. The pure Ionic volute occurs amongst the bronze ornaments from the throne in the British Museum. I have lately, however, found, amongst the small objects brought by me to this country, what appears to be part of a double bull proceeding from the capitals of Persepolis. Between the figures is a groove for the beam. It may have belonged to some model of a building, not a column."

* The star, the volute, and the guilloche, have all been found on Assyrian art-works and architecture. In reference to this fact, and to what is now being said as to fish-forms, tridents, &c. in connection with the doctrines of the ancient Magi, it may be worth while to reperuse some remarks by "J. E D." under head of "Cursory Comments and Suggestions," which appeared some time since in our columns. We may here observe, also, in reference to these facts, but particularly in reference to the form of crystalline bismuth, or squared volute, if we may so call it, that it is a frequent ornament in Chinese architecture.

† The winged globe, as frequently represented, by the way, reminds us singularly of the pearl shell emblem which covers the face in the moral, or funeral dress of the Pacific Islanders in the British Museum.

neither counted the houses nor have I inquired into the number of its inhabitants." "But above all, as to the previous history of this city, God only knows the amount of dirt and confusion that the infidels may have eaten before the coming of the sword of Islam. It were unprofitable for us to inquire into it. Oh, my soul! Oh, my lamb! seek not after the things which concern thee not. Thou camest unto us, and we welcomed thee: go in peace!"

A JANGLE ON BELLS ARCHITECTURAL, BY A LOVER OF DAY-DREAMS.

JANGLE THE SIXTH.*

SHAMS, GREAT AND LITTLE.

PACIFERA was not long in fulfilling her promise, and with a more serious aspect than usual, she thus commenced:—

"Of all the deplorable things which may be daily witnessed in this much-erring world, and of all the things which call the most loudly and urgently for stern reproof, and still sterner punishment, is that common practice of the crafty—tricking, beguiling, deceiving, and leading astray the weak, in order, sooner or later, that they may be enabled safely to prey upon them, and rob them with perfect impunity to their hearts' content. Of all the things, I repeat, which are to be deplored, and which deserve to be the most severely punished, surely these things and the doers of these things are the chief. Fear not that I am belying my name; let not my words seem harsh and uncharitable,—they are neither the one nor the other; utterly and altogether destitute of your modern pernicious philanthropy I will indeed own they are. I for one have no wish to see premiums put upon wickedness, and mercy without justice. a pretty sort of mercy she would indeed be, deprived of this her very spirit; never has there yet been seen so helpless, useless, and diseased, a thing as she would certainly become were she unfounded in and separated from justice,—separated in direct opposition to all good laws and ordinances of men; in still more direct antagonism, if indeed it could be possible, to all the laws and ordinances of Heaven. Therefore, to these false guides I would deal out good measure of stern punishment, such measure as should indeed deter others from following in their footsteps, and copying their deeds.

For think, I beseech you, how grievous is the offence, and how great the iniquity of these offenders: is it not enough that men even now are stumbling day by day as they pursue their weary life—stumbling, many to rise no more, and others, though a little more fortunate, yet wounded for their life? Is it not enough that cries of misery and despair are ever ascending into the height of Heaven? Is it not enough that they are groping in darkness, though longing often for the light. And yet these men would make the world more wretched still: sowing its pathways still more thickly with stumbling-blocks, and snares, and pitfalls; causing a deeper and more heavy cry to escape man's anguished lips, and obscuring from his straining eyes and ardent watching the faint rays of the coming light. Therefore do not they well deserve visiting with our wrath, and even, if it were possible, casting out from us?

Now though I would not for a moment honour with such measure of indignation anything so puerile and contemptible as the sham and dealing-in-sham architect, but would only desire to castigate him publicly and to his disgrace, reserving the axe and headsman for other sham dealers of more daring mind, and greater capacity for thorough wickedness; yet we may profitably occupy ourselves with him for a time, and examine some little into the height and depth of even *his* misdeeds and iniquity.

It has been so clearly stated not very long ago by one whom few are foolish enough to scoff at, that truth is one thing and falsehood another, and that there is no uncertain and debateable ground between them, but that our every action must belong either to one or to the other; this has, I say, so recently and forcibly been stated, that it seems strange there should be any necessity again to repeat it. And yet, to judge by the tone and words and writings of some, it still remains a thing of which they are totally unconscious.

So to all such people it will be perhaps but waste of time to state the moral reasons for not employing anything bearing kindred the most remote to a 'sham,' either in the design or in the execution of a building; but, I am glad to say, there are many others besides these, and to them a few words may be useful, though I am well aware that among the sons of men, teachers, zealous and good, have ere now set forth these things, and discoursed well thereon. Are there any among men so gross and dead to all that is good, and pure, and holy, as not to mourn that Truth is not far more frequently present with us? or so blind as not to see, that were Truth regarded perpetually and observed constantly—in a word, were she universal, that then there would be an end to all cries of misery and woe, and happiness would indeed cover our earth as with a garment? But this, in our present imperfect and degraded state, we may never hope to attain; and yet, if we can see that this is the goal to which our aspirations should tend, and to the reaching of which every effort should be directed, is it not also plain that every step, or approach towards a step,—yes, even an inclining towards the opposite way, is wrong, radically and utterly wrong? And is it not treason of the worst kind even to turn our faces towards that seductive and dangerous path.

If then in any course of conduct even a shadow of a doubt may be reasonably entertained of its lawfulness and rectitude, it is our duty, and ought to be our constant practice, to abstain religiously from following it; for there is no such thing as harmless falsehood, though men with seared consciences may flatter themselves into believing they think so: and again, the intent or wish to deceive is fully as bad, and fully as iniquitous, as the successfully-practised fraud and well-contrived falsehood.

I have heard with sorrow, some amongst men speak scoffingly and contemptuously of Nature as a guide, counsellor, and teacher, and ask, in all the pride of confident assurance, where columns, or entablatures, or arches, could be found in nature: vain ideas and narrow minds, not feeling or seeing that Nature's power lies in the 'spiritual' and not in the 'material;' and that her influence and teaching are to be imbibed through every pore, and drank in largely, not dealt out by measure and in quantity, or calculated by scale. Well, perhaps here is one thing we may learn from Nature bearing on the question in hand; for I am assured that neither in her height, or depth, or breadth; neither in the heavens above, nor the earth beneath, nor the waters under the earth,—no, not in the whole creation, is there anything to be found in any way partaking the nature of a deception or a sham. Search as you will, from morn till night, from day to day, from week to week, and from year to year, your toil will be but fruitless and your labour unrewarded; for though you will find things without number beautiful, pure, lovely, and perfect, never will you find the thing for which you are seeking; and I can but pity the man who, standing in the pure air and bright sunshine, could conceive it even for one moment possible.

If, then, we had no other evidence than this, we might rest fully assured that in any way to use or practice deception is a bad and dangerous practice. In Nature may be found every kind of material, from the most common to the most precious, and she seals all alike with beauty, yet preserving to each its proper qualities and attributes; no one thing trespassing or infringing upon another, much less endeavouring to resemble and palm itself upon the observer as aught but what it really and truly is.

So, if men cannot likewise clothe with beauty whatever materials may be given them without perverting their lawful use, it is a sure and certain sign of their incompetency and unfitness for the task which they have been foolishly intrusted with, or have improperly arrogated to themselves.

Again; if, as you rightly observed when we last met, no really great work has yet been done by man but Truth has been its base and its establishment—what urgent need that, even looking at the question merely with the eye of an artist, all shams, and deceptions, and counterfeits, should be carefully destroyed? Can it be that there are men who, in their dull content, would wish their works to perish with themselves, careless, even, if oblivion settled down on both alike, as soon as this short earthly life has spent its time and strength? If there are such, to them I address not myself,—they are past cure, nor worth the pains incurred in making the effort to instruct them; but I would turn to all those others, of higher hope and better desire, and to them I would say, 'If your desires are right, see that you properly seek to accomplish them; and if, indeed, you wish that your work should be living, and that your name should be remembered, in Truth all your efforts must be founded, else will they never prosper: devoid of her, nor standing in her strength, no power upon earth can save them from oblivion and from justly merited contempt.'

Once more; is it manly? Is it chivalrous? Is it wise, to spend your lives in doing that which is not essentially good; in wasting your time with foolish deceits and idle imaginations, when that time is far more precious than can be conceived, and which, when wasted, can never be recalled. Listen, for one moment, listen! You need not hearken very long or very deeply; it may be heard all too easily and plainly for much need of that; a bitter cry of wrath and discontent gaining strength and fury every day, and boding bitter evil for the days to come, if men do not take the warning ere it is too late; oh! see that you add not fuel to its fire; every one is doing so, whether he thinks it or not, if he is in any way countenancing, encouraging, making, or even believing in a 'sham.' For, verily, this earth is even now so full of deceits and counterfeits, that should not men arise and shake the bitter yoke to pieces, the very rocks and stones,—yea, the very earth itself, would cry out against them.

But to all this it may be said, 'To the general truths of your statement we agree; but what constitutes deception and sham in architecture?' Verily, my masters, you have asked a weighty question; nevertheless, have a care lest the answer fall even upon your own heads, some of ye, O interrogators! For the architect may indeed not only use and employ, countenance and patronise, deceptions, but he himself may be one also, and indeed is so whenever he copies where he ought to think, dabbles in dead styles, and clothes his poor ideas in dead men's thoughts, mainly to save trouble, and partly through incompetence; yet here I need hardly dwell, so well has it lately been set forth to you. Again, every building is one deception, from plinth to cornice, which, built in one age, apes, without adaptation and without change, the unsuitable forms and detail of some other age, differing from its own in manners and civilization. To copy blindly any dead style is merely to show—and to show very plainly—how ignorant we are of the true principles of the style we copy. Indeed, all pure copyism is deception, and many a modern building has earned its designer praise, when all the merit rightly belonging to him was that most questionable in its kind—of having opened one of his books of dry bones possibly at a fortunate page. Descending lower in the scale, in every sense lower indeed, we reach those counterfeits of material, so justly reprehended and so sure of eventually perishing. One would think, to read the various apologies of those who still contend for these things,—from the mild suavities of those who keep their temper, to the petulantly foolish philippics of others, who never apparently had either temper or anything else good to lose,—that such phrases as 'jointed to imitate stone,' and others similar in nature and equally plain in their words, were unknown in architects' specifications, instead of being in reality common as the day, and to be met with everywhere. These apologists prove, like that famous pleader we have most of us heard of, far too much, generally, for the good of their cause; managing, by a dexterous use of words and careful avoidance of reason, to prove, in the first place, that though all these things are done confessedly to imitate things better than themselves, and to pass off on the inexperienced, things mean as things precious, yet, notwithstanding, they are not in the slightest deceptive in their nature,—and it is nonsense altogether to consider them so. But,

* See p. 193, *ante*.

in the second part of the subject, they endeavour to show that, after all, though they *may be* deceptions, yet they are so very trifling and so very contemptible, and really so very immaterial, that we might have the charity to let them peaceably remain in the enjoyment of them: yes, indeed, in the "enjoyment;" for one, apparently the most learned Theban of them all, has recently found out that it is remarkably pleasurable to be deceived; and so, in order to carry out his principle, writes a long letter, evidently with the view of conferring that pleasure on mankind; though his benevolent intentions will hardly, I fear, be realized, as it will be indeed strange should the aforesaid letter deceive any but himself.

But I will cease, for I should indeed be sorry to catch the infection of some of these; and so substitute invective for argument, and assertion for reason, and strive in confusion of words and dexterous parleying to evade the question at issue: I am speaking, and wish to speak, not for party, not for men, but for truth. And I would say to all the sincere and unprejudiced, 'Choose carefully between the two. On the one hand stands Truth, firm, erect, and severe; on the other, time-serving Deception, decked out in flaunting garments, and indulging in gay and empty smiles; choose even now between the two. One offers you profit, to be reached through the path of stern good; the other dazzles with the brilliant and false light of pleasure, soon to be extinguished in noxious vapour. Yet remember this, whichever you may choose, those alone who range themselves under the banner of Truth, will possess that best of all rewards -the testimony of a good conscience, and the approval of an upright heart: they alone can hope to execute works whose fame shall be lasting, and brighter continually; they alone can hope that their works shall be handed down with praises and thankfulness, even from generation to generation: choose, then; choose even now, which of the two shall be your leader.'

And should you indeed choose Truth, give up yourself earnestly and resolutely to follow her precepts, and to do battle in her cause; for, like all good, it can be followed only by ardent watching and untiring exertion. It will be no bed of roses, but one of care and vexation, while the struggle lasts: yet persevere unto the end, and the reward is sure; and in its fulness and its joy, all traces of your former trouble and your many sorrows will be purged away, or perhaps remembered only to enhance your bliss and to increase your happiness.

EXHIBITION OF THE SOCIETY OF BRITISH ARTISTS.

The present Exhibition of the Society of British Artists consists of 744 pictures and six small pieces of sculpture, mostly busts. Although some of the old contributors are absent or but feebly represented, and there are many unmistakably bad pictures, it is nevertheless a collection of average merit. Mr. Hurlstone holds the first place: he exhibits eleven clever pictures, mostly of large size and considerable excellence. No. 145. "The Descendants of Marius and the Gracchi," two young scamps of modern Rome (very characteristic in expression), and 298, "Italian Shepherd Boy," are our favourites. The picture on which he has bestowed the greatest pains, and which is more purely an invention than the others, "The first Appearance of Columbus in Spain" (170), we like less. Mr. Salter is the most ambitious of the exhibitors in his efforts; but to desire is not always to attain. (149), "Nosegay," is nevertheless a good piece of flesh-painting. Mr. Buckner is very successful this season. His "Study from a Sicilian Exile" (410), "A Roman Head" (448), and the "Portrait of Lady Ottway" (640), are gems of the exhibition. Amongst the landscape painters (and it is in this department the collection is strongest) we must name first Mr. H. J. Boddington as having made the greatest advance upon himself; and give, for instance, No. 28, "The Lake of Tal y-Llyn, North Wales; (110) by the same painter, "At Tyn-y-Groes," in the same country, is a more elaborate picture; but we prefer the former. "A Bright Day" (53), "A Golden Morning" (338), and "Evening Prayer" (492), will not be long without purchasers. Mr. Tennant has some capital landscapes—(77), "Cwm Ogwr, Glamorganshire;" (260) "Margate Sands;" (457) "Landslip," and others. Amongst Mr. Clint's contributions is a clever evening effect, (468) "The Closing Hour of Day." (29) "Castle Cliff, Hastings;" (55) "Study from Nature;" and (271) "On the Coast of Sussex," are other good specimens of this painter's skill, especially the last. Mr. Pyne, who is painting abroad, sends a picture of mountainous country, without a name (230), with the peculiar aërial effect in which he delights. It is more skilful than pleasing.

Mr. J. Wilson, jun. deserves especial notice for his sea pieces,—truthful, breezy, and vigorous; "The Evening of the Storm" (14), "Off the Coast of North Holland" (200), and "St. Michael's Mount, Cornwall" (315), are amongst the most satisfactory pictures in the room. Mr. W. West has several cleverly painted pictures of mountain torrents, mostly wanting in gradation and air. (517) "Recollections of the Devonshire Coast" is good in effect, but is marred by the coarseness of the figures. Some of Mr. Woolmer's small pictures display much poetic feeling, but he does not advance as we anticipated he would.

(19) By C. Baxter, called "Rustics," though a hackneyed group, is nicely painted. His "Lucy Lockitt" (54) is a saucy jade and an attractive picture. (58) "Hunt the Slipper" is a highly finished group from every-day life, such as the painter, Mr. Gill, has often exhibited before. It is admirable for care and finish. Mr. J. J. Hill's "May Day" (164),—

> —— "Bounteous May, that dost inspire
> Mirth and youth and warm desire,"

although spotty, has much grace. We heard a soft voice near us say that such an amount of May-flower on May-day was mythic: the speaker forgot that it had blossomed under a painter's sun. This was bought by Mr. Wass. (134) "Near Landogo, on the Wye," by G. Cole (with a gleam of sunshine on the mountain); (275) "On the Look-out," by A. Duncan; (336) "Dead Poultry," by J. Hardy, jun. (very clever); (545) "Loch Etive, Scotland," by J. Danby; and (421) "Llyn-y-Gaden," by S. R. Percy, should not be passed over. (400) "Study of a Head," by E. F. Holt has great merit: it was purchased by Mr. Lewis Pocock. (224) "Corfe Castle," by Mr. Pettitt, reminds the spectator of Anthony, without disappointment: the sky is the least good part of the picture. The same painter exhibits a large and startling picture from the "Revelation," in the *manner* of Martin.

All the illustrations of "Uncle Tom" that we have yet seen are bad, and those in the Suffolk-street Gallery are not exceptions. (440) "Imogen," by A. F. Patten, deserves a better place than it has; and (No. 191) "Nymphs, finding Cupid asleep, disarm him," a worse. We need only further say that twenty-six pictures were sold at the private view, and six or seven have been purchased since.

TOWN CLOCK FOR BIRMINGHAM.

There are few towns in the kingdom which have been more improved within the past twenty-five years than Birmingham—the smithy of England; and the disposition to go on improving happily increases with the rising generation.

Among the recently projected plans for giving the inhabitants additional convenience, is that of a public clock, proposed to be placed in one of the most conspicuous parts of the town,—in all probability the top of New-street. Twenty designs were sent in, and from these the committee have selected one, designed by Mr. Francis Whishaw. Having in view the further ornamentation of the town, as well as the public utility of the erection to be set up, Mr. Whishaw considered that a statue of some sort would best fulfil the first-named consideration if it could be made subservient to the second or more utilitarian consideration; so he chose the subject of Hercules relieving Atlas for some time of his burden (see Virgil,—Ovid's *Met.* and Hesiod). The figure of Hercules is 8 feet high, bearing on his shoulders a celestial globe (a four-faced clock to be illuminated at night), 5 feet in diameter,—the whole standing on a massive-looking pedestal 5 feet in height.

The clock works (Shepherd's electric, as used at Greenwich observatory, &c.) are to be placed within the pedestal, which is to be kept at all times at an uniform temperature by jets of gas within, in connection with the pipe supplying gas for the globe; the shaft from the works to be carried up to the globe for the purpose of communicating motion to the hands, inside the figure, which is intended to be cast in metal, and bronzed externally, as also the pedestal.

By the adoption of the electric clock, Greenwich (railway uniform) time may be accurately transmitted to Birmingham; and, moreover, all other clocks belonging to the corporation of the Borough, may be replaced simply by clock-faces,—thus requiring attention only to the parent clock, which may be located in such case in a house in the centre of the field of horological operations. The time is not far distant when clock-power will be supplied to all the principal cities and towns of Europe as water and gas are at the present day.

As to the design, we must not let it be supposed that we approve of a project wherein the celestial globe is to serve as a clock, or a clock to be disguised as the celestial globe. We are very glad to hear of Mr. Whishaw's success: he has long been a most useful worker,—has been met by many difficulties, and we should be sorry to throw an obstruction in his path. We should be false to our principles, however, if we allowed this intention to pass without comment. Let the design be "Hercules carrying *a clock*," and we shall have nothing more to say about it.

BALMORAL.

FIREPROOF BUILDINGS.

With praiseworthy zeal, from motives of humanity, your columns have, for a considerable period, advocated fireproof construction for dwelling-houses: the late conflagration at Windsor Castle, not to speak of the annual destruction of a thousand houses in London alone, proclaim the justness of your views, but there is a difficulty to arouse the public to adopt a novelty, even when the benefit is incontestible. In remote times, when London was even more wooden than it is at present, legislative compulsion was necessary to induce people to build with stone or brick,—so adhesive is habit. If Humane Societies were to offer a prize for the best mode of erecting houses which would be incombustible, many improvements might be suggested, and the objections to the actual manner of fireproof construction removed. But fashion, we all know, has a powerful influence; and if the new residence at Balmoral were to set the example for country houses on this secure plan, many a disaster would be escaped: and it would operate as an additional inducement to an architect to transmit his name to posterity in imperishable works if he could say, "exegi monumentum *ligno* perennius."

W.

*** Our correspondent will have his desire: the floors of her Majesty's new residence at Balmoral are to be made fireproof, on Messrs. Fox and Barrett's principle, with cast and rolled-iron joists. We have not given our readers any particulars of this intended building, believing that silence at present will be more agreeable to Those interested in it; but we may briefly mention that it will be of considerable size, and will have more the character of a private gentleman's country residence than a *palace*, in the popular sense of the term. It is to be in the Scottish Baronial style, and the chief architectural feature will be a large square tower, detached from the main building.

The Patent Office Library and Museum of Inventions.—An address has been presented to his Royal Highness Prince Albert by many of the most influential inhabitants of Manchester, thanking him gratefully for the valuable suggestions and propositions made by his Royal Highness for the formation of a Library and Museum of Inventions in connection with the Patent-office, and soliciting his advice and aid in carrying out the project. In reply, it has been announced that a committee has already been named by the Royal Commissioners for considering the best mode of effecting the object in view.

CROCKET, FLORENCE CATHEDRAL.



DETAILS, FLORENCE CATHEDRAL.

We have engraved a drawing of one of Giotto's windows in Florence Cathedral, with the details, and shall give them in an early number. Above is one of the crockets at large.

WOODS AND FORESTS.

Auguring from prognostics set forth by surveyors employed under the Right Hon. the Commissioners of Woods and Forests, nothing can be more flattering than the calculations of returns from forest timber, because in the management of land nothing can be more profitable.

The area of computation extends over twenty years as to larch, and over forty years as to oak and chesnut plantations; at the same time, most descriptions of timber are comprehended in the growth of these national nurseries for seventy-fours.

It is recommended, according to the nature of the soil, to plant larch or Scotch fir, or oak or chesnut, to drain and thin out annually all the plantations; and thus, by selling the surplus, to give free scope to the remaining trees, which are of course to increase in reduplicated value, just in proportion to the quantity taken away, and to the value realised, or predicted so to be.

The surveyors, verderers, woodmen, &c. are to be of a wholly different character from their antecedents in office; they are to receive pay and salaries, it is true, but an annual profit is to be assuredly derived from the woods, and still a progressively increasing value is to be realised also in the standing timber, so that at the end of the cycle it is not only to repay the fee-simple purchase of the land, but to leave an incredibly large surplus for naval stock!

These theories being as yet untried in Government domains, the calculations are speculative, or if not set down as visionary, they are at least problematical. Not that practical and competent men would give a delusive estimate as regards the ascertained growth and increase of woods; but there must always be allowed a wide margin between the probable results of public and private enterprise.

A visit to the Bagshot nurseries in the ensuing month would convince any observer of the vast difference in this respect between Wood and Forest, and seedsman and florist, cultivation; whatever is done in the latter is performed in the most scientific and the most economic manner; the ground is of value, and must be made productive; the character of the establishment is the staple of trade, and it must become distinguished; and the consequence is, that for vigour of plant, taste and beauty of arrangement, and floral profusion, no nurseries of the terrestrial globe can offer anything comparable to these gardens. All descriptions of indigenous and acclimated trees and shrubs are there classified, and what is most miraculous is, that all can be there purchased at a cheaper rate than the same can be grown at home.

The stimulus of an arbitrary power at Whitehall has not certainly been tried upon the Bagshot system of propagation; no decree under the royal seal is there issued for clearing and planting—for thinning and cutting down; nor, if a review be taken of the profit, loss, and success attendant hitherto on royal forests, is it in the least desirable. The condition of the numerous and extensive woods under Government control is so wretched and unsatisfactory (however *promising*), that no judge of plantation could ever expect benefit from a continuance of the system.

It may be that those oak and chesnut plantations which on the Crown lands are now in a favourable condition, should be retained and tended; but it never can be an object to the State that Government officials and national funds should be expended in planting larch, fir, beech, and faggot wood as a public speculation. It must ever be, as it has been, that private enterprise will outstrip salaried indolence; and that the commissionership system of farming has just as much chance of beating John Bull out of the field, as has the system of growing copse or firewood against the same competition.

Neither our larch (the best home-grown timber), nor our fir, nor beech, nor other indigenous wood is of any use for ships of any navy; none other than oak and chesnut is of the slightest utility for that object.

One of the estimates taken from the *official report*, as set forth by Mr. Brown, of Armiston, Edinburgh, relates to the Chopwell-woods, Durham, consisting of 779 acres. As the advice of Mr. Martin (surveyor for Lloyd's) had been sought for on the practical question of "the suitability of the timber felled for the navy in Dean Forest," so Mr. Brown's judgment was called for on the speculative clearance, replantation, and management of the Chopwell-woods, in Delamere Forest.

The prospective valuation, as drawn by this gentleman, estimates the value likely to be realized from the above 779 acres of land to be planted with larch in 1854, as follows, the trees to be 4 feet apart:—

Number of trees planted, 2,103,300.					
In 1864, thin out, 500 per acre, 389,500, at 1d.	£1,622	18	4		
Deduct expenses	540	19	5		
				£1,081	18 11
In 1874, thin out, 600 per acre, 467,400, at 6d.	11,685	0	0		
Deduct expenses	2,921	5	0		
				8,763	15 0
In 1884, thin out, 200 per acre, 155,800, at 2s. 3d.	17,527	10	0		
Deduct expenses	2,190	18	9		
				15,336	11 3
In 1894, thin out, 100 per acre, 77,900, at 7s 6d.	29,212	10	0		
Deduct expenses	3,651	11	3		
				23,370	18 9

These decennial thinnings, together with cutting at intervals of five years, in the years 1769, 1779, and 1789, are made to amount in twenty years to the astounding value of 78,267*l.* 2s. 7d.! whilst the crop left standing is computed at 163,590*l.*!! the aggregate worth of the whole being 241,857*l.* 2s. 7d.!!!

Strong temptation this for the Government to embark in the speculative nursery trade. If such vaticinations were realized, there is no telling to what extent experimental planting and farming might be carried. The whole *quarter million* acres of Crown lands alone would constitute the richest exchequer in the world. The success and prosperity whereof would induce, of course, practical farming, and the ploughing up of all the downs for the supply of wheat, and even of mutton, to the national army and navy; for why should not a board of State officers also supply their own flour and kill their own mutton? There are, however, a few items left out of consideration,—namely, the expenses of staff officers, placemen, and operatives, and these might in the end make an open market the cheaper one.

The cultivation of oak timber for the navy, the sustentation of the reserves now enclosed, and the planting of even more in suitable places, is another question. This comes properly under Government care; but if the useless wastes and extra forest lands were sold, an establishment costing the State 20,000*l.* a year could not be required. The lands disafforested and sold would produce several millions, and the reservation of 50,000 acres would produce ample supplies for the British navy.

Some extracts from a manuscript written about the year 1803, given in the report, as having emanated from the great Lord Nelson, may convey a pleasing *melancholy echo*:—

"The Forest of Dean contains about 23,000 acres of the finest land in the kingdom, which, I am informed, if in a high state of cultivation of oak, would produce about 9,200 loads of timber fit for building ships of the line every year; that is, the forest would grow in full vigour 920,000 oak trees."

"Of the waste of timber in former times I can say nothing, but of late years it has been, I am told, shameful." Having enumerated the abuses of leaving trees cut down in swampy places, to rot and be carried away; of contractors cutting trees for the advantage of carriage, "whereby

the invaluable crooked timber is lost for the navy;" of forest-tree miners digging where they pleased for coal; of the surreptitious inclosure of pieces of ground; of the maiming and cutting trees of full growth "just above the ground right through the bark, when the tree becomes a perquisite, or is allowed to be taken away by favoured people;" the never-forgotten but *ungratefully* remembered hero proceeds:—

"These shameful abuses are probably known to those high in power. I have gathered the information from people of all descriptions, perfectly disinterested; but knowing the abuses, it is for the serious consideration of *every lover of his country*, how they can be done away."

If the Forest of Dean is to be preserved as a useful forest to the country, strong measures must be pursued. First, the *guardian* of the support of our navy must be an intelligent, honest man, who will give up his time to his employment. Therefore he must live in the forest, have a house, a small farm, and an adequate salary.

Number of trees that such land as the Forest of Dean may contain (per acre) at different periods from their being set:—

Trees distant from each other.	Years after being set.	No. of trees in an acre.	No. of trees to be thinned.
6 Feet	10	1200	...
10 ,,	20	430	770
15 ,,	40	190	240
20 ,,	60	100	90
25 ,,	80	60	40
30 ,,	100	45	15"

This document shows the aptitude of mind for business, and the *amor patriæ*, which, devoted to the naval service, swept off his country's foes, but which, if employed in a civil capacity, would have swept out the augean stable of official corruption.

In these remarks the money value of timber and plantation is not alluded to, but from the calculations made (and these, modern usage has not much altered), the enormous amount in value of standing timber in the various forest reserves is easily conceivable. The above table refers but to the Forest of Dean (about 23,000 acres) of which only a portion was reserved for navy oak. The New Forest has little short of 30,000 acres so reserved; then follow all the others, say at least, as much more.

What need then for wastes or Deer Forests? None but to employ and salary officials, and to create patronage! By narrowing the cares of office, the essential duty of purveying *ship timber* would be easier of performance and better attended; by disposing of superfluous lands, the requirements of society best consulted and provided for.

Able and scientific practical men but rarely possess parliamentary influence, without which no appointments of high trust are conferred: such men usually enter into the employment of public companies or private capitalists. The incapables who have influence are thrown upon the State: habitudes may transform these into clerks, but red-tapeism is not competence.*

QUONDAM.

MOUNT PARNASSUS IN THE HAYMARKET.

MR. WEBSTER having surrendered this theatre, after a reign unexampled for length and for faithfulness between manager and actors, has been succeeded by Mr. Buckstone, the well-known and popular actor and author, who opened the house on Easter Monday, with an *à propos* invented and written for him by Mr. Planché, entitled "Mr. Buckstone's Ascent of Mount Parnassus." It is called in the bills an "Extravaganza," but is in truth what the French call a *Revue*. Resulting, as it were, from one of the most successful entertainments of the season, it introduces pleasantly the other principal hits of the day, the duel-scene from "The Corsican Brothers" (admirably done, with an extraordinary imitation of Mr. C. Kean's voice); "Gold," from Drury-lane; "Huguenots," from the Italian Opera House; and "Uncle Toms" from everywhere. In the ascent we of course tread classic ground, and a capital opportunity is given for scenic display. Parts of the panorama, the work of Mr. Charles Marshall, are charmingly painted, particularly the General View of Mount Parnassus, with the Village of Krissa and its acropolis at the foot; but the rest of the scenery—fortunately, perhaps, for the author—is not so overwhelmingly good as to enable good-natured friends to attribute to that the whole success of the piece; and successful it certainly was,—uproariously so, and most deservedly. It is scholarly, witty, poetical, and effective; and those who were engaged in it, Mr. Buckstone himself, Mrs. Fitzwilliam, Mr. William Farren, Miss Louisa Howard, and others, felt the advantage of having good things to say, and acted accordingly.

The introduction of the "Frantic Orgies" of Pan and the Nymphs is a good thought, and might be made more of. We remember a Dionysan or Bacchic dance in a piece by the same author, some years ago, wherein all the mad joy and extravagant merriment which characterised the Dionysia,—the female devotees dressed as nymphs, with the thyrsus, and the males as fauns and satyrs, with the wine cup and ivy,—was given with extraordinary effect. The myth which these festivals embodied is full of poetry and interest: true, the absence of all restraint, the license permitted at them, did ultimately lead to the most frightful excesses; but this was comparatively late in their history. The satyrs and nymphs by whom the god was surrounded are the steps, says Müller, through whom life seemed to pass from the god into vegetation, and branch off into a variety of beautiful or grotesque forms. The desire of escaping from self into something new, of living in a world beyond the present, attaining an Ideal, felt in all ages,—breaks out in these festivals, and in them too we must look for the origin of the regular drama. Numerous have been the learned disquisitions to establish the characteristics of the four varieties of these festivals, and doubtless the moralist has not forgotten to remind Inexperience that the wand carried by Bacchus with its fir-cone termination (the thyrsus) had often, according to one of the fables, an iron point in its head of leaves.

We must return, however, from Bacchus to Buckstone, that we may say to the new manager, in the words of the first song of his new piece,—and we do it heartily,—"*Au revoir! au revoir! Bon succès*, and *bon espoir*."

LODGINGS FOR THE DIGGERS.

A FEW days ago we entered the grounds of Clift House, Bristol, where Messrs. Acraman, Morgan, and Co. formerly carried on their extensive operations, and at first sight fancied we had discovered a new settlement. Scores of snug, compact, uniform little dwellings were ranged side by side, and larger constructions were in progress. It turned out that we had stumbled upon Mr. Hemming's manufactory of portable iron houses for emigrants.

The houses, which are simple in construction, and efficient in arrangement, consist of a timber framing. The walls and roof are of galvanised corrugated iron. The walls are lined in the inside with half-inch boarding, covered with canvass, ready for papering, leaving a space of 3 inches throughout the entire building between the iron and the wood-work, by which means a complete ventilation is effected, and the temperature in summer much lessened, and increased in winter, or the framing may be filled in with sun-dried bricks.

The ceilings are of canvas with felt above, ready for papering.

The erections are entirely put together with iron screws and bolts, and may be put up by any inexperienced person in a few hours, every part being carefully fitted and lettered.

The cost of a two-roomed cottage is 50*l.* and a cheaper sort is made for 35*l.* The furniture costs 10*l.* The shutters are arranged so as to serve in the day as sun-blinds. The houses pack very compactly to save freight, the box forming 100 feet of inch flooring. Mr. Hemming has in progress a lodging-house 114 feet by 46 feet, with 14 bed-rooms and 56 beds. It includes two sitting-rooms 20 feet by 20 feet, luggage-room, and other apartments. The cost of this, with furniture complete, but exclusive of freight, will be 1,500*l.* A parsonage-house has been commenced for the Bishop of Melbourne, and a church is ordered for the same place, 72 feet by 48 feet, with 600 sittings. The cost of the church, including pulpit and fittings, will be about 1,000*l.*

The undertaking commenced with an endeavour to make a light portable house for a son about to emigrate, and now Mr. Hemming employs some hundreds of workmen.

THE GRAVEYARDS.

AN inspection of all the graveyards of the metropolis is being made by direction of the Home Secretary, and we may expect to hear immediately of orders to close several of them. Notice has been given that burials are to be discontinued in the Roman Catholic burial-ground of St. John the Evangelist, and in the New Bunhill-fields burial-ground, in the parish of St. Mary, Islington, after the 31st day of December next.

The inhabitants of St. Pancras have determined on the purchase of land for a cemetery for that populous parish.

Although we do not pretend to record all the results of efforts for improvement or advantage made in the *Builder*, we may mention, with reference to our article respecting St. Giles's burial-ground in the Pancras-road, that it drew upon us some abuse, on the plea of exaggeration. A meeting of the parochial commissioners was called to consider the statements it contained, and the belief expressed was that they were untrue. A committee was appointed, however, to inspect, and on their return, as we understand, they fully confirmed the truth of our remarks, and made a new set of regulations for the guidance of those entrusted with the care of the ground, with what real advantage, however, we have yet to learn.

With reference to *burying in concrete*, an architect says that this plan was adopted by him several years ago, in the Norwood Cemetery. A bed, six inches thick, was laid in the bottom of the grave immediately before the funeral, and after the service, concrete, already prepared, was filled in at the sides and above with a layer also six inches thick. He says:—

"I had, before long, to do the same thing again, except that the bottom bed was not found necessary. The previous concrete had become a perfectly sound stone coffin or case to the wooden one."

Such a course is preferable to the guilty absurdity of piling up coffins under the floors of our churches, but is not to be recommended for general adoption.

FALL OF A RAILWAY BRIDGE.

THE arch of the bridge over Dragley-beck-lane, leading from the Ulverston extension of the Furness Railway, and forming a portion of that part of the Ulverston and Lancaster Railway that runs through Ulverston, gave way on Wednesday morning, blocking up the highway. According to the *Lancaster Guardian*, it is a flat arch of about 40 feet span, built on the skew, with brickwork in mortar and stone quoins. The arch separated longitudinally square with the road, and as nearly as possible in half, and shortly afterwards the remaining half fell, leaving the stonework on each side still spanning the road. Happily no one was passing at the time of the accident, or the consequences might have been attended with fatal results. The engine and a train of empty waggons behind her had just cleared the bridge,—so little, in fact, that the stoker and breaksman jumped off in alarm, and the driver turned on more steam to get out of danger.

This form of arch is very commonly adopted, namely, stone quoins or *vousoirs* and a brick interior; the stones setting 12 or 18 inches thick by the full depth of the arch; the bricks setting only four to the foot, and the ordinary 4½ inches bed: so that in one case there are five beds of brickwork to two of stone, and in the other case seven beds of brickwork to two of stonework. If the mortar is bad or shrinks in

* NOTE.—In the last article on "Woods and Forests," *two gamekeepers* should have been set down at 50*l.* 10*s.* and not 5*s.* 10*s.* for their half-year's salary. The sum total of the charge was, however, right.

the least, the bridge must become dangerous, and such work is ever weak. Architects and engineers cannot be too careful in preserving one uniform depth of bed in all classes of work, or the mortar must be of the best description, and the several beds to make up the level of the quoins or *vousoirs* must be set down close. Cement should be used in bridges having little rise; and if the bricks are set in concentric rings some form of bond, hoop-iron, or stone, should be used at short intervals, so as to work the whole into one solid mass. Separate 4½-inch rings of brick, in arches of spans above 30 feet, unless set in the best cement, are apt to part, and become, to the danger of the work, separate rings indeed.

THE COMMISSIONERS' PLAN FOR THE DRAINAGE OF LONDON.

A SLIP of the pen in our statement last week of "The Position of the London Drainage Question," made "low" of what should have been written *high*, as the state of the tide at which a sewer should discharge itself into a tidal river to carry the emitted matters down with the whole of the ebb. Most of our readers will have already corrected this for themselves.

The correction of another error would not so readily suggest itself, for it would be as difficult for our readers to imagine as it was for ourselves to believe, that it is the base-line of the *invert* of Mr. F. Forster's high level or intercepting sewer (a hollow cylinder of not less than 8 feet clear internal diameter), and not the *crown*, as we said, that is laid down at a few inches below the surface of the rails of a railway to be crossed, and under circumstances, too, which seem to preclude alike the raising of the rails the required 9 or 10 feet, and the use of a dip or bend in the sewer to pass it under them.

RUSTY IRON.

OBSERVING that not any notice has been given in your valuable journal in answer to the inquiry put by B. G. who is desirous of learning the most effectual mode to prevent his ⅝ rod-iron fence from being entirely destroyed by rust, I beg to inform him, the cure for iron sickness is to have it galvanized (which means coating it with zinc).

The metallic contact between the zinc and iron immediately suspends the destruction going on with the latter, because the zinc is lowest in the scale, and is the more easily oxidized of the two. This plan was well known to Sir Humphrey Davy, and has been lectured on by Professor Brande, of the Royal Mint. I write from my own experience, having had some rusty garden tools galvanized, that have since been four years in use, and are quite perfect.

B. R.

In the *Builder* of the 19th ult. "B. G." inquires what he shall do to stop the corrosion of his iron fence. After an experience of near sixty years, I have also found there is no means of stopping corrosion in malleable iron, from rusting, but filing perfectly free from all the scales and rust, and immediately giving it a good coat of paint, composed of good strong boiled oil, with red lead, and a small portion of genuine vegetable lampblack, before any more damp come in contact with the iron.

I would advise that all iron for fencing, or other external purposes, should be perfectly free from corrosion, and should be painted before it is exposed to the atmosphere, as a preventive to corrosion,—whether malleable or cast iron. I know, from experience, that when once it is corroded, it will work the destruction of the iron by corrosion under the best painting that can be used. It would be well if all malleable iron, whilst it were hot from the forge, were immersed in good strong boiled oil, and carefully put in some *dry place* until it were perfectly dry, before it was used for fencing; and also all castings, after they were what the workmen called cleansed, had a coat of paint, as above, of red-lead, &c. or other colour, as may suit; for after finishing, in that case, there would be little fear of corrosion.

It would be well if architects would adopt this hint in their specifications, for the good of their employers. CLERICATUS.

ROMAN CATHOLIC CATHEDRAL AT DERRY.

THE works of the Roman Catholic Cathedral at Derry are progressing according to the plans of Mr. M'Carthy, architect, and under the superintendence of Mr. Whelan, contractor for the Ulster branch bank of Derry. The masonry is built of Mica slate. The dressings are of granite from Newry, and the internal dressings &c. are of Scotch sandstone. The nave is 120 by 30 feet, and the north and south aisles 120 by 18 feet each; the chancel 40 by 30 feet; chapel of the Blessed Sacrament 30 by 18 feet; south porch 17 by 14 feet. At the west end of the nave is a tower 18 feet in clear, walls 7 feet thick; and at the north-east of north aisle are sacristies. The style is Gothic, of the Early Perpendicular period. The east window of chancel is about 25 feet in width by 50 in height, and has nine bays. The east windows of side chapels are 12 feet wide and 25 feet high, with four bays. At the angles are buttresses with moulded weatherings and terminated by octagonal crocketted pinnacles. The aisle and clerestory windows have three bays, with buttresses between them; and the parapets are perforated and moulded. On the west elevation a great double door with deeply moulded jambs forms the entrance to tower, and over this is a large window 16 feet wide and 38 feet high, with five bays.

The third stage of tower contains a series of niches for figures, and the fourth stage elaborate belfry windows and panelling, with buttresses terminating in pinnacles. The whole is surmounted by a spire with windows at intervals, the total height being 300 feet. The nave is separated from the aisles by piers and arches (seven bays on each side). The piers are octagonal in plan, 24 feet high; and from ground to crown of arches is 36 feet. The chancel is divided from nave by a deeply-moulded chancel-arch 61 feet high to crown of arch. The side chapels are separated from aisles by moulded arches 27 feet high. The roof is to be of open timber-work, similar to that (described in the *Builder*) of St. Catherine's, Meath-street, Dublin, designed by the same architect. The works are up to the level of the sills of aisles' windows, a height of about 12 feet.

IRISH NEWS.

THE Directors of the Midland Great Western are about to proceed immediately with the construction of the branch lines from Mullingar to Cavan and Longford. The total length is about fifty miles, and tenders from contractors have been invited. Mr. Hemans, engineer-in-chief.

The newly erected church near Portadown has been consecrated by the Lord Bishop of Down and Connor.

It is expected that the electric wires will be at work on the Great Southern and Western line in a short time: Messrs. Fox and Henderson, contractors. Belfast and Galway are, it is stated, to be put shortly in connection with the English lines by the submarine telegraph from Donaghadee to Portpatrick. Messrs. Newall and Co. contractors.

The Limerick and Ennis line is to be proceeded with, the grand jury of County Clare having resolved to guarantee the interest on 75,000*l*. Messrs. Kinder and Johnston, contractors.

Nearly all the buildings on the Kells extension line have been contracted for: the laying of the rails has commenced. Messrs. Killen and Moore, contractors.

The Cork Athenæum is to be situated between Halfmoon-street and the eastern enclosing wall of the Cork Institution: tenders are invited.

We are told that a new quay is to be erected at Dundalk, and that St. Helen's quay, and a tract of waste land adjoining, have been purchased by Mr. Russell for the purpose.

The "Monster House" competition at Dublin has caused a stir in the building trade: the new mart in Sackville-street (of which we have spoken previously) is progressing; Messrs. Todd, Burn, have determined on further alterations, and Messrs. Mc'Birney and Collis are also extending their premises. Mr. Beardwood is the contractor.

The intended floating-dock at Cork, which is to cover an area of six acres, is to be commenced immediately by the Great Southern and Western Railway Company. An outlay of 50,000*l*. is proposed. Other building works in Cork and the neighbourhood are in progress and projected.

The great wooden bridge over the river Suir is completed: it is stated to be 567 feet wider than that at Waterford, but the river is divided by an island at the point where the Waterford and Limerick line crosses. At the Kilkenny side, a drawbridge has been constructed by Messrs. Mallet of Dublin. The stations on this line are in progress of completion, and the different bridges are nearly finished.

Improvements in Connemara are talked of. We are told, Mr. Webster, architect, has designed the laying out of a portion of the shore with villas, for the purpose of making this an attractive watering-place. We would suggest to the new "purchaser" not to disregard the comforts of the labouring classes, who, in this locality, are well known to be in a wretched state of poverty.

PROVINCIAL NEWS.

Louth.—At a recent meeting of the Lincolnshire Architectural Society, designs for new roofing, flooring, and seating the Church of St. John, Yarburgh, were submitted by the rector to the committee. The design comprised also the erection of a vestry, and the opening out of the chancel and tower arches—the former now blocked up by the chancel ceiling and an unsightly plaster partition, and the latter by a cumbrous and useless gallery. The repair of the chancel includes new east window, roof, and interior fittings. The church is to be warmed by hot-water apparatus placed under the vestry, the flue terminating in a chimney. The principal portion of the expense will be borne, it seems, by Mr. Yarburgh Yarburgh, lord of the manor. The works at the chancel will be carried out by the rector, and the vestry will be erected at the cost of his father. Designs for rebuilding the Church of St. Mary Magdalene, at Hogsthorpe (at which church considerable works are in progress and contemplation), intended to be executed by the lay-rector, were also submitted and approved. Messrs. Maughan and Fowler, of Louth, architects, are intrusted with the restoration in both.

East Keal.—The steeple of East Keal church, which has long been in a dilapidated state, from old age and decay, lately fell to the ground, forcing the earth up into an embankment three or four feet high, and, by the top alighting almost perpendicularly, a great portion of it is embedded some feet in the ground. The body of the church, which is also fast decaying, has been considerably shaken by the fall, and has had to be shored up; and the whole of the edifice, it is expected, will have to be pulled down. Some workmen, employed in repairing the steeple by inserting additional ties to the structure, had only left the building three hours previously to the occurrence, and were to have resumed their work on the day following.

Long Sutton.—It was expected, that when the new bridge here should be finished, no accidents would occur, as was frequently the case when the old bridge stood. But notwithstanding that the new bridge turns aside, instead of upwards, and there is much more room, vessels sometimes still do serious damage. The reason is, that the curve of the river at the spot where the bridge is constructed, sets the tide on one side, so that vessels become unmanageable.

Sonning.—The renovation of Sonning church is approaching completion. A carved covering for the font has been presented to the church, and the open roofs of the side aisles are nearly completed,

Oxford.—The new baths and washhouses are again ready for occupation. Various means and arrangements, it is said, have been made for the purpose of preventing the possibility of another accident, by explosion or otherwise. Amongst these we remark is a "patent self-acting alarm whistle" in the boiler, which announces either

an excess or a deficiency of water or steam. The tank by which the boiler and the whole establishment are supplied with water stands on the roof of the building, and is supplied from the City Water-works. The drying-frames, or "horses," for the washing establishment, are now made of galvanized iron instead of wood, which was liable to warp. The baths are twenty in number, comprising six first-class and eight second for men, and three first and three second for women.

Kidderminster.—It is proposed to erect here a public building suitable for musical purposes, lectures, corn exchange, &c. A meeting to consider the project has been announced.

Ledbury.—An altar-tomb, to the memory of Lady Margaret Maria Cocks, has just been completed by Mr. Poole, of Westminster. It presents a novelty in this branch of art. The material employed is Cornish serpentine marble, which has been profusely used in the lately rebuilt church of Eastnor, for the mortuary chapel of which the tomb has been designed. This stone takes a high polish, is rich in colour, and makes a ground for the mosaic cross which is inlaid on the top. The cross has fleury terminations, plinth and stepped base, in gold, blue, red, and white glass; the base and terminations being in brass electro-gilt. On the splayed edge moulding of the tomb is a verge of brass. The legend is in raised letters on a black ground:—"In memory of the Lady Margaret Maria Cocks, only daughter of John Somers, first Earl Somers, who died the 10th May, A.D. 1849, in the humble hope of a joyful resurrection. 'Her life was hid with Christ in God.'"

Birmingham.—The foundation-stone of a new chapel in connection with the Wesleyan Methodists, was laid on Monday in last week, at the corner of Benacre-street, in the Bristol-road. The chapel will cost 4,400*l.* and contain 1,200 sittings, a large proportion free. The architects of the building are Messrs. Wilson and Fuller, of Bath; and Mr. Upton, of Birmingham, is the builder.

Wolverhampton.—As a substitute for the Orphan Asylum in Queen-street, erected and supported by Mr. J. Lees, a larger building, and one of more architectural pretensions, is being now erected on Goldthorn-hill, south of Wolverhampton. The old asylum accommodates only fourteen boys and three girls; the new one is intended for fifty boys and thirty girls, of all England. The cost of the building, will be 6,000*l.* towards which sum 4,000*l.* are already promised, and the institution will be supported by subscriptions—the subscribers having power to elect to its benefits. On Tuesday in last week the corner-stone of the new asylum was laid. The new building will be in the Elizabethan style, having a projecting entrance with wings and projecting extremities, and a bell tower surmounting the central portion. Mr. Joseph Manning is the architect, and Mr. John Elliott the builder.

Chorlton-upon-Medlock.—The chief stone of a new church, to be erected at Shakspere-street, Stockport-road, Chorlton-upon-Medlock, and dedicated to St. Stephen, was laid on Thursday in last week. The church is to be built of stone, in the Geometric Decorated Gothic style, from the designs of Mr. E. H. Shellard, of this town. It is to consist of a nave, measuring 80 feet 7 inches by 40 feet 10 inches internally, and two transepts 25 feet 10 inches wide, and projecting 19 feet from nave. There is to be no chancel, and each transept is cut off from the nave by a two-centred arch 23 feet wide. At the south-east corner will be a tower of three stages, 18 feet 3 inches square, without buttresses, and 56 feet high, finished by pinnacles and cornice, and supporting a spire 69 feet high from base to top of vane, making the total height of tower and spire 125 feet. The principal front will be to Milton-street, and it will consist of the tower (through which is to be the main entrance, and a window of five lights, with ornamental tracery in the head. The internal arrangements will accommodate about 1,000 persons, about one-third free. The transepts are covered by galleries, supported on light iron columns. The roof timbers will be open and stained, and all the wood-work of the pews, which are very plain in character, will also be stained. The cost of the building is to be about 3,000*l.* According to the *Manchester Courier*, it is also contemplated to erect a parsonage, at a cost of 1,000*l.* on one side, and commodious schools on the other.

Preston.—The Temperance Association here have decided to erect a new building, to be called "The Public Hall and Temperance Institute." Land has already been purchased in Chadwick's Orchard. The proposed extent of the building is 20 yards by 32; the basement is to be composed of shops to the front, and the other parts occupied as a school-room, reading-room, committee-room, &c. The hall is to extend over the whole, and to seat 1,500 persons. The estimated cost of the building and outfit, independent of land, is about 2,500*l.* Towards this several sums are already promised, and in furtherance of the object in view a public meeting was convened at the Exchange Rooms, on Wednesday in last week, when appropriate resolutions were unanimously come to by a numerous meeting.

Leyland.—The chief stone of a Roman Catholic chapel was laid here on Good Friday. Mr. Holland, of Leyland, is the contractor for the building, the dimensions of which, as at present laid out, will be 60 feet by 40. The chapel is to be dedicated to St. Mary.

ST. GEORGE'S CHURCH, DONCASTER.

The destruction of Doncaster Church, which took place on Monday, February 28th, has been very generally felt as a great calamity. It would be difficult to describe the sorrow which is expressed in the immediate district,—a sorrow creditable to the country. A long and careful inquiry into the origin of the fire has been made under the coroner, Mr. Lister, and at the end of the seventh day the jury gave the following verdict:—

"In the absence of more conclusive evidence, the jury find that the actual origin of the fire is involved in mystery—that it was accidental; but they incline to the opinion that the probable cause may be assigned to the state of the north flue, the defective and unsafe construction of the heating apparatus, and particularly the negligence and inattention of those who had charge of them. The jury cannot close their inquiry into this awful visitation without strongly impressing upon the town-council the lamentably defective supply of water—the want of sufficient fire-plugs, and another and a more powerful engine, with sufficient hose for sudden emergencies."

It is to be hoped that the *custodes* of other churches will take warning by the lamentable destruction here, and direct such attention to be paid to the flues as may, at any rate, lessen the chance of conflagration. When ruin is accomplished, grief is of no avail. A very small amount, at the right moment, of the energy and willingness to make sacrifices which have been exhibited in Doncaster since the disaster would have prevented the necessity.

Our readers will see by the engraving which accompanies this notice that the church was mainly of the Perpendicular period, and that the tower was its finest feature. It is thought that originally this served as a lantern, open to the body of the church. In a report by Mr. Ferrey, in April, 1852, suggesting several alterations, this part of the church is thus spoken of:—

"*The Tower.*—This may properly be termed a lantern: the large windows in the design of the upper part could never have been intended to light the belfry only; for such a purpose they would have been out of all character. The well-executed finials of the ogee-headed labels over the tower arches; the figure carrying a shield with armorial bearings, now intercepted by the ringing-floor,—all prove that these ornaments were intended to be seen, but at present they are completely in shade by the position of the ringers' loft. It would give great dignity to the church if the ringing-floor were removed and the fine tower windows permitted to shed their light into the centre of the transept. The large bells now filling the tower are of later date than the tower itself. In all probability, a few bells only, and those of less weight, occupied the lantern when first constructed. These could be easily chimed from the body of the church. In order to ring the present musical peal of bells, I should suggest the construction of a corbelled stone gallery around the walls of the tower, placed a little lower than the existing belfry floor. This gallery would be similar in effect to the gallery in the centre tower of Durham Cathedral, and it need not project more than 4 feet, as this would afford sufficient space for the ringers; and by this arrangement the handsome windows of the tower would be visible from the body of the church."

The dimensions of the church were, internally, from east to west, extreme length, 153 feet; extreme width in the transept, from north to south, 85 feet 6 inches; width of nave and aisles, 67 feet 2 inches; height of the tower to the apex of pinnacles, 140 feet; height of the nave from floor to panelled ceiling, 52 feet. The church was built of magnesian limestone, upon which the fire acted powerfully.*

From a will published by the Surtees Society it appears that money was left in 1393 for building the west window (a very fine specimen of the style); this fixes the date of the building with tolerable accuracy, and is borne out by the fact that money was also left for Howden Tower, the arrangement and design of which have many things in common with Doncaster. Tickhill is also mentioned, and this again has an open canopied battlement resembling that at Doncaster. We may presume, therefore, that the rebuilding of the church commenced at the end of the fourteenth century, that it proceeded gradually, and that, with the exception of some Early English remains of the previous church in the chancel, and some bad late work on the north side, it is of one period and probably from one hand.

The piers of the nave (two of which were restored under Messrs. Hadfield and Weightman three months since) are octangular and massive, built of small wall stones and filled with rubble. The caps are very like Early English mouldings. It may be that these formed also part of the Early English church: the arches were very flat, and of two orders—plain chamfered. Altogether, the interior disappointed the expectations raised by the exterior, though the central piers and arches were grand and simple—well-proportioned,—the arches being equilateral. The north transept had a 7-light window, which was so choked up by a huge gallery that it is seen, perhaps, better in its ruined state than before the fire.

The plan of the church, it will be observed, is cruciform, arranged almost precisely like Rotherham and Sheffield, both in the deanery. There was a very fine rood-screen which, however, had been barbarously treated about thirty years ago: it was of oak, with the rich fan-groined cornice so frequent in perpendicular rood-screens.

The charm of the old church consisted not in any particularly fine detail, but rather in the grand size and light and fair proportions of the central tower: this gave to the group a cathedral-like effect, and induced a belief that the church was larger than it really proved to be.

At the north-east angle of the tower was a quaint staircase, circular on plan, corbelled out, and fitting in, as it were, between the angle buttresses—very beautiful, and so strong that it is the only fragment left of the church. Doubtless, when the *débris* shall have been cleared away, many interesting evidences will be found of the former church. There is an arch 6 feet wide on the south side of the chancel, with nail-head enrichment round it, which appears to have been over the sedilia; there is also, in the north wall, an aumbry. The rubble-work of the Early English portion is remarkably perfect, and has been exceedingly well done. If it be correct that the castle from which Doncaster takes its name stood upon the site of St. George's Church, some of the stones of the old castle may now perhaps be found.

It seems to be generally agreed that it is desirable to keep tolerably close to the original model, but to alter and improve in detail. Central towers or lanterns form the distinguishing feature of Yorkshire churches,—as much so as the lofty western towers of the churches of Suffolk and Somerset are characteristic of those counties,—and Doncaster afforded one of the best examples of these central towers.

At a meeting which was held in Doncaster on the 29th ult.—whereat the Queen unexpectedly evinced her sympathy with the town by sending 100*l.*—the rebuilding of the church was determined on, and subscriptions amounting in the whole to 17,700*l.* were announced. The cost is calculated at 40,000*l.* exclusive of organ and stained glass.

* A good engraving of the church was published in 1828, from a drawing by Mr. Weightman.



THE LATE CHURCH OF ST. GEORGE, DONCASTER.

CAUTION TO PAPER STAINERS.

INJUNCTION UNDER COPYRIGHT OF DESIGNS' ACT.

Hubert *v.* Paynter, before Vice-Chancellor Sir W. P. Wood.—In this case the plaintiff, of the firm of John Woollams and Co. of London, sought to restrain Thomas Paynter, a paper-hanger and stainer, of Cheltenham, from printing imitations of a certain paper-hanging, the pattern or design of which was the registered property or copyright of plaintiff; and also that an account might be ordered to be taken of all the defendant had fraudulently made of the said pattern. The injunction was granted, *with costs;* the blocks and stock to be given up to be destroyed.

GAS.

A paper on "Warming, Ventilating, and Cooking by Gas," by Mr. J. O. N. Rutter, a man of great practical experience as a gas engineer, and another of a useful little pamphlet on "Gas-lighting in Private Dwellings," was read at the Society of Arts, Adelphi, on 16th February, and is reported at some length in the threepenny *Journal of the Society of Arts* of 18th ult. Mr. Rutter described the usual gas stoves, and reprobated their use without proper ventilation by flues, long enough—say at least half a dozen feet, but as much longer as convenient or necessary in order to distribute the heat before quitting the apartment; and then, if possible, to be inserted into a chimney with a good draught. As the heat in such a flue or tube would be but moderate in intensity, perhaps, we may here remark, it might even be carried round a room in such a way as to be no eyesore, but rather to appear as a sort of skifting, though detached entirely from the wall plaster by brackets; or, as suggested after the paper was read, it might be compactly coiled beside or around the stove itself. Should the room have no chimney, or a bad one, it ought to be carried to another, and "in its course," said the reader, "whether rising above the room or descending below it, special care must be taken to incline the tube downwards towards the chimney it is to enter. This is to ensure the perfect drainage of the condensed vapour. A fall of about 1 inch in every 10 will be sufficient." A discussion followed, in which the advantages of gas for heating and cooking seemed to be pretty generally admitted. We think, however, that the propriety of ventilating gas-burners, especially in small apartments, which in fact they not only light, but also heat, and that sometimes offensively, from mere want of ventilation, ought to have been more insisted on than it was.

FUNERAL ARRANGEMENTS,

IN REFERENCE TO METROPOLITAN BURIAL-GROUNDS.

As it is highly important that the burial-grounds in this great metropolis should be speedily closed, and as one of the obstacles to their being so is the difficulty of deciding on what may be the best plan to adopt for future burials, I hope that, through the interest you take in the subject, you will allow me to allude to a few points that occur to me, as they may produce more valuable suggestions from others.

Many persons assume, as an admitted fact, that the dead must necessarily be conveyed along the railways; but I doubt whether that would have any decided advantage, and there are certainly many reasons why it would be objectional. That system would render three different sets of carriages and attendants necessary, and therefore I think it very unlikely to prove the cheapest,—one set to take the bodies to the railway, another to convey them on the line, and a third set to convey them from the line to the burial-ground! The railway companies would have to provide carriages especially for the dead, and a ready supply of coffins of all sizes at each station, that the bodies might not be longer exposed than was necessary after what would come under the heading of "railway accidents," and which might be expected to occur about once a week on an average.

The living travellers by railway might look on the passage of the dead by the same road as an additional and unnecessary danger of the line. Even the relatives of the dead, in cases where contagious disease had been the cause of death, would not be thought the most desirable travelling-companions; and perhaps some of the railway-carriages would soon be thought about as dangerous as the locality of a fever-hospital. As the porters, &c. at the railway stations would be the same as attended on the dead and their relatives, this danger would be not only probable, but quite unavoidable.

The question, therefore, recurs,—"What better plan can be suggested?" And my answer is, let each large parish, in most cases, have its own separate and independent mode of conveyance, and let smaller parishes unite, if convenient, to convey the bodies direct to the new burial-grounds. If the bodies had not to be taken more than ten miles, or such a distance as would allow a set of horses to go and return conveniently in the same day, the conveyance for that distance would probably be cheaper than by railway.

It might be arranged thus:—A hearse, constructed for the especial purpose of containing six or eight bodies when necessary, might be taken ten miles by one horse; because eight bodies would not be likely to weigh more than eighty stones, or half a ton.

A funeral omnibus, containing twelve or sixteen relatives of the dead, could be taken the same distance by three horses; and when the roads were good, two horses might be sufficient for taking sixteen persons. In most cases a smaller hearse and a smaller omnibus than those alluded to above would be sufficient for the day; but probably it would be convenient to have them of different sizes, so as to be suitable for a small number or a larger number of funerals.

If the hearse and the omnibus were the same in general plan of construction, but with such a distinction, as to ornament and outward appearance, as would at once mark the funeral of those who were being buried at the expense of their own families, the benefit of cheapness, arising from taking several parties by the same carriage, would still be available for some of that class; and I think it might be in many cases quite as cheap as at present. B. A.

Notices of Books.

Architectural Publication Society. Part III. of vol. for 1851-52.

The feature in the part just now issued by the Architectural Publication Society, is an essay on Baths, by Messrs. Ashpitel and Whichcord, with illustrations very neatly lithographed by Vincent Brooks, of Oxford-street. In the historical portion of the article much interesting and recondite information is brought together.

In a short notice of hip-knobs, Mr. Morant quotes the following from a work by E. De La Quérière:—

"It is supposed that the word 'épi' arose from the similarity existing between the ornaments so called and ears of corn (épis de blé); nevertheless, it seems that the origin of épi, espi, would be more correctly given as espié, espiel, espiet, espieu, *i.e.* épée, &c.; and in general anything pointed, from *spina*, as is found in the *Glossaire de la Langue Romane*, of Roquefort. That the term 'espi' was used in the fifteenth century, is proved by a manuscript (*Comptes de la Fabrique de la Paroisse Saint Laurent de Rouen*, for the year 1470-71,—suppressed in 1791), in the archives in the Department de la Seine Inférieure, in the depôt of the ancient library of the cathedral of Rouen, which says: 'A Cardinot le Pelletier, pour cent livres de plomb, n'est pas comprinse la peine et salaire de la fachon des cinq *epis* des chapelles du hault de l'esglise tant de costé que d'aultre commeuchés à faire et mesme du plomb.'"

The derivation here suggested may be correct; but in that case it must have applied first to the sort of roof we call a hip-roof, to which the hip-knob belongs; as a gable-knob is the knob on a gable, and a ridge-knob the knob on the ridge. Hipe or hypp is a Saxon word, meaning the projection of the haunch-bone of an animal.

The part contains three interesting sketches in illustration of "Court;" namely, the Dey's Palace, Algiers, and the House of the Provincial Assembly at Barcelona, both by Herr Diebitsch; and the quadrangle of a house in the Via Amalfitania, Syracuse, by Mr. Alfred Green, satisfactorily lithographed by Hullmandel and Walton. The part is altogether a good one.

The Principles of Mechanical Philosophy applied to Industrial Mechanics; forming a Sequel to the Author's "Exercises on Mechanics and Natural Philosophy." By Thomas Tate, F.R.A.S. of Kneller Training College, Twickenham, &c. London: Longman and Co. 1853.

Mr. Tate must be one of the most industrious and indefatigable of men. This is a still more elaborate and more lengthened work than most of the host he has already published. It is intended to give a comprehensive yet concise exposition of the principles of Mechanical Philosophy as applied to industrial mechanics. With the view of rendering the subject instructive to practical engineers and teachers, the investigations are mostly conducted on algebraic and geometrical principles, and numerous applications and illustrations are given throughout the work, which appears to have been suggested by a neglect of principles manifested in the Great Industrial Exhibition, especially in hydraulic science. It contains various original points, both in matter and in method, such as for determining the point of rupture in an arch, relative to the flow of water in pipes and open channels, on the work of hydraulic engines, including re-action of wheels, and the centrifugal pump, &c.

A School Atlas of Physical, Political, and Commercial Biography; with descriptive letter-press. By Edward Hughes, F.R.A.S. F.R.G.S.; Associate of the Institution of Civil Engineers, &c. The maps compiled and engraved by Edward Weller, F.R.G.S. London: Longman and Co. 1853.

The object of this work is to exhibit within a moderate compass the present condition of geographical knowledge in all its bearings, including the large accessions made of late years by Humboldt, Berghaus, and others. It affords ready and apparently accurate information to the general reader as well as to the student. The maps present at one view the natural and political divisions, laws of climate, productions, &c. of the different countries, continents, and quarters of the globe, and are most instructive, especially to those who wish to get at such particulars without much reading or trouble. Besides four maps of the world in its zoological, botanical, climatological, and general aspects, there are a physical and a commercial map of each separate continent, a geological and commercial map of the British Isles, map of Australia, New Zealand, &c. with the gold-fields on a small scale, and the whole are clear and nicely engraved.

Supplement to the Post Office London Directory for 1853. Kelly and Co. Temple Bar.

This is a useful supplement, published annually, shortly after the assembling of Parliament in February, under the patronage of the Post-master-General, and containing, amongst other information, a Peerage and Parliamentary Directory, with town and country addresses, offices, &c. and a Postal Directory corrected to the date of publication.

The Farmers' Manual of Agricultural Chemistry. By A. Normandy, Author of "The Commercial Handbook of Chemical Analysis," &c. George Knight and Sons, Foster-lane, Cheapside. 1853.

Mr. Normandy is an author who has already done the public good service, as our readers may remember, in pointing out the means of detecting and exposing that villanous system of adulteration which prevails to such a tremendous extent in every trade within the limits of this cheapening and underselling metropolis of shop-keepers. In the present, as in the previous instance, the author's labours were engaged by Messrs. George Knight and Sons, the well-known manufacturers of chemical and philosophical apparatus, who have thus certainly adopted a legitimate mode of promoting their own welfare while doing the public a service. The present little manual ought to be of considerable use in aiding the advent of that wonderful development of agricultural manufacture which may assuredly be looked for with confidence ere another generation pass away, and which the younger portion of the present generation of farmers might do an immense deal by means of such books as this on the chemistry, and others on the mechanics, of agriculture, to hasten and extend.

In addition to precise and minute, as well as simple, instructions as to the ingredients, properties, and analysis of soils, and other matter of importance in the main portion of the book, it contains a curious and practically important division on the subject of insects injurious to crops, &c. and how to get rid of them; with

another on the diseases of the cereals, with remarks on their prevention and cure. The whole is illustrated with numerous wood engravings.

The Glass and the New Crystal Palace. By George Cruikshank. London: J. Cassell. 1853.

This is another of Mr. Cruikshank's earnest, clever, but eccentric attacks on the monster evil,—the bottle. He urges the inconsistency of endeavouring to keep the Crystal Palace closed on a Sunday, while the public-house and the gin-shop,—"the broad road which leads men and women to misery, destruction, and perdition,"—are kept open. It is impossible to over-estimate the evil, or to overpraise Mr. Cruikshank's continuous efforts against it.

Miscellanea.

British Archæological Association.—At an ordinary meeting of this society on the 23rd ult. Mr. S. Solly, A.M. in the chair,—the Rev. Thomas Hugo, A.M. read a paper on the various forms and uses of the ancient weapon known by us as the "Celt," and the probable modes in which they were attached to the handle, according to the purposes to which they were applied. Mr. Hugo presented to the association several etchings by him of specimens in his possession, or which have come under his notice; and after remarking that he believed them to have been invariably made either of stone or brass, invited the members of the association and others to forward him drawings or particulars of any of these interesting relics of the warfare of the ancients, which they may have or know of, in order to assist him in his design of making a complete series of etchings of the celt in all its forms and of different periods.——Mr. Cuming said he believed the stone to be the earlier manufacture, and suggested it as probable that the brass celt became in universal use when they were copied by the ruder tribes, who saw the inferiority of their stone ones on the field of battle.——Mr. Planché said, as regards the doubt as to whether they were for warlike or domestic purposes, that they were most probably used for both, and that they were as effectual in cutting down a tree as an enemy.——Mr. Charles Bailey said that he once saw an *iron* celt, in the possession of Abraham Kirkman.——Several exhibitions were made to the association; and Mr. Pettigrew read another portion of his paper on the antiquity of playing cards. It relates (as we stated in our last report of this society), more particularly to a pack supposed to be made for the amusement of Charles II. when an exile at the Hague, in caricature of Cromwell and his adherents. They are complete, and are divided into suits of hearts, clubs, &c. as at present. The chief part of the surface, however, is taken up with a copper-plate engraving and inscription, the style of the card being at the top. Mr. Pettigrew, after a dissertation on the origin of playing cards generally, has not only given explanation of every subject on each one of the pack above mentioned, but has introduced biographical sketches (if we may so term them), of every individual caricature.

Sea-sand for Mortar.—Has the following method ever been tried for making sea-sand usable in building? washing the sand in dilute oil of vitriol, so as to separate the salts from the silicious particles, pouring off the fluid, and washing again, twice or more, in fresh water. I think a "seasider" might try this with advantage.—E. W. T.

Design for Gates, St. George's Hall, Liverpool.—The council have awarded to Messrs. Hoole, Robson, and Hoole, of Sheffield, the premium of 21*l.* and to Messrs. Messenger, of Birmingham, the premium of 10*l.* 10*s.* for the designs submitted for the gates in St. George's Hall.

The "Moderateur" Lamp.—You inform us that our lively neighbours call us "varnished barbarians." Alack! in matters of art we cannot plead "not guilty" to this impeachment; for who but unmitigated barbarians would purchase those vile lamps which, swarming, locust-like, from the *ateliers* of Paris, have invaded the shop-fronts of the principal dealers in the article in our most public thoroughfares?

One who hoped better things from the Doings of 1851.

*** We protested against this lamp, in an artistic point of view, some weeks ago; and the Department of Practical Art, adopting our suggestion, placed an example in their "Chamber of Horrors." In consequence, avowedly, of our remarks, more than one manufacturer has endeavoured to improve the form. Messrs. Tylor and Son, of Warwick-lane, Newgate-street, whose baths we commended some time since, have done so with considerable success.

Sculptors' Competitions.—Remembering the admirable manner in which you have from time to time exposed the injurious system of competition among architects, I trust you will also permit a sculptor to cry out. How absurd it is, that in the event of a work of fine art being required, various sculptors should be called upon to furnish ideas to a committee, *without remuneration!* I do not speak of middle men or juniors, but those of established fame,—when each one is perfectly competent to carry out the work; and who would, if required, furnish not one, but half a dozen designs,—a competition in itself; but then cheerfully undertaken. Too frequently these competitions emanate from the self-will and vanity of a single committeeman. He thinks not for one moment of the toil and anxious hours of the sculptor wasted. Why should not each party nominated to compete, receive payment for the time he devotes to the common object, excepting the most approved, who obtains the work? What an advantage to art would such a course be. It would create union and concord in place of jealousy and heartburnings, as at present; and how can sculpture thrive under such circumstances? What have we gained by competition? Look around, and discover if you can; but even, if here and there an isolated case does occur, look within to the dozens of disappointed and impoverished unsuccessful competitors, who have been drawn into competing by specious assurances and golden prospects. It is to be hoped that sculptors will take the hint and unite to oppose all future competition, excepting under wholesome regulations.—A Sculptor.

Institution of Civil Engineers.—The evenings of March 15th and 22nd were entirely devoted to the discussion of Mr. D. K. Clark's paper "On Locomotive Boilers." In the course of it, as an example of the objections to long tubes, the results were given of the work done by a luggage engine, on the London and North Western Railway, before and after alteration. That engine originally had tubes 14 feet long, with a total surface of upwards of 800 feet; the length of the tubes was diminished to 4 feet 9 inches, and the total surface was reduced to about 500 feet, when it was found that a saving in fuel of 40 per cent. per ton per mile, moved, was produced, with a saving of 23 per cent. per mile run; the coke used per ton per mile, with long tubes, before alteration, being ·504 lb. and with the short tubes ·298 lb. A comparison was drawn between the recent experiments, by Mr. Marshall, on the large fire-box engine, and those on the long-boiler engine, made during the gauge inquiry, the results being, with the former, a consumption of 40 lbs. per mile, with an average load of 64 tons, and with the latter, a consumption of 27 lbs. per mile, with a load of nearly 60 tons. The recorded results of the work of the passenger trains, on the Eastern Counties line, for the last half-year, showed an average consumption of coke under 18 lbs. per mile run. It was contended that hitherto no advantages had resulted from the extension of the fire-box and the reduction of the length of the tubes, still it was possible that this innovation might, by directing attention to the subject, lead to important modifications of the structure of locomotive boilers, which should possess compactness,—lightness,—power of raising sufficient steam, with rapidity, for performing the required work,—strength, to resist the chance of explosions, and a form calculated to diminish the disastrous effects of explosions when they occurred,—facility of repair, especially of the fire-box, which was the part most liable to deterioration, being most severely acted on by the fire, and also requiring more support than the tubes, the latter being at the same time cheaper and of thinner metal, whilst, by an extension of their length, the diameter of the external shell of the boiler could be diminished. The fire-grate should not be larger than would evaporate the required quantity of water in steam, within a given time, with the utmost practical economy of fuel, and if that were accomplished, it was of little importance whether the evaporating heat was communicated through the fire-box, or by the tube surface. The discussion will be resumed on the 5th.

Strikes and Advance of Wages.—In various parts of the country, workmen are astir for an increase in wages. Various classes of them in Liverpool, including plasterers, cabinetmakers, and upholsterers, have already struck work for an increase of from 2*s.* to 4*s.* a week, to which some of the master cabinetmakers, failing to obtain a fresh supply of hands at the old terms, have acceded, as have master carters and others. The paperhangers, cordwainers, and others, such as porters, seamen, watchmakers, shoemakers, &c. are about to follow the example of their fellows, so that the rise at Liverpool is general. At Plymouth, Devonport, Stonehouse, and the neighbourhood, the house carpenters and joiners had meetings lately, and determined to insist on a rise of 6*d.* a day, and a limitation of hours to ten a day. In this part of the country the wages of such workmen are only 15*s.* to 17*s.* a week, with longer hours as well as smaller wages than in many other parts of the country. Some of their employers have agreed to an increase of wages. At North Shields the joiners met on 7th ult. and requested of their masters an advance of 2*s.* a week, to which eighteen out of twenty-one of the masters at once agreed, and a strike of the workmen employed by the remainder was determined on. The Stirling masons took advantage of a recent increase of demand for their services to urge an advance from 18*s.* to 20*s.* a-week by a strike, which was successful. The employés on some of the railways are also said to have struck work for higher wages.

Dewsbury Union Competition.—I beg to hand you "Instructions to Architects" competing for the Dewsbury Workhouse. 125*l.* worth of labour and talent asked for, and 20*l.* offered as a "prize." This, doubtless, will be responded to by needy draughtsmen, but I hope, for the credit of the profession, no practising architect will compete. It is time public opinion was brought to bear upon these disgraceful practices. The day is fast approaching when talented men in our ranks will be few and far between, unless talent meets with a better appreciation than these committees and boards manifest. It appears to me that our profession generally is looked upon as a set of men who can either live on very small fees, or who get money in a clandestine manner, whenever they are intrusted with a good job.—One who will not work unless remunerated.

Widening Streets in the City.—In reply to an inquirer, we may say that for some time past, within the city, whenever a house has been pulled down, or partially pulled down, it has been the business of the surveyor to the Commission of Sewers to report if it presented an opportunity for effecting improvement at the spot, and such reports frequently ended in improvements being effected. We understand that the surveyor is at this present time negociating for houses, or portions of their site, for widening public ways at ten distinct spots within the city,—the commission acting under the 57 Geo. 3; an Act which can be used by every metropolitan paving-board within the bills of mortality, but one, we fear, that is scarcely ever used by them for that object. The north end of Chancery-lane is not within the city.

The Liverpool Architectural Society.—The fortnightly meeting of the members of this society was held on Wednesday evening in last week. The secretary stated that at the last meeting a lengthy document was read from the committee of baths and washhouses in London, containing allegations affecting Mr. Newlands, and repeating the charges of plagiarism. A committee was appointed to report to the society. Specimens of patent architectural ornature, being illustrations of articles in Roman clay from the manufactory of Messrs. Bower and Co. of Tunstall, were received from Miller and Co. of this town. A conversation took place as to whether the Runic cross was used at an early period by other than Christians, the subject having been introduced at the previous meeting. Opinions were elicited showing that the cross was in use at a very early period, at least as a hieroglyphic. Mr. Verelst read the paper for the evening, entitled "Commoditie, firmnesse, and delights."

The Parisian Exhibition Building.—The "Palace of Industry" in course of erection in the Champs Elysées, is to be composed of a hall 192 mètres in length and 48 mètres wide. It will be surrounded by a double gallery 24 mètres wide. The roof is to be supported by light columns, and the whole length of the building will be 254 mètres, and the width 103 mètres. The height is to be 35 mètres. The building is to have four grand entrances, one at each side, with four smaller ones at the angles. The exterior wall will be made of cut stone, with arcades, 360 in number, the principal entrance facing the avenue of the Champs Elysées. All round the building will be inscribed the names of men celebrated in arts and manufactures. Also along the front of the principal entrance will be sculptured medallions destined to receive the busts of men who have been an honour to France. About 20,000 persons will be able to circulate with ease at the same time in the building. The roof is to be of iron and zinc, the top being of glass, like that of the Crystal Palace of London.—*Gatignani.*

At the Architectural Association, on Friday, April 1st, a paper was to be read on "The Supply, Collection, and Discharge of Water in Towns," by M. Servaas de Jong, of Amsterdam. The poetical passage for illustration for April 8th, by class of design, is "A Fragment from the Ingoldsby Legends."

"The slanting ray of evening sun shone through the cloister pale,
With fitful light, on regal vest, and warriors' sculptured mail,
As from the stained storied pane, it fell with quivering gleam,
And each cold prostrate form below seemed quickening in its beam."

DEPARTMENT OF PRACTICAL ART.—The first Report of the Department of Practical Art has been printed. In glancing over it hastily, we observe that while distinct elementary schools of art are being formed generally throughout the United Kingdom, the consideration of applications for more advanced schools of art has been postponed. Classes have been formed at the Central School for acquiring the knowledge of principles of ornamental art, and applying them in the practice of metal-working of all kinds, furniture, jewellery, and also for surface-decoration applied to woven and other fabrics. The classes so formed have been based on inquiries among manufacturers as to the desirability of improving ornamental designs. From a pressure on our space, we cannot do more than refer to this report at present.

THE ROYAL MEDAL FOR ARCHITECTURE.—The Institute of Architects have awarded the Royal Medal to Sir Robert Smirke, and it will be presented to him at the next meeting of the Institute, Monday, 4th, when Earl de Grey will take the chair. A paper will be read by Signor Abbati on the Decorative Painting of Pompeii.

DISCOVERY AT THE PRIORY CHURCH, HERTFORD.—Workmen digging up the foundations of an old building in the Priory timber-yard have discovered a stone coffin at no great depth from the surface. The *Hertford Mercury* suggests that it probably contained the body of Ralph de Limesci, son to the sister of William the Conqueror, and who endowed the Priory of St. John, and was the first prior.

INCREASE OF NOTTINGHAM.—Nearly forty new factories and warehouses have been and are being erected in and near Nottingham, and innumerable new dwelling-houses are being rapidly built, and will soon form an entirely new town. Nevertheless, the dwellings so being erected are not adapted to the class who must be most in need of them,—namely, the numerous working people and warehouse assistants required for so many new factories and warehouses. As in London, the result of this is likely to be a monstrous lodging-house system, in which every one is compelled either to become a lodger or a lodging-house keeper, none being able to tenant a house within his means, and nevertheless, every house still being built but for a single family. This is the anomalous position of hundreds of thousands in London at this moment, and one reason often given for it is, that ground-rents are too expensive for houses small enough and cheap enough for poor people; but, for that very reason, houses ought to be built purposely for separate families, so that each family may have an equivalent for a separate house, and, in effect, may have a separate dwelling,—almost as entirely so as if it were side by side with its fellows, in place of above or below them. On the contrary, at Nottingham, as in London, builders are blindly pursuing the old track, like so many unthinking sheep, and preparing dwellings in which families must herd together much as sheep also do. A few "model" dwellings are about to be built at Nottingham, but even these, it appears, are of too costly a kind. Its growing importance is likely to be seriously checked by the present state of things, and the authorities should look to it and take the initiative themselves towards a remedy.

WHITTINGTON'S STONE.—On paying a visit recently to the above, I was sorry to see it out of condition: the inscription is almost illegible, and in a short time will be wholly so. It appears to me that it has been recently moved from the edge of the road farther in, on account of a new street forming at the foot of Highgate-hill. I suggest that the *custodes* should re-cut the inscription and put a fence round this record of the past.—P. P.

ST. JAMES'S CHURCH, DARWEN.—Operations have been commenced for restoring this church, under the superintendence of Mr. T. Hargreaves, architect. There will be a new open roof, new windows throughout, with portions of coloured glass, new chancel furniture, and other improvements. It is intended to be reopened on 12th June next.

LIQUID AND UNCHANGEABLE GLUE.—As this glue is very convenient for cabinet-makers, carpenters, and others, inasmuch as it is applied cold, and does not require heating, I give the method of preparing it to the public:—Take of strong glue 1 kilogramme (2·2 lbs. Av., 2·7 lbs. Troy), dissolve it in 1 litre (1 quart) of water, in a glazed pot on a slow fire, or better still, over a water-bath; stir carefully from time to time. When all the glue has melted, add little by little 200 grammes (6·5 oz. Troy) nitric acid, spec. grav. 1·33. This addition produces an effervescence due to the disengagement of nitrous acid. When all the acid is poured in, the vessel is removed from the fire and suffered to cool. I have preserved glue thus prepared for more than two years in an uncorked bottle, and during this time it underwent no change. —*M. Dumoulin, in Comptes Rendus de l'Acad. des Sciences.*

TENDERS

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TO CORRESPONDENTS.

"W. K. W." "J. B." Durham (Yes). "Vanburgh Club." "W. A." "T. A. T." "Buildings and Monuments, Modern and Medieval," one volume, may still be had at 1, York-street). "T. S." (such a quotation would require careful verification). "J. G." Grantham (we are unable to assist). "E. A." "J. B. B." "Z" "J. T. T." "Unvarnished Barbarian." "C. P. S." "E. A. F." (thanks). "J. W." "J. D. D." "S. M. H." "W. C." "Ruby." "C. P." "S. H." "A Forester." "N. D." "A. W. H." "A. G." "T. D." "An Architect." "*Books and Addresses.*"—We have not time to point out books or find addresses.

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ADVERTISEMENTS.

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PARTIES in the above Line are respectfully informed that an OFFICE has been OPENED for the SUPPLY of FIRST-RATE MECHANICS (Carpenters, Joiners, Bricklayers, &c), at the National Coffee-house, 1, Little Turnstile, Holborn, where all applications for men, addressed to W. RICHARDSON, shall receive immediate attention.

METROPOLITAN BUILDINGS ACT.
Office of Metropolitan Buildings,
6, Adelphi-terrace, Strand, 31st March, 1853.

NOTICE.—An EXAMINATION of Persons desirous to obtain a CERTIFICATE of QUALIFICATION for the office of DISTRICT SURVEYOR, will take place on THURSDAY, the 28th day of APRIL.—Persons desirous to be examined must apply on or before the 8th day of APRIL, and the application must be accompanied by a preliminary statement according to the course of examination prescribed in the rules for that purpose, copies of which may be had at this Office, or at Mr WEALES, Architectural Bookseller, 59, High Holborn.

(Signed) ARTHUR SYMONDS,
Registrar of Metropolitan Buildings

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NOTICE IS HEREBY GIVEN, that the PARTNERSHIP late subsisting between us, the undersigned Henry Hampden English, of Wisbech, in the county of Cambridge, Joseph Thomas English, formerly of Wansford, in the county of Northampton, and now of Stamford, in the county of Lincoln, and Joseph William Harrison, of Wisbech aforesaid, heretofore carrying on the business of Timber and General Merchants at Wisbech and Stamford aforesaid, under the firm or style of "ENGLISH BROTHERS and HARRISON," was on the 31st day DISSOLVED by effluxion of time. Messrs. H. H. English and J. T. English will in future carry on business in copartnership, upon the premises of the late firm, under the firm or style of "English Brothers," and Mr. J. W. Harrison will in future carry on business at Wisbech, under the firm or style of "Harrison and Co."—All debts owing to the late copartnership are to be received, and all accounts against the late copartnership are to be discharged, by Messrs. English Brothers.

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Dated this 1st day of April, 1853.

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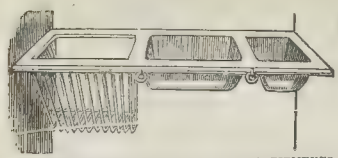
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A set complete set of twenty models for making pipes, bends, pans, and traps, syphons and a quantity of 4-gallon stone filters. Apply to Mr MAY, 93, Leadenhall-street, City

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ENAMELLED MANGERS AND STABLE FITMENTS, Registered. Economy, durability, appearance, cleanliness, comfort to the horse when feeding, and being rendered impervious to any infection by enamel, are some of the improvements of these utments

THE ROYAL EXHIBITION PRIZE MEDAL
WAS AWARDED TO
COTTAM AND HALLEN,
FOR
ORNAMENTAL IRON GATES;
ALSO FOR THEIR REGISTERED
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ORNAMENTAL WROUGHT AND CAST IRON WORK OF EVERY DESCRIPTION—STAIRCASES, RAILINGS, &c.

ESTIMATES UPON APPLICATION.

IMPROVED PUMPS.



The VALVES and SUCKERS of these Pumps are constructed upon an entire new and SIMPLE principle: they are not likely to get out of order: should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

THEY ARE OF THE BEST WORKMANSHIP, AND WARRANTED.

PUMPS OF EVERY DESCRIPTION, IN STOCK AND TO ORDER.

FOWLER'S IMPROVED FARM and COTTAGE PUMPS.

To be had of any Ironmonger or Plumber, 1l. 15s.
The usual allowance to the trade.



PUMPS of SUPERIOR CONSTRUCTION bored perfectly true by improved machinery, in various plain and ornamental patterns, for squares and marketplaces, roads, conservatories, liquid manure, ship, barge, brickmakers, contractors, gold diggers, brewers, chemical works, and in wrought and cast-iron, copper and brass, for hot or cold liquors, &c. &c. Long barrel and hydraulic lift-pumps, with handles on planks; and engines of various powers, for wells of any depth.

PUMPS on HIRE!—The largest stock in England of single and double pumps, from 4 in. to double 13 in. barrels, prepared for hand or steam power, ready for use on reasonable terms, at

BENJ. FOWLER'S, Hydraulic Engineer, Hot-water, Steam and Gas Apparatus Manufacturer, New Factory, Whitefriars-street, Fleet-street.

TO BUILDERS AND PLUMBERS.
The attention of the Trade is called to
JOHN WARNER & SONS'
PATENT VIBRATING STANDARD PUMP,
which is recommended for the simplicity of its construction, and the ease with which it works.

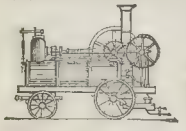
By the introduction of the vibrating standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.



JOHN WARNER & SONS,
8, Crescent, Jewin-street, London,
Manufacturers and Patentees.

STEAM PUMPING ENGINES.—
PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

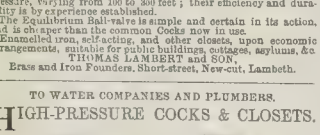
JAMES BURTON & SONS,
Engineers and Contractors,
John's-place, Holland street,
Southwark, London.

TO WATER COMPANIES, BATHS AND WASHHOUSES, BREWERS, DYERS, PALE-ALE BREWERS, &c.

MESSRS. ASHPITEL and WHICHCORD'S PATENT VALVE, adapted for high-pressure or inequality of temperature. The greater the pressure the more perfect the valve. Manufactured and sold by THOMAS POTTER, 44, South-Molton-street, London.

PRIZE MEDAL, CLASS 22.

HIGH-PRESSURE VALVE COCKS.—
LAMBERT'S PATENT



These Cocks have, during the last five years, been extensively and most successfully used in many Towns under continuous high pressure, varying from 100 to 300 feet; their efficiency and durability is by experience established.

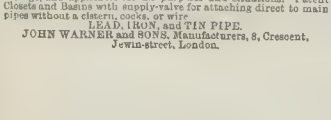
The Equilibrium Ball-valve is simple and certain in its action, and is cheaper than the common Cocks now in use.

Enamelled iron, self-acting, and other closets, upon economic arrangements, suitable for public buildings, cottages, asylums, &c.

THOMAS LAMBERT and SON,
Brass and Iron Founders, Short-street, New-cut, Lambeth.

TO WATER COMPANIES AND PLUMBERS.

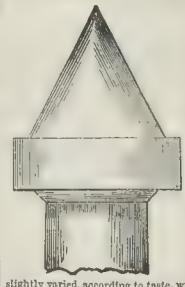
HIGH-PRESSURE COCKS & CLOSETS.



The Health of Towns Commissioners having recommended the adoption of the high-pressure principle in all towns, WARNER'S HIGH-PRESSURE COCK is recommended as a Cock free from leakage, and applicable for all purposes and situations. Patent Closets and Basins with supply-valve for attaching direct to main pipes without a cistern, cocks, or wire.

LEAD, IRON, and TIN PIPE.
JOHN WARNER and SONS, Manufacturers, 8, Crescent, Jewin-street, London.

BAILEY'S "SMOKE GUARD,"
REGISTERED, FOR THE CURE OF SMOKY CHIMNEYS.

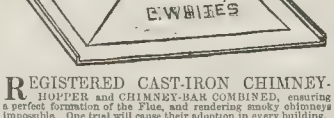


The principle upon which this "Smoke Guard" is constructed is just the reverse, of those in ordinary use, namely, "to EXPAND the TOP" of the chimney, instead of contracting it; or, in other words, to double the area of the chimney-top at the opening, where the smoke escapes, and at the same time protect it in such a manner that no wind can enter the chimney, from whatever point or with whatsoever strength it may blow. An examination of this "Smoke Guard" will show that these two important points are effectually secured, and in such a manner as to increase the draught of the chimney in proportion to the strength of the wind, by the current of air which is made to pass between the guard-ring and the chimney-top, and the great success they have met with is the best proof of their efficiency. The form may be slightly varied, according to taste, without altering the proportions or principle, and may be securely fixed, made in any material, without the aid of any masonry.

Labels may be purchased by the half-dozen, at One Shilling each, or Licenses will be granted to manufacture these "Smoke Guards" to any extent, for the sum of Fifty Shillings, on application to

D. and E. BAILEY, 272, HIGH HOLBORN, LONDON.

IMPORTANT TO BUILDERS.



REGISTERED CAST-IRON CHIMNEY-HOPPER and CHIMNEY-BAR COMBINED, ensuring a perfect formation of the Flue, and rendering smoky chimneys impossible. One trial will cause their adoption in every building.

Price from 6d. each, according to size.

CAST-IRON KITCHEN SINKS, with overflow-pipe, 8s. 6d. each.

IRON PIPES and connections for gas, water, and liquid manure.

RAIN-WATER PIPE and EAVE GUTTERS, at wholesale prices. Also, O.G. Gutters, Bash-weights, STABLE FITTINGS, pumps, tomb railing, cattle and pig troughs, and COLUMNS with cans and bases, and every kind of builders' castings, in stock, at LYNCH WHITE'S Iron Wharf, Upper Ground-street, London, near Blackfriars-bridge.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the admission of pure air through an



EXTERNAL WALL.

With single pulley, from 6s. each; with leading pulley, from 6s. 6d.

These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough; and of all respectable ironmongers, builders, &c.

SMOKY CHIMNEYS.—Sufferers from that greatest of all nuisances will do well to try one of SUTER'S VENTILATING WIND GUARDS; price 1s. 6d. They have effected hundreds of cures where all other means had failed. To be had of all Ironmongers and Builders, and of the registered proprietor, ALFRED SUTER, 68, Fenchurch-street, City.

MESSRS. GALLI and COTTI, Decorative Painters, from Milan, have the honour to inform the nobility, gentry, and architects that they execute every kind of decoration, in private dwellings as well as in churches, halls, theatres, and other public buildings. Having had great practice in the various departments of the decorative art, such as oil, encaustic, distemper, and fresco painting, they are enabled to make correct estimates of proposed works, as well as to execute the latter with despatch and economy. G. & C. who obtained a prize medal at the Great Exhibition of 1851, can refer to works performed by them in the metropolis and in other parts of England, and beg further to state that the decorations of the steam-ship of the Pasha of Egypt, the *Divine Favour*, so honourably mentioned in the *Times* of August, 1852, were wholly designed and in great part executed by them.—No. 20, Berners-street, Oxford street.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 58, Pall-mall, London.

CRAFNANT CONSOLS COPPER-MINE, NORTH WALES.—Held under Lease for Twenty-one years. To be conducted on the Cost-book Principle. Capital, 20,000l. in 20,000 Shares of 1l. each. To be paid on allotment.

DIRECTORS AND MANAGING COMMITTEE.
William Heall, esq. 14, Fenchurch-street, London.
William Hobson, esq. Grove Lodge, Sheffield.
Edward Loder, esq. 43, Cambridge-terrace, Hyde-park.
Thomas Mearbeck, esq. Sheffield.
Robert Mitchell, esq. Sheffield.
E. H. Rudderforth, esq. 6, Air street, Piccadilly.
BANKERS—Messrs. Masterman and Co. 35, Nicholas-lane.
BROKERS.
Messrs. Field, Son, and Wood, 9, Warnford-court, Throgmorton-st.
George Wilson, esq. 6, George-street, Sheffield
DIRECTING AND CONSULTING ENGINEER.
St. Pierre Foley, esq. 9, Gibson-street, Islington.
SECRETARY—Mr. William Battye.
Offices, 33, Great Winchester-street.

PROSPECTUS.

The above mines are situated in the parish of Llanbedr, near Harlech, in the county of Merioneth, North Wales.

The sett is extensive, extending over a surface of 450 acres, and the lodes are traceable 60l fathoms east and west on their bearing, with some cross lodes which make great deposits of ore, particularly at their juncture with the chief lodes.

The ore is of the richest description of yellow copper ore, producing thirty-three per cent. of metallic copper, specimens of which may be seen in the offices of the Company, one of nearly solid ore, weighing more than 3 cwt. a specimen highly interesting from its extraordinary size.

The mines are now inc ourse of working, and making good returns for the capital expended.

Notice is particularly requested to the annexed extracts from the reports of the Engineers, which are open for inspection at the Company's Office; also to the fact that there is sufficient water-power at command for all mining purposes, rendering steam machinery unnecessary.

There is a good road leading directly through the sett to the port of shipment at Llanbedr, which is only three miles distant from the mines.

The late Proprietors have agreed to take shares in the mine for the full amount of their interest, and to allow a considerable portion of their shares to remain in the hands of the Directors, until the mine pays a dividend.

Application for shares to be made to the Secretary, at the Company's Offices, and to the Brokers.

REPORTS.

Extract from the Report of St. Pierre Foley, esq. C. & M.E.

Very rich copper lodes have been discovered on this extensive sett, containing yellow copper ore of the richest description; gozen and black oxide, and native copper ores, the general matrix being quartz of that description which miners look on as favourable to copper deposits. Having repeatedly examined this mining sett, and all the mine-works there, and now having inspected the shafts, levels, &c and the indications that new trials exhibit, I think I am fully warranted in reporting most favourably on the prospects of these mines, as I have stated before, and I am glad to find that I am supported in this judgment by those eminent captains whose reports you have placed before me. I believe with them, your mines of Crafnant only require spirited and economical working to produce vast and most profitable returns.—March, 1853.

Extract from the Report of Captain Francis Treweek.

This mine is situated in the parish of Llanbedr, about three miles N.W. direction from the town of Harlech. The lodes run in direction nearly east and west, or longitudinal with the hill. Many trials have been made on the back of one of these lodes within the range of 400 yards, and in none of these trials has the lode been found barren, but, on the contrary, in several places it has been found exceedingly productive, and that, too, of the richest variety of sulphuret, oxides, and carbonates of copper, as are rarely seen produced from one lode. Many tons of this ore have been sold at a very high price, and many tons are now on the mine, preparing for the market. The strata of the hill in which the lode runs is porphyritic trap, and killas or clay-state. The general appearances and prospects of the mine in its present stage are exceedingly flattering, and the existence of a strong parallel lode, that may be seen about 30 fathoms to the north, tends to considerably enhance the prospects. I have much pleasure in stating that I have a very favourable opinion of these mines, and I feel almost confident that the lodes will be productive of abundance of ores. The facilities for working the mines are twofold: First, an adit can be driven from the base of the hill that will cut the lode 100 fathoms below the surface. Secondly, would it be considered more economical to work the mine by the sinking of an engine-shaft, and driving therefrom at different levels, &c. there is a powerful stream of water that can be made available to the working of sufficiently powerful machinery to drain the mine to any depth.

Extract from the Report of Captain John Davies.

The Crafnant Copper-mine is situated about three miles from the town of Harlech, in the parish of Llanbedr, North Wales. The sett is very extensive, embracing a very high hill or mountain, composed chiefly of schistose slate, highly mineralised, and through which several lodes are passing in different directions, and of various angles of declination, all of which contain ores of high produce. One lode, however, is of greater magnitude than the others, having an east and west direction, and running nearly longitudinally with the mountain; and considering the partial excavations and explorations on it, its produce has been very extraordinary, having in a few superficial fathoms produced about thirty tons of very rich copper ore! I was highly pleased to find a good heap of ores lying on the floors; some of the stones were very large and very rich, equalling any I have seen in large and fully-developed mines, and during my stay in the mine good stones of copper ore were broken from the lode. At the foot of the mountain, and within the sett, a very fine river flows with great impetuosity, equal to any power required for machinery of any magnitude; but the height and abruptness of the surface of the hills will enable the proprietors to communicate lodes at considerable depths without the aid of pumping-engines, which of itself is of great importance. And its proximity to the port of Llanbedr is another local advantage, most desirable for the conveyance and shipment of the ores

St. Agnes, near Truro, March, 1853.

To the Committee of Management of the Crafnant Consols Copper Mining Company.

GENTLEMEN,—Be pleased to allot me shares in this Company, and I undertake to deposit the same according to the rules and regulations of the cost-book, and to pay the depos it thereon.

Your obedient Servant,

Name .....
Address .....
Reference .....
Date .....

LIGHTERAGE.—To Saw-Mill Proprietors, Timber, Slate, and Stone Merchants, or others, requiring Lighterage.—The Advertiser having a large number of Barges, is willing to undertake LIGHTERAGE at prices that defy competition.—CHARLES STRUTTON, 34, Commercial-road, Lambeth

VALENTIA SLATE SLABS.—A Cargo, containing about 8,000 feet of inch, 4,500 feet of 1¼ inch, and 1,000 feet of 1½ inch SLABS of large dimensions, with some other thicknesses, is landed, for the convenience of purchasers north of the metropolis, at Freeman's Wharf, City-road Basin.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; Mills; by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

THE PIMLICO SLATE-WORKS. Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

SLATE MANUFACTURE, by STEAM MACHINERY, at BRINDLEY'S OLD ESTABLISHMENT.—Always on hand, a large assortment of useful size SLABS, of various qualities, and an extensive stock of ROOFING SLATES. Price lists may be had upon application, or sent by post.—Works and Wharf, Bermondsey-wall, Deptford.

Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.

The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Anues, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Hendstones, Yorkshire Paving, Granite Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent. Commercial-road, Pimlico.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others, that he continues to supply the Box-hill Ground Stone, Combe-down, Corsham, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS.

BATH.

DEPOTS.

Great Western Railway Station....	PADDINGTON.
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Hope-street, Mount-pleasant	LIVERPOOL.
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

CHEAP STONE.—PAVING at very LOW PRICES. Sinks, 1s. 8d. per foot; Coping, Sills, Steps, &c. Good tooled Paving, at 3s. per 100 feet, also at 2s8. and 2s. Builders and Masons are invited to inspect; Country Builders supplied with a priced List, free, on application. Countess, Viscountess, and Ladies States, of best quality, at lowest prices. A small charge for carriage is made to the different Railway stations and wharfs in London. E. and W. STURGE, Bridge-wharf, City-road.

BRENT MOOR GRANITE QUARRIES, SOUTH DEVON.—W. TUCKWELL begs to inform Architects, Engineers, and Contractors, that he is prepared to SUPPLY any quantity of GRANITE from the above quarries.—Apply to W. TUCKWELL, at the Depôt, Norway-Sufferance-wharf, Greenwich, where a stock for immediate use is always available.

Offices in London, No. 3, St. Martin's-place, Trafalgar-square.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

By Her Majesty's — Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. Its appearance is accurately resembles natural stone, and has no analogy to cements of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.

Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.

Specimens may be seen and further particulars obtained at the offices.

8, John-street, Adelphi. EDWARD MENDHAM, Sec.

NORTH WALES, MERIONETHSHIRE. TO ARCHITECTS, BUILDERS, and CONTRACTORS of DOCKS, BRIDGES, &c.—TO BE DISPOSED OF, important and valuable BUILDING BLOCKS and STONES. The above are lying over a great extent of broken rocky ground, about a mile's carriage down the hill to the navigable Barmouth River, where there is a shipping place. The Blocks vary from 1 cwt. to from 12 to 15 tons, or even more, colour of the rock a pale greenish grey, peculiarly tough and crystalline, and works well under the hammer or chisel. It is considered to withstand the action of water as well as fire, and is most suitable for arches, docks and other buildings, especially where size is an object. No quarrying is required, the blocks and stones lying on each other, it may be said, to an inexhaustible extent. A Lease will be granted if required.—For particulars apply to EDWARD OWEN, Esq. Garthynghared, Dolgelley, North Wales

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Blue Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

	Per square.		Per square.
½ inch yellow	14s. 0d.	½ inch white	13s. 6d.
¾ " "	15 6	¾ " "	15 0
1 " "	17 0	1 " "	17 0

2½ per cent. discount off amounts exceeding twenty pounds.

ARCHBUTT and ATKINSON, St. Pancras Saw-mills, Cambridge-street, Old St. Pancras-road.

MUIR'S PATENT — PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge.

Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing

By Her Majesty's — Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Arabeum, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber Deals, Oak Planks, Scantlings, Sash Stiles, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the floor-boards generally sold being sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present mon'th:—

¾-inch yellow or white, 13s.	to 14s. 6d. per square.
1-inch do.	18s. 6d. to 18s.

Yellow battens, 2s.; Deals, from 3s.; and plank, from 4s. per 12 feet; timber, from 70s. per load; and every kind of English and foreign wood. Goods at the lowest prices direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

DURRAND'S "BONDED and SUFFERANCE WHARF," TIMBER-PRESERVING WORKS, ROTHERHITHE.—BETHELL'S process consists in preparing timber with creosote, or oil of tar, and is particularly applicable for Railway Sleepers, Bridge Timber, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges. And also for use in the colonies, as being perfectly impervious to the attacks of all land or marine insects. PAYNE'S, Sir W. BURNETT'S, and MARGARY'S processes, in addition to their preservative properties, are likewise non-combustible, and are, consequently, adopted in her Majesty's Dock-yards, as a preventive of fire in Ship Building; and are also extensively used in House, Farm, and general Building.

Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.

Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 3, Charlotte-row, Mansion-house, City.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge, are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

PADDINGTON SAWING, PLANING, and MOULDING MILLS, 3, Irongate Wharf, Praed-street-Edgware-road, near the Great Western Railway Station, and abutting on the Grand Junction and Regent's Canals, affording the advantage of railway and water carriage.

W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING-BOARDS, MATCHED BOARDING and MOULDINGS of every description prepared in a superior manner, from the best goods.

W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive mills afford convenience to purchasers for immediate conversion of their goods, on the most moderate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded post-free, on application.

N.B.—Sawing and planing for the trade.

STAINING DEAL TO IMITATE ALL KINDS of WOODS. It requires NO SIZING, and will stand the exposure to the weather. Price 8s. per gallon. Varnishes for W. TAYLOR'S Stains may be had at the Factory, 57, James-street, Oxford-street.

AN ORIGINAL OAK CEILING, of the fifteenth century, richly panelled, with spandrils, brackets, and pendants, 27 feet by 18. TO BE SOLD CHEAP, to make room, for alterations.—Address G. L. Post-office, Upper Baker-street, New-road.

TIMBER YARD and BUSINESS, near the Tottenham-court-road.—TO BE DISPOSED OF, a large TIMBER YARD, and an old-established Business, in the above desirable locality.—For particulars, apply to Mr. WM. SYKES, Timber Merchant, 11, Osborn-street, Whitechapel.

SAW MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw mills for exportation or otherwise.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the sawing effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption over any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 800 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to an extent of 300 miles, resulting from a close investigation of its merits recently made by some eminent French Engineers

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 28, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained, on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

SOUTH WHARF, PIMLICO.—To Builders and Others.—J. and E. KNIGHT return their sincere thanks for the patronage they have hitherto received, and beg to say they are now selling their LATHS at 3s. per load. Warranted to be of the best quality.—A good supply can be had.

WANTED to PURCHASE, an Eight or Ten-horse PORTABLE STEAM-ENGINE, new or second-hand. Terms cash, delivered in London.—Address (with full description and lowest price) to T. S. W. care of Henry Grainger, Esq. 37, Bucklersbury.

WEST of ENGLAND FIRE and LIFE INSURANCE COMPANY, Instituted, 1807. Capital, £1,000,000.

Persons INSURING against FIRE, or effecting POLICIES upon their own or the LIVES of others, share largely in the SURPLUS PROFITS, free from all possibility of loss.

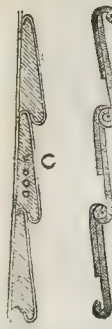
Prospectuses and every required information may be had of any of the Agents in England, Scotland, and Ireland; and of CHARLES LEWIS, Esq. the Secretary, at the Head Office in Exeter; and also at the Office of the Company, 29, New Bridge-street, of the Manager and Agent for London,

JAMES ANDERTON.

TO ARCHITECTS

COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

PATENT DATED 9TH DAY OF OCTOBER, 1852.



CLARK & CO.'s

NEW PATENT COMBINED IRON AND WOOD

REVOLVING SHUTTERS,

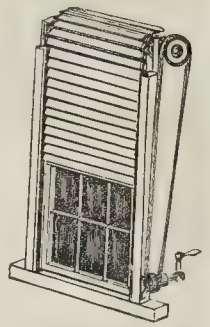
AND

IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.

The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section. A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected to either, and can be ROLLED EITHER WAY, greatly facilitating their application.

C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the lath to split, and combining the lightness of wood shutters with the durability and appearance of iron.

CLARK and CO. have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwelling-houses, thereby saving a large item in their cost (the fixing), and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the whole can be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.



IMPROVED DRAWN BRASS SASH-BARS AND STALL-BOARD PLATES.

ENGRAVING IN THE FIRST STYLE OF WORKMANSHIP.

PROSPECTUSES, ENGRAVINGS, AND TESTIMONIALS FORWARDED, ON APPLICATION TO

CLARK & CO. ENGINEERS,

PATENT SHUTTER WORKS, 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

BUNNETT AND CO. ENGINEERS AND FOUNDERS,

26, LOMBARD-STREET, LONDON, AND DEPTFORD, KENT,

ORIGINAL PATENTEES OF REVOLVING IRON AND WOOD SHUTTERS

AND OF THE

NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER,

For which the PRIZE MEDAL of the GREAT EXHIBITION of 1851 was awarded.

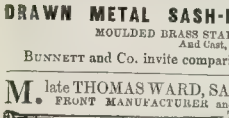
BUNNETT and CO. are also the ORIGINAL PATENTEES and MANUFACTURERS of

DRAWN METAL SASH-BARS, FOR SHOP FRONTS, SKYLIGHTS, &c.

MOULDED BRASS STALL PLATES, INTERNAL AND EXTERNAL BRASS FITTINGS,
And Cast, Drawn, or Stamped Metal Work of every description.

BUNNETT and Co. invite comparison, and challenge competition, either in Style, Quality, or Price.

M. late THOMAS WARD, SASH and SHOP FRONT MANUFACTURER and JOINER to the TRADE, 198, Upper Whitecross Street, St. Luke's.
Established 1839.



Upwards of 300 good seasoned doors in stock.

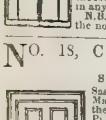
Workmanship and Materials of the best description.

Estimates given for every description of work.

By enclosing a postage stamp a full list of Prices will be returned.

REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 96, Regent-street, and at his Steam-works, 135, Old-street. These shutters have fully the security, durability, and simplicity. References can be given to noblemen whose mansions are fitted herewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Boards and Plates, &c.

CHARLES WM. WATERLOW, Manufacturer of Sashes and Frames, and Joiner to the Trade.



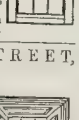
121, Bunhill-row, Finsbury square.

Well seasoned materials, superior workmanship, lowest prices.

Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.

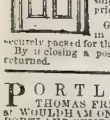
Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.

N.B. This establishment is worth the notice of all engaged in building.

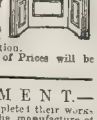


NO. 18, CURSITOR-STREET, CHANCERY-LANE.

SANDS and EMERY,



Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.



Glazed and Polished Goods in Walnut and Mahogany, securely packed for the country and for export ation.

By inclosing a postage stamp, a full List of Prices will be returned.

PORTLAND CEMENT.—THOMAS FREEN and CO. having completed their works at WOULDHAM-ON-THE-MEDWAY for the manufacture of PORTLAND CEMENT, beg to inform their friends and the public that they are now ready to supply them with cement of superior quality on reasonable terms. Roman Cement and Plaster of Paris Works, Tuscany Wharf, Canal-road, Kingsland-road.

PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, be ing of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementing qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the best cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Lias Lime Works, near the River Avon, and sent to all parts of the Kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, as also at his Wharfs in London, 6, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Millwall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, End-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Marble Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1852, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. See ant of COMPARATIVE EXPERIMENTS on the strength of this and other cements (as at the Institute of Civil Engineers), to be obtained from the maker, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of the cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent" as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Wellington-street, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 31, King-street, Liverpool.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg, in a similar way at Alderney, and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.
Agent for Southampton, R. L. PLUDER, American Wharf.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks Grindstones, Cement Chimney-pots, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Portolano.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.
CHARLES RICHARDSON, 6, South Wharf, Paddington.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone, and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILLIPS, HALL, and CO. at the Warehouse, 52, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

PAPER-HANGINGS and WALL-DECORATIONS E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tape-try Silk Hangings. Every description of Paper-hangings, from the plainest work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters Centres, Medallions, &c. from the drawings of the best artists in the country of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.

Machine Printing Works, Royal Mills, Wandsworth, Surrey;
Block Printing Works, 451, Oxford-street, London.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are now ready to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 30, OXFORD-STREET, where all goods can be obtained on the same terms as at the Factory.

GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 113, Whitechapel, near the Obelisk, and 500, Oxford-street.

PAPER-HANGINGS.—R. HORNE, PAPER HANGING MANUFACTURER, 41, Gracechurch-street, City, invites builders and the trade to inspect his extensive stock of NEW DESIGNS in PAPER-HANGINGS, which, by the aid of powerful machinery, he is enabled to offer at the following prices, in stock quantities, for cash only, viz.:—

Stout lining paper	5d	Per Piece
Superior ditto	6d. and 7d	
Bed-room papers, in great variety	8d	
An excellent oak paper	8d.	
Sitting room ditto, on blended grounds	7d to 9d	
Hand-made marbles	9d. to 8s. 6d.	
Good satin papers	1s 6d. to 2s. 9d.	Per Piece
Flock papers	2s. 6d. to 3s. 6d.	
Hand-made granites	9d to 1s. 6d.	

Every novelty in French and English panelled decorations always on hand; also excellent imitation of fancy woods.

N.B. Patterns sent into the country, by post, showing the style and quality of the above, on receipt of two stamps, and the goods despatched with promptitude on receipt of a remittance to the amount of the order given.

TWENTY THOUSAND PIECES of PAPER-HANGINGS, in new designs, very handsome patterns for sitting-rooms, 1½d. to 4½d. per yard; satin drawing-room paper, from 2½d. to 3½d. per yard; bedroom paper, from 8d. to 9d. per piece; patent silver drawing-room paper, warranted not to tarnish from exposure to gas or the atmosphere, in elegant designs, from 4½d. to 6d. per yard; gold and flock penny paper at reduced prices. Patterns sent to all parts of the Kingdom on applying, per post, to W. REDKESS, Paper-stainer, 63, Feuchurch-street, London.—Gutta Percha paper for damp walls.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Plare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

The Builder.

SATURDAY, APRIL 9, 1853.

THE publication of Captain Hay's Report "on the Operation of the Common Lodging-House Act" will aid the object we have in view in our exposition of the Homes of the London poor. Captain Hay appears to have accepted cheerfully this new branch of police duties, and to have entered upon it with energy and the right feeling. Up to December last, 3,300 persons keeping common lodging-houses, accommodating nearly 50,000 nightly lodgers, were under police inspection; and the number is now very much greater. The cases given serve to show over what a wide district the dreadful state of things already set forth by us extends. In a small room in Rosemary-lane, near the Tower, fourteen adults were sleeping on the floor without any partition or regard to decency; and in an apartment in Church-lane, St. Giles's, not 15 feet square, were *thirty-seven men, women, and children, all huddled together on the floor.*

As Captain Hay truly says, "The efforts of parties well inclined to promote the well-being of society will be of little avail whilst there are such causes in operation, sufficient to counteract all the exertions made to this end. Churches, schools, free libraries, and mechanics' institutes, all excellent in themselves, will be found to have but small results, whilst large masses of the population grow up so immersed in ignorance and vice as to look on it with complacency, and to live in it without disgust."

What we have ourselves seen since our last publication surpasses belief, and, moreover, has features which prevent us from going into details of the worst portion.

Under the pressure of a canvass for a professional appointment in the gift of the magistrates of Middlesex,* which was quite sufficient to absorb the day, we have, during the night, under a sense of duty, penetrated some of the darkest recesses of Whitechapel and its neighbourhood, and have seen men and women under circumstances wherein virtue is impossible, and indulgence in vice or the commission of crime seems scarcely other than natural.

O you! who, early taught what is right, and out of reach of want, are comparatively little tempted, and are restrained as well by fear of the opinion of your class as by your knowledge and religion,—view with charity and mercy the errors of your less fortunate brethren.

Let these scenes, however, pass. We will not pain our readers with the details, but will wait for the morning, and be statistical and cool.

The eastern portion of London, comprising the districts of Bishopsgate-street, Whitechapel, Goodman's-fields, Radcliffe-highway, Wapping, Commercial-road, Mile-end, Spitalfields, and Bethnal-green, extending over a large surface, and containing an immense population, is unknown land to many thousands. To form an idea of its continued rows of lanes and streets, let our readers refer to the map of London, and they will not fail to be struck with the size of this large portion of the metropolis, which is to a sad extent benighted and neglected. We will take a very small part of this space, viz. Bishopsgate-street and part of Whitechapel, and will commence with *New-court*, Charles-row, near Whitechapel Church,—a court containing eight houses, with two rooms in each. This place has long been inhabited by low Irish, and has been the plague of the whole district. The condition of the houses is bad; and they contained, before the interference of the police, not less than 300 men, women, and children. There is only one place of convenience for 300 persons. The condition of the court at the time of our visit was shocking. The water was served, or wasted rather, half an hour each day, and this was almost the whole supply; for only a small cask was placed for the permanent reception of water. This court has lately been purchased by a neighbouring manufacturer, for the purpose of extending his premises; and before our account goes to press, the whole of the tenants may have been dispersed to other places. An Irishman, of pale and unhealthy countenance, evidently half fed, said, when he left that place he did not know where to go; he would be obliged to "*intrude upon his friends.*" He had a wife and one child: two little children had died of fever. The young child was bleached, and although fifteen months old, did not look more than six or seven months. The face of the woman was disfigured by disease. A middle-aged woman, who said she had been turned out of the workhouse, was lying on the floor on a quantity of shavings. The charge for a bed of shavings amongst this class of poor people is one penny a day and night: the other inmates of this house had left, and the whole had to be turned out next morning: the week's rent of the two wretched rooms in this house was 2s. 6d.: the Irishman who kept the house works at Covent-garden Market,—traversing the long distance from this place to the market throughout the working days as early as four o'clock in the morning: from December till the beginning or middle of March (except Christmas week) his work is "very bad." He did not think that during the months stated his average earnings amounted to more than 2s. 6d. or 3s. a week; some days he did not even get 3d.: he had been obliged to live this distance from Covent-garden market in consequence of not being able to meet the expense of rent nearer, or rather was not able to help to pay by means of sub-letting. If obliged to obtain shelter in a lodging-house, he would be charged 3d. a night for himself, 3d. for his wife, and 1½d. for the child: this would be 7½d. a night, or 4s. 2½d. a week (much more than the man's present income).

Serjeant Price, an intelligent and active officer of the metropolitan police force, who has been intrusted with the direction of the lodging-houses of this district, gives this account of the former condition of New-court:—House No. 1. Ground-floor, Haslin, his wife,—daughters, aged 17, 14, and 8; visible means of the whole living,—by selling lucifer matches in the streets. Other floor, Flinden, his wife, a boy 17, and a girl 15, who sold onions and lucifers: the father had been out of work for three years (*they had no lodgers*). No. 2. John Collins paid 1s. 3d. per week for this room (ground-floor), occupied by the keeper, John Collins, his wife, boys 16 and 10, and girl 17; sleeping on the floor; no bedsteads: no bedding. Above, Bridget Horsam, a boy 10 years old, and Johanna Collins, the keeper's sister, sleeping on the floor: in all, eight persons in this house: the space of the two rooms would only be proper for the accommodation of three persons, allowing 30 superficial feet for each. The house was dirty, dilapidated, and swarming with vermin: this was the condition of two houses after they had been *thinned* by the police. The following is an account of part of a house of ten rooms in this

* The Islington District Surveyorship being vacant, Mr. Godwin, the conductor of this journal, has offered himself as a candidate. We hope we may be pardoned for pointing attention to his advertisement in another column, and soliciting such consideration for it as it may be thought to deserve.



THE DEAD AND THE LIVING: BISHOPSGATE-STREET DISTRICT.

neighbourhood (Rosemary-lane) let to the poor Irish at 1s. 8d. per week: one of these rooms, kept by Daniel Jones, contained five beds, as they are called, but which, in fact, were nothing but bundles of rags, similar to those described in Clerkenwell. In "bed" No. 1, Daniel Jones, the keeper, his wife, and children aged 8, 7, and 5 years.—"Bed" No. 2, occupied by Cornelius Toomey (paid 6d. a week to the keeper), John and Peter Shea, in the same bed, paid 6d. each: 1s. 6d. for this bed.—"Bed" No. 3, John Sullivan and his wife, paying 7d. a week.—"Bed" No. 4, Cornelius Haggerty, his wife, boy 13, and girl 11; pays 1s. per week. —"Bed" No. 5, Patrick Kelly and wife, paying 11d.: in all, fourteen persons in one room; the original rent, 1s. 6d. The keeper received from lodgers 4s. per week. At the time of Serjeant Price's visit (24th of last August) the greater portion of these persons were, in a state almost of nudity, huddled in this manner together.

Charles-row, in which is situated the court above described, is a narrow street of small houses, occupied at one end by poor Irish, and at the other by German musicians, sugar-bakers, &c. who live very thickly together.

In many streets adjoining are places over populated and very unwholesome; indeed, Whitechapel Church may be considered to be the centre of an immense mass of poverty, vice, and crime. Whitechapel is on the north and south divided by many streets and narrow courts, which are inhabited by very poor people, many of whom are weavers, Irish tailors, Jews, costermongers, dock labourers, and thieves: the great extent of this destitution is alarming.

For an hour or more we traversed narrow alleys and places which do not deserve the name of streets: some of the courts were in decent condition, but although in most instances the places within the liberties of the City were provided with main drains, many of them, owing to bad pavement and the dirty habits of the people, were partly strewed with decaying matter and stagnant water. In a narrow passage near "Rag-fair," there is a piece of land in a close neighbourhood covered with the refuse of fish, vegetables, broken baskets, dead cats and dogs, piled up, enough to create a fever in any neighbourhood. Before the summer weather sets in a remedy for such abuses should be found. In most of the small courts in this neighbourhood the landlord obtains a rent of 3s., 3s. 6d. and even 4s. for two very small rooms, and surely ought to attend to the provision of proper draining and paving.

It seems difficult to discover the climax of London poverty and destitution. In every depth there is a deeper still. The prices of various kinds of provisions in these neighbourhoods give a forcible notion of the condition of their swarming population. In most of these neighbourhoods you can purchase a halfpenny worth of fish or a halfpenny worth of soup, and other matters in proportion. The luxuries are singular in their price and character, a farthing's worth of damaged oranges, for example, being hawked about the streets and sold in the shops. "Rag-fair," that well-known mart for every description of second-hand clothing, will supply good habits at any price.

If some of our readers wish to judge for themselves, Cutler-street, a turning in Houndsditch, will lead them to the district. It is a curious scene: hundreds of people are assembled in the streets, which are so thickly covered with merchandise that it is difficult to step along without treading on heaps of gowns, shawls, bonnets, shoes, and articles of men's attire. "Here Greek meets Greek," and not without "the tug of war." No person can form an idea of this anomalous multitude but by a visit: all poor and squalid; the children pinched and bleached, not "brought up," but, as Lamb says, "dragged up." Here may be seen in one of the markets, formed by some of the pillars and covering of the Hyde-park Exhibition, the great dealer, standing in his well-known place, and purchasing perhaps many cartloads of clothing for exportation to the colonies, Ireland, and elsewhere; and other dealers of various grades, until we reach the merchant whose capital is less than a shilling, and who daily gets a *living* by the purchase of shoes, hats, and other matters, the uses of which, looking at their condition, it would be difficult to guess. Interesting, however, as is this phase of London life, it would be foreign to our present purpose greatly to extend particulars: we cannot, however, avoid saying something more, our object being to show, by the provision of clothing made at "Rag-fair," the poverty of a class.*

One of the London Missionaries (a body whose valuable services can only be properly appreciated by those who understand the nature and extent of the evil to which we are directing attention) says:—"Persons who are accustomed to run up heavy bills at fashionable tailors and milliners, will scarcely believe the sums for which the classes we are describing are able to purchase the same articles for their own rank in life."

One of the Missionaries who recently explored Rag-fair, reported that a man and his wife might be clothed from head to foot for from 10s. to 15s. Another Missionary stated that 8s. would buy every article of clothing required by either a man or a woman, singly. In Pennant's time, it was less: he says (speaking of the other Rag-fair), that a dealer pointed out a man to him, and said,—"Look at him. I have clothed him for fourteen-pence." A third Missionary reported, "There is as great a variety of articles in pattern, and shape, and size, as I think could be found in any draper's shop in London." The mother may go to "Rag-fair" with the whole of her family, both boys and girls,—yes, and her husband, too, and for a very few shillings, deck them out from top to toe. I have no doubt that for a man and his wife, and five or six children, 1*l.* at their disposal, judiciously laid out, would purchase them all an entire change. This may appear to some an exaggeration; but I actually overheard a conversation in which two women were trying to bargain for a child's frock; the sum asked for it was 1½d. and the sum offered was 1d. and they parted on the difference."

The following is the bill delivered by the dealer to one of the missionaries, who was requested to supply a suit of clothes for a man and woman whom he had persuaded to get married several years after the right time:—

	s.	d.
"A full linen-fronted shirt, very elegant...	0	6
A pair of warm worsted stockings	0	1
A pair of light-coloured trousers	0	6
A black cloth waistcoat	0	3
A pair of white cotton braces	0	1
A pair of low shoes	0	1
A black silk velvet stock	0	1
A black beaver, fly fronted, double breasted paletot coat, lined with silk, a very superior article	1	6
A cloth cap, bound with a figured band...	0	1
A pair of black cloth gloves.....	0	1
	3	3*

The man had been educated, and could speak no fewer than five languages; by profession he was, however, nothing but a dust-hill raker.

The bill delivered for the bride's costume, is as follows:—

	s.	d.
"A shift	0	1
A pair of stays	0	2
A flannel petticoat	0	4
A black Orleans ditto	0	4
A pair of white cotton stockings	0	1
A very good light-coloured cotton gown	0	10
A pair of single-soled slippers, with spring heels	0	2
A double-dyed bonnet, including a neat cap	0	2
Brought forward	2	2
A pair of white cotton gloves	0	1
A lady's green silk paletot, lined with crimson silk, trimmed with black.....	0	10
	3	1"

The goods were selected by the missionary, and at the bottom of the bills the merchant marked:—

"P.S.—Will be very happy to supply as many as you can find at the same prices."

Petticoat-lane, not long before Strype wrote, had hedge-rows and elm-trees on both sides, "with pleasant fields to walk in." Close by, in Gravel-lane, till recently, stood the "Spanish Ambassador's house." Many of the courts and alleys leading out of Petticoat-lane now are in a miserable state. At each corner of the *lane* where it opens into Whitechapel High-street, is a public-house!* Many of the courts out of Bishopsgate street are also very bad. Maitland, speaking of some of the alleys, &c. in Bishopsgate-street ward, says, "Northward of Bethlem, in Bishopsgate-street, is Still-alley, which is but small; Garland-alley, an open place, at the upper end of which is an inn, as also a large yard for stabling and coaches, and but ordinarily inhabited. * * * Sweetapple-court, so called from Sir John Sweetapple, Goldsmith, the owner thereof—a handsome new-built place, with an open passage for carts, &c. Dunning's-alley, very large and ordinary; the west end divides itself, and falls into Halfmoon-alley, which leads into Moorfields; in this alley are these courts—Tripe-yard, very small and ordinary; Adam's-court, but small, with a passage into Sweetapple-court; Pump-court, but now Westminster-hall-court, indifferent, with a free-stone pavement; Cripple-court, very small and mean, with about two houses; Harrow-yard, also small and ordinary; Bell-yard, inconsiderable; Lamb-alley, very narrow and ordinary;" and so in similar manner the London historian continues to mention a long list of courts and alleys which come under the designation, *inconsiderable, small, and ordinary—long and mean—long, narrow, and ordinary*, &c.

Since the time of Maitland's survey (1735), the condition of these numerous alleys and lanes has become worse. During a visit at night of some hours' duration, we found in the interior of these dwellings varied and painful scenes of poverty. Some of the inmates of these houses are Irish tailors, who are much overcrowded, and a great plague to the magistrates and the police. Generally speaking, the people of this district, although struggling and very poor, have mostly some little stock of furniture, and a desire to preserve appearances. In Half-moon-street, which turns out of Bishopsgate-street, next the "Sir Paul Pinder," there are courts of miserable character. The houses in "Thompson's-court" are in a frightful condition, and in "Thompson's-rents" they are even worse. Order, cleanliness, or decency is out of the question.

The sketch on the previous page represents a scene which we have met with more than once during our perambulations,—the coffin of a dead child in the midst of the sleeping living. In a single room the family sleep, work, eat, and perform the various duties of life in the same room with the dead, and the evil is too frequently increased by the length of time the poverty of parties obliges them to retain the corpse until what they consider proper preparations have been made for the funeral, which seldom takes place in less than a week; instances have been known of the interment having been put off from twelve days to a fortnight. This is a difficult matter to deal with, for the prejudices

* There is another Rag-fair of ancient date, near the Tower,—Rosemary-lane.

* The granite obelisk recently put up in the High-street, by the way, is not pleasing in effect. It lessens too rapidly in size—not an uncommon error in such works—and is consequently, to that extent, rather an attenuated pyramid than an obelisk: it wants the true *needle* character.—(obelos.)

of the uninstructed are strong against the removal of the bodies of relatives until they are taken to the graveyard. It is most desirable that the feeling should be overcome, and proper places be provided for the reception and retention of the dead until the proper time for interment.

The contemplation of the swarms of children which fill the miserable dens we are describing is saddening in the extreme, reflecting, as one naturally does, on what their career, with very few exceptions, *must* be, and what it should and might be.

The friends of the poor child in its little coffin may rejoice!

ON THE DESIGN AND DECORATION OF DOORWAYS.

UNLIKE windows, doors are prominent features in every style, ancient and modern, northern or southern. Climate may cause a difference as to the value of windows, but not of doors, which were important in styles, wherein, as those of Egypt and Greece, windows were all but unknown; and all nations have marked on their respective architectures more or less vividly their sense of their importance. The Greeks, for example, by the double colonnade and the deep pronaos in front of their temples; the Egyptians, by the pyramidal moles or towers with which they are flanked; and even the western towers of the Gothic cathedral, viewed æsthetically, seem chiefly for that purpose.

After the enclosing planes of walls and roof, the doorway is the most indispensable feature of the structure, and therefore calls loudly for adornment, and should generally be distinguished by more impressive decoration than any other feature: differing widely as regards purpose or office from windows, it should never be made uniform with them in size or outline, as it too often is in modern works, to the neglect of distinctive character, variety, breadth, and other principles of composition.

As regards design, we have chiefly to consider not the door, but its case: the relative importance of the valve or door with reference to the whole composition of the door is less than that of the window with respect to *its* total: the window being stationary, nearly all design and decoration might be, and sometimes is, centred on it: the window proper may be almost the entire of the window composition, which can be made beautiful, without being extended to the jambs: the latter members at least may be slight, as suited to the reception of so gentle, so impalpable a visitant. It is otherwise with the door. Nevertheless, the door *proper*, or valve, is deserving of much more consideration than is usually bestowed upon it: generally speaking, it should be richer and more delicate than the jambs—a principle unrecognised in the present day. While we read in ancient works of doors of ivory, of silver, and of gold, we find in those of the moderns embellishment has been all but overlooked: bearing in some measure the relation to the surrounding jambs of picture to frame, the valve has in such edifices too often a temporary and unfinished appearance, lacking that geometrical grace of division and sculptural embellishment which its position unequivocally calls for. In dwelling-houses and other structures of various ranks, fashion has of late years done much mischief to this feature. Instead of our three or four panels in height, we have very frequently but one, the long lines of which injure the effect of the architrave-jambs, or pilasters, and give a liney appearance to the valve itself, instead of that broad superficial character which of right belongs to it.

As to the extraneous or general design of the door, the portico (sufficiently large to embrace and protect the opening) which has grown in England into the doorcase, is always the most effective, and where it can be had it is always proper in all countries, in all climates as protection from sun or rain, or from both: what shields from the one in the south we need against the other in the north. It yields the greatest scope for design and decorative effect, as it produces the broadest and deepest shadow, while the cylindrical surface of the columns gives the highest lights. Stone covers supported on brackets or suspended iron ones would, as regards the production of shadow, be efficient; but columns, besides breaking the force of the wind and protecting from the drifting rain, are the most beautiful. From the door-portico must originally have arisen the attached columnar doorcase or pseudo portico; but though the real portico forms a most beautiful accompaniment to the door, it is questionable if the engaged three-quarter-column doorcase so much used can be considered beautiful at all. Nothing is truly beautiful that lacks a motive, and this is without it: the columns support nothing that is serviceable; they are not the door-jambs, but an excrescence in front of them, stuck on, and generally without any connection or harmony with any other feature of the front, nor carried out in any way. We can have a projection to give emphasis to the doorway, and this of a sufficiently ornamental character, without columns, which seem out of place supporting so insignificant a burden as generally a block or two of stone, forming but a mere water-table.

The form and proportion and decoration of doors must undoubtedly harmonize with the order they are associated with, the spirit of which must pervade and reign throughout all parts of the edifice; but there is no necessary connection between a doorway and the orders at all, though the modern system-makers have considered and treated of them as inseparable: a column and entablature have no radical relationship to a door, nor any natural claim to become its case; its right it must purchase by being of use, the evidence and expression of which alone can justify its employment: a doorway is an aperture in a wall, and columns, or any part of columnar ordonnance, are not naturally called for by the requirements of the door itself, and cannot be employed merely as decoration. Make the columns support a covering sufficiently wide to be of service, *i. e.* place them at such distance from the wall that the covering may afford shade and shelter, and let them break forward from the entablature of the story or crowning entablature of the edifice, and no appendage could be more beautiful; without this they are unsatisfactory. If decoration should arise out of, or rather be the natural shape and vesture of utilitarian and structural requirements, the lintel or arch, which is the most important structural member of a doorway, should be the most ornamented, and by ornamentation be made the most conspicuous: the entire jamb border is important, and should receive treatment accordingly; but more than all the lintel, or arch (if it be circular-headed): it is essential to the existence of the opening or doorway, and should be the prime mark for beauty; observing, however, that decoration must not interfere with its expression of strength. On the lintel itself decoration might indeed be merely linear, or by mouldings; and sculptural enrichment placed over it as a crown.

After what is thus essential and indispensable, the thing most needed by a door is covering or protection from the elements; first to itself (the valve), being generally more or less ornamental, and liable to easy defacement; but more particularly to a person seeking or awaiting admission; and all appendages to doorways should be thus motived by shelter from sun or rain; beauty is to be invoked to preside over the formation of such necessary objects, and give to them due decoration. The door with these its natural adjuncts only is a feature capable of effective chiaroscuro, and of great artistic beauty, heightened by its appeal to our sense of fitness,—its intellectual grace and integrity.

To a window the attached columnar ordonnance is more excusable, if not justifiable: it is all the protection we can give it from the action of the elements, consistent with the non-obstruction of light; but to a door we want the broad overhanging pediment or canopy insisted on above; an exigency of our climate too often quite overlooked by architects, who forget what latitude they are in, and the frequency of wet weather in these islands. When this shelter is not yielded by the columns they have no meaning, and cannot properly enter into the composition of a doorway.

Nevertheless, pilasters, or antæ, or rather jambs, assuming that character, placed on the edge of the opening, the reveals of which are formed by their return sides, are warrantable as supports to the lintel; as indeed are columns so placed, and with their axes in the external plane of the wall, or somewhat farther out. The principle is well exemplified by Sir C. Barry, in the windows of the Traveller's, and Reform Club Houses, Pall-mall. Columns might also be used with propriety *within* doorways, as Gothic shafts are used in those of cathedrals; if not at the reveals supporting a corresponding series of arches, yet at least placed as divisions of the entire aperture into compartments, and supporting an entablature or circular arches; they would be justified by this, that we could, by so introducing them, have an opening of doors or group of doors that would be impossible without them.

The employment of the column is justifiable whenever it is called for to support what needs to be supported, and what is worthy of support, no matter where it is used or where it rests, whether on the ground or on a corbel, or an arch, or whether attached or detached, or grouped or coupled, so long as these conditions be fulfilled.

As I said before, the portico is the completest shelter and the most perfect element of beauty; but where there is no space for portico, or where its columns would be inconvenient or obstructive, covering may be obtained without supports from below; and such coverings are also susceptible of great beauty, as could be proved from existing examples of this species of design in London and elsewhere, among which might be named the description of old doorway called the shell-pattern, where the door is sheltered by a far-projecting circular pediment, the concave surface of which is wrought into the form of a shell. There is more good sense and reason in such a door-case, quaint though it seem, as that of Barber Surgeons' Hall, than in all the pillared portals of Italy. The whole is the offspring of ideas of utility, from which the decoration blossoms as from a stem. Here sculptural decoration is very properly confined to the lintel, which is surmounted by the company's arms, while shelter is secured by a form which largely contributes to the artistic effect, a form susceptible of great picturesque beauty and endless variety.

Jambs, lintels, corbels, the latter decorated as consoles (or in accordance with the style of the edifice), springing from the upper part of the jambs (or rather to preserve the jambs entire from shafts outside of them), and supporting a canopy or pediment, these are the elements of the design and decoration of external door-cases, which unbiassed judgment and pure considerations of constructive requirement would lead to, where neither a sufficiently deep recess nor a portico can be obtained; and beautiful is the composition which could be made by their combination. The projection of the covering might be increased to any reasonable extent without breach of artistic propriety, having no columnar ordonnance to govern it; while the jamb, for greater dignity, may be made broad and bold; it may be variously formed and decorated, it may be richly moulded, many-shafted; it need not be confined to the usual one or two fascias and a moulding and fillet; there are other and perchance more beautiful arrangements.

It should be here observed, that the lintel and jambs having different offices, may be different in form and embellishment as far as may consist with a proper union, which must not be lost sight of. If embellishment beyond what is yielded by the form and decoration of these necessary members be required, a legitimate place for it will be found over the lintel or above the sheltering projection or cornice, which may be surmounted by carved or sculptured ornament, pyramidally composed. The coronets of the Jacobian period so placed are common-sense objects, as they declare themselves at once as having no part in the construction, but designed for ornament only.

A wide field for the exercise of invention and taste exists in the application, to door coverings, of iron and other metals; which also yield opportunities for the realization of much that is useful and beautiful in other features of archi-

tecture. I am aware of the objection that has been urged against this,—that metals treated as they should be, truthfully,—in obedience to laws of design derived from their own nature, must be discordant with the mural forms and proportions, which are adapted to a material (stone) of different capabilities, and having affinity with another department of nature. But I believe that they need not be discordant. I believe that the laws which must govern design in these materials are sufficiently flexible to admit of harmony between them; that such forms and proportions might be given to each substance that, while consistent with its own capabilities and properties, they would be also in harmony with the spirit of design adopted in the other. The wide difference between the forms and proportions of the Greek and Gothic styles, which both refer to stone, show what latitude there is in that material, at least for assimilation with another of a different kind. But other materials, truthfully treated, have been brought to harmonize with stone, as wood in the window, in the open timber roof, and other features of interiors; and why not iron?

In street or other architecture, where projections cannot be made, deeply recessed doorways answer the purpose of shelter, and are of sufficiently artistic capabilities to supersede the need of useless appendages, in the shape of columns, for decoration;* no arrangement being more susceptible of beauty in itself, by panelling and other embellishment of the reveals. Any additional dignity may be given to the outer opening by superficial and geometrical bordering, enriched or otherwise; a means of decoration which may be carried to any extent either in external or internal doorways. The Mahomedans resorted to this mode of door decoration, which assumed the form of panelled and enriched margins, sometimes more than one, and placed one within another. The pointed arch inserted in a square is a prevalent arrangement. The Mahomedans appear to have been more consistent and true, and to have done less violence in this respect to structural principle than we; and even the Egyptian doorcase is more rational than most of the forms assumed by the modern. But the palm of surpassing excellence may be claimed by the doorcase of the later Gothic—a style which seems peculiarly fitted for the consistent and beautiful development and clothing of such features. A doorway flanked by niches and crowned with ogee canopy, as at King's College Chapel, Cambridge, is not only abstractedly beautiful, but highly consistent with a true theory of the door. The idea of distributing the weight of a deep pointed arch among a series of columns or circular shafts along the broad reveals, is a happy one. The visitor passes into the sacred place as through a solemn and beautiful grove. A figure on either side of a dwelling-house door, symbolical of Penates, or household guardian powers, is also a happy thought, which might be imitated or introduced into any style, as an appropriate and significant decoration. In fact, it must be admitted that the most rationally-treated doorways, the most beautiful and true,—which, indeed, may be said of windows,—are to be found in the Gothic; where decoration is chiefly confined to the essential and indispensable features.

But the Anglo-classic architect has elements as beautiful at his command, and the same motive to give them unity and life, though no adequate result has been realised. In the case of the door he has, by means of broad covering, opportunity for the greatest beauty and grandeur of light and shade,—opportunity peculiar to the door, for in the window any such provisions for chiaroscuro would not only be useless, but prejudicial. Nor in reference to reveals has invention been more alive. It is strange that architects have always confined themselves to square and generally shallow reveals in the classic. Why should reveals be always at right angles? Square reveals are often desirable for vigour of effect, yet I cannot see why an appropriate series of mouldings cannot be sometimes applied to the decoration of jambs or reveals *within* the face of the wall. They would harmonise as well with the columnar ordonnance in the classic façade as in the Gothic. Why should all mouldings and other ornaments invariably project from the face of the wall in classic architecture? To constructive principles and theories all such questions should be referred: deep recesses and splayed reveals are as needful, I conceive, in Classic as in Gothic, and as susceptible of appropriate decoration by means of panels, niches, columniation, or arcuation. An external doorway in any style in the same plane, or nearly so, with the outside of the wall, and void of portico, canopy, or sheltering projection of some kind in our rainy climate, is a dreary and absurd object. It is absurd, not because it produces no shadow: the object of porticoes, recesses, or canopies is not, though most writers on the subject would seem to hold the affirmative, for this purpose: they would not be justifiable on the ground merely of artistic effect: utility must be the ruling motive, and I believe it is a philosophical law that power and beauty shall follow this. I believe that utility and beauty in architecture, generally speaking, have an identity of principle and are inseparable; that utility ignored is beauty lost. Let the architect consider what arrangements would best administer to comfort, health, convenience, and pleasure; and the general forms called by those considerations into existence will be those most susceptive of a graceful and effective treatment. I believe this will be found especially true in reference to the subject of this paper.

In addition to the essential members before mentioned, over most doorways of dwelling-houses a fanlight is necessary; and this need for association of door and window is a legitimate source of originality and variety: but instead of this compound feature assuming the thousand possible shapes that might have been expected, it has struggled but through one or two fixed forms, and those quite at variance with good sense and architectural logic: for instance, between the door and the fanlight over it, instead of an impost, which is the natural division, occupying this place, we generally find an unmeaning fragment of an entablature supported on two columns inserted in an opening much wider than the lobby, in the vain endeavour to make the house look larger than it really is, and only making it look common-place. Where a fanlight cannot be had with propriety large enough, there is nothing better for lighting the lobby than the rather old-fashioned side-lights.

With the necessary members, and without anything expletive or obsolete, doorways are capable of much and varied expression of character by their proportions and decoration: and this will be a primary consideration with the judicious designer; for at the doorway the expression of the building ought to be more intense; there, most clearly should be indicated the mood of mind with which it should be entered. Low and broad doorways, for example, as in most of our mediæval cathedrals, express very properly the virtue of humility, which I think should be the expression universally of the entrances to the sanctuary; while there are other buildings, on the contrary, as palaces, the doorways of which may assume an air of grandeur and triumph. In the various classes of domestic buildings the doorway may hint at the rank and character of the occupier.

Vitruvius, as well as most modern authors on the subject, has endeavoured geometrically to fix the form and proportions of doors from the proportions and character of the orders with which they are associated; but this, rightly considered, is so far taking architecture out of the sphere of fine art, and treating it as a science only. When Vitruvius prescribes that the profiles of the architrave and other members be in conformity with the character of simplicity or elegance which belongs to the order employed in the edifice, his teaching is more consistent with a true theory of the art on which he writes. The order employed in the building is certainly the regulator of the character and style of the door, which must unite with the rest of the composition in one harmonious expression of the ruling idea or tone of feeling sought to be conveyed.

In Gothic buildings there are many features, though distinct and independent in themselves, that are pressed into this service of expression,—features round which the door-case, as it were, flings its arms; as, for instance, niched figures, which, whether introduced into the reveals, or placed in front on each side, and worked into one composition with the door itself, are very appropriate associates and appendages of an entrance, besides being beautiful. This principle of composition in Gothic is well worthy of imitation in classic architecture, in which other features may be thus united, as windows to a greater extent and with greater effect than they have yet been. This expression of 'doorway' may have its preludes in the shape of outworks or advancing decorations, as statues of men and animals, after the manner of the sphinxes and obelisks of Egypt.

If we were true to our intuitions, and worked in a free and independent spirit, unfettered and unawed by precedent, nor intimidated by the want of it, the lines of distinction between the styles would, I think, be less strongly marked. Two styles taken up by the same people in the same climate for similar purposes must have a tendency to approach; for it was different people and different climates and purposes that evolved them originally from the same type. If we constantly referred to nature and our own judgment, and instead of taking the Italian solution of the classic architecture, solved the problem for ourselves, we might speedily wipe off the reproach of corruption and falsehood which has been justly thrown upon the style as embodied in modern works, and retrace our steps towards purity and truth. There is, indeed, no other way. We must take nothing upon trust, however venerable, but bring all to the right test of nature and reason. The long and universal establishment of certain forms and arrangements is no proof of their being right, nor reason for their being continued. Samuel Huggins.

* I consider, however, that a cornice by way of drip-stone is always a necessary feature, however deep the recess, to receive the water that streams during rain down the face of the wall, to discharge which sideways it should be circular or triangular. It may be sustained by brackets or consoles, but is not of sufficient importance to call for columnar support.—S. H.

SCULPTURE FOR THE LONDON CORPORATION.

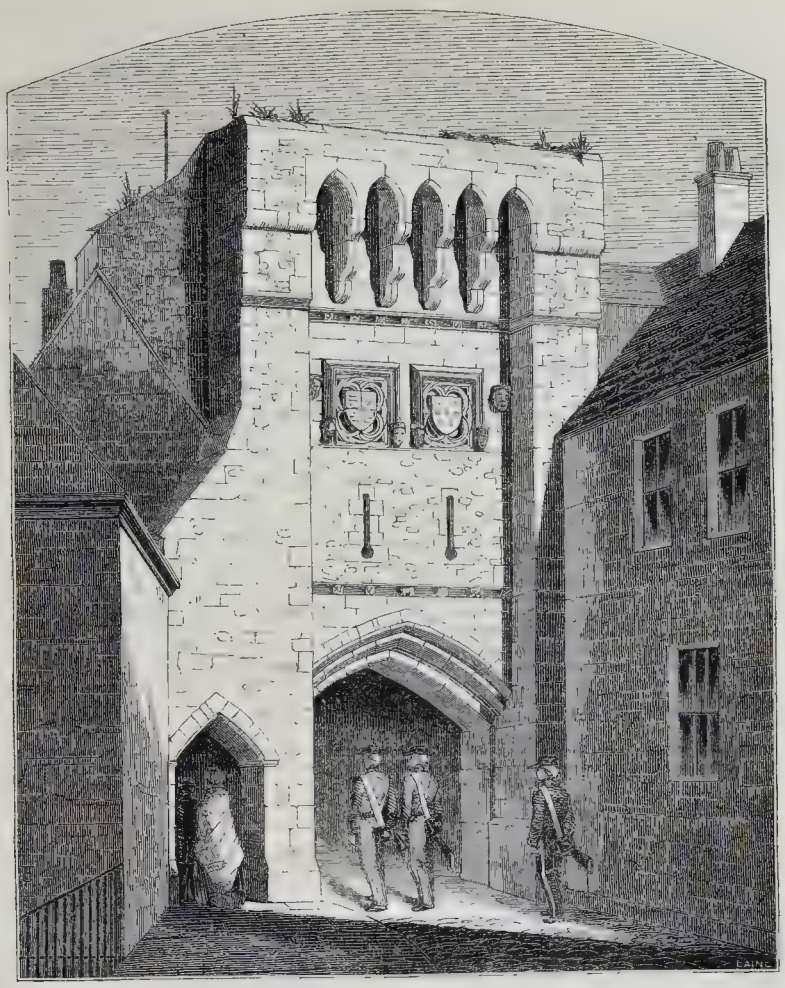
Our readers are aware of the determination on the part of the Corporation to commission the production of a certain number of statues for the adornment of the Mansion-house,—a determination for which they and their architect, Mr. Bunning, deserve the warm thanks of all who are interested in the progress of the fine arts of this country. In carrying out their intention, the Corporation wisely avoided competition; they visited various studios, and then named by ballot six sculptors who should each be commissioned to produce an ideal figure from one of the English poets. The artists selected are Messrs. Bailey, McDowell, Foley, Lough, Calder Marshall, and Thrupp; and they have each submitted a sketch in plaster of their design, one fourth the real size, which is to be somewhat larger than life. The subjects are—following the same order as the names:—"Bright Morning Star," Milton; "Leah," from Moore's Lives of the Angels; "Egeria," from Byron's Childe Harold; Comus, Griselda, and a figure called the "Lion Slayer," unappropriated. This last is to be withdrawn, and a substitute provided.

The statuettes for the most part promise very well, but, being little more than sketches, everything will depend on the manner in which they are carried out, and for this, of course, the corporation depend on the reputation of the sculptors. We sincerely hope that the result will prove satisfactory.

UNIVERSITY OF DUBLIN COMPETITION.

The Board of Trinity College, Dublin, at a meeting on Saturday last, finally resolved to adopt the design of Sir Thomas Deane, Son, and Woodward, for the extensive additional buildings,—museums, drawing-schools, and lecture-rooms,—for the general plan of the interior arrangements. The competition was limited to two or three architects.

Brickworks at Rugby.—Extensive brickworks, we hear, are being erected on the Lawford-road, for the manufacture of bricks by Mr. Beart's patent process.



ANCIENT CITY GATE, WINCHESTER.

ANCIENT GATEWAY, WINCHESTER.

WE have at different times laid before our readers sketches from Winchester, and now add to the series a view of one of the old gateways, as it appears upon entering the town. It is "Decorated" in character, and very good. The stonework of the smaller archway is not original.

T.

PRESENTATION OF HER MAJESTY'S MEDAL FOR ARCHITECTURE.

INSTITUTE OF BRITISH ARCHITECTS.

ON the 4th of April, the Earl De Grey, President, took the chair, to present the medals which had been awarded by the Institute.

Numerous donations of books, &c. were announced, and, amongst other objects, Mr. Godwin presented, on the part of Messrs. Maughan and Fowler, a view of the church of St. James, at Louth, and a series of tracings by M. Hittorff of his designs for the Napoleon Circus, at Paris, making some reference to the construction of the building. The same member also exhibited a series of drawings by the Baron Jolly (forwarded through Mr. Mogford) of a very curious chapel at Antwerp; and afterwards a number of architectural medals by M. Wiener, of Brussels. To the peculiar excellence of these medals, in the representation of architectural subjects, Mr. Godwin called particular attention; and stated that M. Wiener proposed to issue a series of such medals, illustrating the principal buildings of all the principal cities of Europe, so as to form a medallic history of architecture.

Professor Donaldson concurred in expressing admiration of M. Wiener's intention, and its successful execution, so far as it was carried out, and expressed a hope it would be supported. He then presented, from Mr. James Yates, medallic illustrations of the Free School and Town Hall of Birmingham.

Mr. Tite drew attention to a scarce medal of Sir C. Wren, with St. Paul's as the reverse, executed in the lifetime of that architect. He had only seen two copies of this medal, and thought it would be very desirable if another could be obtained for the Institute.

Mr. Scoles, hon. sec. having announced the subjects for which medals and premiums for the year 1853 would be awarded,

The Chairman then proceeded to distribute the medals awarded for 1852, viz.,—

To Mr. Chas. T. Hargrave, C.E. for his Essay "On the Construction of Walls, as influenced by local circumstances and the materials most readily available."—A Silver Medal of the Institute.

To Mr. John H. Chamberlain, for his Essay "On the Introduction of Colour, including Paintings in Fresco, to promote or heighten the Effect of Architectural Composition generally."—A silver Medal of the Institute.

To William George Coldwell, Associate, for his Essay "On the Advantage to Architecture which has resulted, and what further Advantage may be derived, from the use of Iron, both as to Construction and Embellishment."—A Medal of Merit.

To Mr. James Thomas Knowles, Jun. for his Essay "On Architectural Education."—A Medal of Merit.

To Mr T. A. Britton, Student, for his "Sketches for the Month."—A Premium in Books,—and addressed to each recipient some appropriate remarks.

The Chairman proceeded to observe that the last prize to be presented was the Royal gold medal, which had been awarded by the Council, with the unanimous sanction of the members, to Sir Robert Smirke. His Lordship read a letter from Colonel Grey, intimating her Majesty's approval of the proposed bestowal of her medal; and Mr. Scoles read a letter from Sir R. Smirke, stating that, in consequence of ill health, he must necessarily depute his brother, Mr. Sidney Smirke, to receive the medal on his behalf.

The Chairman then, addressing Mr. Sidney Smirke, expressed his regret at the unavoidable absence of Sir Robert; and, after a brief but happy reference to the artistic ability of the father of that distinguished architect, adverted to the power evinced by Sir R. Smirke, so long ago as the year 1809, in regulating and controlling the re-erection of Covent-garden Theatre in a very short time after its destruction by fire. Efforts and exertions such as these the public were now accustomed to; but they had not even now been surpassed. Alluding briefly to the other works of Sir Robert, down to his latest structure, the British Museum, his Lordship concluded by acknowledging the valuable aid which that architect had received from Mr. Sidney Smirke, and by expressing the pleasure he felt in presenting to the latter, on behalf of his brother, the medal awarded by the Institute.

Mr. Sidney Smirke acknowledged the honour conferred upon his brother, in a graceful and feeling address, from which we quote the following passage:—"It is obviously and naturally impossible," said he, "that I, as the brother of Sir R. Smirke, should be able to offer a safe and trustworthy opinion on the judgment which has actuated the Institute in bestowing upon him this truly Royal gift. But I can trust myself to say thus much, as a member of this Institute and of this profession, that I feel convinced that my brother's example has been of great permanent utility to the profession, by elevating and purifying its character. On questions of taste there must always be diversity of opinion and fluctuations of fashion; but on questions of moral right and wrong there can be none. The standard of honour is fixed and immutable; and it is to me a source of pride and gratification to reflect that my brother's example, and the whole course of his professional life, have been well calculated to teach us this lesson—that the only way to secure the permanent goodwill and respect and regard of our brethren, is to see that our conduct can be measured by that high standard."

Mr. Donaldson revived the subject discussed last year,—the dilapidated condition of the Royal Tombs in Westminster Abbey; and

The Chairman stated, that when he had brought that subject before Prince Albert, his Royal Highness had entered into it with the greatest interest and zeal. The unsettled state of public affairs had probably diverted the attention of the Government from it; but he should be most happy, at the instance of the Council, to urge again upon the attention of the Prince Consort the importance of preserving from further decay the interesting historical monuments in question.

Signor Abbati then read a paper, in Italian, "On the Decorative Painting of Pompeii;" referring, in illustration of it, to an extensive series of drawings of the mural decorations of that long-buried city, with additional illustrations by

Mr. Digby Wyatt, who afterwards read a translation of the Signor's paper, to which we may refer hereafter. Mr. D. Wyatt added, in explanation, that Signor Abbati had been for twenty-six years an inhabitant of Pompeii, and was familiarly acquainted with every fragment of stone and stucco in its precincts. Educated as an architectural draughtsman and architect, he had become enamoured of the decorations of Pompeii, and had rendered valuable assistance to Herr Zahn, in his great work on those interesting remains. Signor Abbati had indeed long been engaged in tracing from the walls of Pompeii the paintings discovered under the local commissions; and the beautiful drawings exhibited were not copies, but actually tracings from the originals; the inspection of them being as much like seeing Pompeii as possible. Signor Abbati had otherwise distinguished himself at Naples; and he (Mr. D. Wyatt), with Mr. Owen Jones, had felt that the desire of the directors of the Crystal Palace Company to reproduce a Pompeian House in the new building at Sydenham, could not be better accomplished than by inducing Signor Abbati to visit England, and to bring his drawings with him. Mr. Wyatt then proceeded to give some interesting particulars in illustration of the design and execution of the stucco work and frescoes of Pompeii; displaying, in the course of his remarks, a mastery of the historical and scientific peculiarities of both. He concluded his observations by alluding to the liberality of the Crystal Palace Company, which had rendered available to the British public the researches of Signor Abatti; and, in reply to Mr. Donaldson, who expressed a wish that the drawings might remain for examination and discussion at a future meeting, he regretted that such a course would be impracticable; but hoped that hereafter, within the walls of the Crystal Palace, the institute would have an opportunity of entering more fully into the subject.

Mr. Tite and Mr. Papworth offered some practical observations on the importance of the study of decorative art by architects, which, as the former gentleman observed, was lately too much left to upholsterers in England.

Mr. Donaldson proposed a vote of thanks to the directors of the Crystal Palace Company for the taste and liberality which had induced them, under good advice, to devote large sums of money to the formation of such a museum of art as was hitherto unknown, and which ought long since to have been undertaken by the Government.

After other votes of thanks the meeting was adjourned.

ON THE CONSTRUCTIVE PRINCIPLES OF THE PRINCIPAL STYLES OF ARCHITECTURE.

The following is an outline of a paper on this subject read at the Royal Institution of Great Britain, on the 4th March, by Mr. Edward A. Freeman, M.A.

The lecturer stated his object to be to trace out the essential character of the principal styles of architecture as directly derived from their constructive principles, with as little reference as possible either to mere ornamental detail, or to the outlines and ground-plans of buildings. The latter are closely connected with the question of actual style; they modify it and they are modified by it; but they are directly derived from considerations of habit, convenience, or religion, rather than from the real constructive origin and principle of the style itself.

The constructive origin of each primitive and unborrowed style is generally to be looked for in the sort of primitive habitation which each nation seems to have imitated in its first architectural works, that, namely, with which each had been most familiar in its primitive and uncivilized state. This subject has been worked out in the well-known essay of Mr. Hope, and more recently treated of by the lecturer himself in his History of Architecture. The Egyptian architecture reproduced the primitive excavation, the Grecian the primitive hut, the Chinese the primitive tent; each presenting a stone imitation of the earlier and ruder fabric.

The constructive principle of a style depends upon the manner in which it connects distant masses, as when two walls are connected by a roof, or two jambs united into a doorway. This connexion must be effected in one of two ways, either by the *Entablature* or the *Arch*. In the Entablature system the two upright masses are connected by a third laid on the top of them, and kept together simply by cohesion; in the Arch system, the connexion is effected by a series of masses (technically called voussoirs) which, when arranged in a certain manner, are kept together without direct support from below, according to a certain law of the mechanical powers. The entablature can only have one direction, one essentially horizontal; but of the arch there are two principal forms, the round and the pointed, whose æsthetical effect is widely different. Hence we have three principal forms, the *Entablature*, the *Round Arch*, the *Pointed Arch*; each having its own leading idea, those respectively of *horizontal extension*, of simple *rest*, and of *vertical extension*, which are found carried to perfection in the three great styles of architecture, the Grecian, the Romanesque, and the Gothic.

The simple unadorned construction of the entablature may be traced in many primitive monuments, such as the disinterred cromlechs of north-western Europe, the so-called Druidical circles of the same region, and some of the rudest among the Pelasgian gateways of Greece and Italy. In a decorative form it produced several important styles of architecture, the native Indian, Persian, and Egyptian styles (all of which must be carefully distinguished from the later works of the Mahometan conquerors in the same countries), and its perfection, the pure and unsurpassable architecture of Greece.

These four agree in their constructive principle; they differ in their constructive origin. The Indian and Egyptian are derived from the imitation of excavations in the rock, the Persian and Grecian from the imitation of erections of timber. Passing by the two inferior and less important styles of India and Persia, the lecturer proceeded to contrast at length the two great forms of entablature, the Egyptian and the Grecian.

On this head he warmly combatted the idea that Grecian architecture was in any way borrowed from Egyptian. He would not at all depreciate the high position belonging to the Egyptian nation, as having attained a great degree of civilization at a very early period, or the great merit of the Egyptian architecture as the first distinct style developed, and one in a high degree stately and solemn, and admirably adapted to the nature of the country and to the genius and the religion of its inhabitants. But he could never admit that a stationary, undeveloping people could ever have had any important influence on a nation whose every product bears the stamp of originality, and which has been the permanent teacher of the human race alike in arts, and arms, in literature, and politics. Our poetry, our philosophy, our institutions, our architecture, are either lineally (however remotely) descended from those of Greece, or have been subject to most important Grecian influence; no such influence can ever be shown on the part of Egypt. The lecturer argued that both external and internal evidence was against any derivation of Greek architecture from Egypt.

The true Grecian architecture is the Doric, the direct emanation of the Grecian period, the pure representation of the timber construction. In the great Doric temples of Athens, the idea of horizontal extension, the soul of the entablature construction, is perfectly realised. The Ionic order is probably of foreign origin, and is decidedly a dereliction from the purity of Grecian architecture. Dr. Layard has found some capitals at Nineveh strongly resembling it; and as the Ionic order arose among the Asiatic Greeks, who were not so pure as their brethren in Hellas, one may reasonably suppose that it was really an innovation derived from a barbaric source.

Turning to the arched construction, there can be little doubt that the arch was independently invented in several widely distant ages and countries. Such at least seems to have been the case in China, in Egypt, and in Italy. And unsuccessful attempts at its formation are found still more extensively, not only in the two latter countries, and in Greece and Asia Minor, but also in the mysterious ruined cities of Central America, and in some of the primitive remains in Scotland described by Dr. Daniel Wilson in his "Archæology and Prehistoric Annals." The arched form must be accurately distinguished from the arched construction, as the *apparent arch* often occurs, which has the form, round or pointed, but which is merely composed of overlapping stones cut into that shape, not of voussoirs mutually supporting one another. Numerous varieties, both of the apparent arch, and of attempts at constructing the real one, will be found in Dodwell's Views, and in the more recent works of Sir Charles Fellows. And it is worth noticing that the pointed form seems to have been attempted quite as early, if not earlier, than the round. Indeed, if the first attempt, as seems not unlikely, took the form of overlapping stones inclining to a point, it would clearly be more easy to cut them away into a pointed than into a round shape. The complete form of the pointed arch is found in a gateway at Thoricos, and a very near approach to its construction in one at Tiryns. It would seem, however, that the attempt never quite succeeded, and that the greater apparent strength of the round arch

drove the designs back upon that form, which was at last brought to perfection both in Italy and Egypt. Whether such was the case in Greece appears extremely doubtful.

At all events, neither in Greece nor in Egypt did the invention ever give birth to a truly arched architecture. The arch was freely used in Egypt when constructive necessities required, but it never entered into the system of decorative architecture, which was always constructed on the principle of the entablature. The honour of producing a system of architecture of which the arch should be the leading feature was reserved for Italy. Those Roman buildings in which decoration was not aimed at, present, in their square piers and round arches, all the elements of a good and consistent style of architecture. But, as a general rule, the Roman architects, in their ornamental structures, endeavoured to effect an union of their own system of piers and arches with the Greek system of columns and entablatures, producing an inharmonious and inconsistent result. Numerous instances of the ways in which this union was attempted have been commented on in Mr. Hope's work, while, on the other hand, Mr. Petit has well traced out the way in which, in less enriched structures, the Grecian system of decoration was gradually cast away, becoming altogether secondary in the amphitheatres, and vanishing entirely from the aqueducts. The latter, such as the Pont du Gard in Languedoc, exhibit the system of piers and round arches in its perfect purity. On the other hand, in the palace of Diocletian at Spalato, and in the early Basilicas, the architects boldly allowed the arch to spring directly from the capital of the column, without the intervention of the entablature in any shape. Buildings like these, so far from being examples of a corrupt style, are, in the eye of a philosophical inquirer, the first steps towards restoring Roman architecture to a real purity and consistency which in its palmy days it had never possessed. The true round arched system was now worked out, and the arch provided with an appropriate support of two kinds, the square and the columnar pier.

The various forms of Romanesque architecture, the Byzantine, the Lombard of Italy, the Provençal, the German of the Rhine, the Norman of England and Northern France, all adhere to this same construction, and gradually work out for it an appropriate system of decoration. The Byzantine architecture, as far as the present view is concerned, must be considered as merely one among several varieties of Romanesque; in other respects, the peculiar outlines of its ecclesiastical buildings, and its especial use of the cupola, the noblest offspring of the round arch, might fairly cause it to be looked upon as a distinct class. The German and Norman architecture has gone very far to realise the ideal of the round-arched style, the architecture of mere rest and solidity, without any predominant extension, horizontal and vertical. The lecturer argued warmly in favour of the claim of this style to be considered a pure and perfect one, worthy of being classed alongside of Grecian and Gothic. Romanesque architecture, he contended, had been depreciated, because both Classical and Gothic exclusiveness had looked on it with an unfavourable eye; but it was quite possible that a style might be neither Grecian nor Gothic, and yet be worthy of being put on an equality with them. If, like them, Romanesque exhibited the full carrying out of the leading æsthetical idea suggested by its own constructive principle, such equality it might fairly claim. At the same time an absolute equality he would not assert: the Gothic ideal was the highest, while the Grecian buildings had attained a higher perfection in their own kind: for the Romanesque ideal itself he would be content with claiming the rank of *ultima inter pares*, while he was inclined to believe that no Romanesque building had approached so near to the perfect realization of that ideal as had been done in the two other styles by the Parthenon and by St. Ouens.

While the Romanesque styles were growing up among Christian nations, a very important form of arched architecture was developed among the Mahomedan nations. The Saracenic style, in its various forms, may be considered as essentially an offshoot from that of Byzantium, though much modified by the introduction of several original elements. Among these the most important was no other than the systematic use of the pointed arch. This shape is prevalent in most of the forms which this species of architecture assumes in the East; but, what is important to observe, such is not the case in that splendid variety which was developed among the Mahometans of Spain. But though the Saracens not only possessed the pointed arch, but systematically employed it on a grand scale, they never developed for it an appropriate system of decoration. The other most characteristic feature is the employment of the *stilt* as a distinct member of the architecture. Architecture is always purest when what Professor Willis calls the decorative construction coincides with the mechanical construction. According to this law, the point at which the arch springs from the pier, technically called the impost, should be marked by a capital or moulding. It is, however, often convenient in some particulars to place the decorative impost lower down than the constructive impost, so as to treat as a portion of the arch what is in reality a portion of the pier. This constitutes what is called a *stilted* arch. In the Saracenic style, this *stilt* is often made into a distinct member intervening between the arch and the capital of the column. Now as this style first arose in Egypt in the mosque erected by Amru, one is strongly tempted to recognise in this singular feature a reproduction of the exactly analogous peculiarity of the elder Egyptian architecture, the *dé* interposed between the capital and the entablature.

The distinctive feature of the Gothic architecture is therefore neither the mere form of the pointed arch, nor even its systematic use as the principal constructive member. What really distinguishes that glorious style is the working out for it of an appropriate and harmonious system of decoration, and the realizing of the great æsthetical idea which it suggests. The mere form, we have seen, is probably more ancient than the round, and may have been all along occasionally employed as caprice or convenience dictated. And that its systematic use as the principal constructive feature was introduced into Western Christendom from the East, we can hardly doubt, when we consider that its appearance in the twelfth century is exactly simultaneous with the increased intercourse between the two regions consequent upon the Crusades. We may thus see the futility of the various theories propounded by Milner and others, who reduced the question as to the origin of Gothic architecture into a mere question as to the origin of the pointed arch, and sought for the latter in the intersection of round arches and similar sources.

From the Orientals, then, the Western architects learned systematically to employ the pointed arch in the main arcades of their churches and other great buildings, of which the Abbey of Malmesbury is not improbably the earliest example in England. But much more remained to be done before Gothic architecture was fully developed; in other words, before the architectural expression of the idea of vertical extension was thoroughly worked out. Those who laid its foundations did but place the pointed arch of the Saracen upon the massive pier of the Norman, and channel its surface with the same ornaments which had adorned its semicircular predecessor. Slowly and gradually was a harmonious system worked out, the progress of this transition forming one of the most interesting pages in the history of the art.

ARCHITECTURAL INSTITUTE OF SCOTLAND.—An extraordinary meeting of this institute was held in St. Mary's Hall, Glasgow, on the Thursday in last week. Mr. Thomson, of Glasgow, architect, read a paper "On the Sources and Elements of Art, considered in connection with Architectural Design." Some conversation followed on the plans for the new public park at Kelvin Grove.

THE NEW CASTLE AT BALMORAL.—The contract for the mason work, according to a Scottish paper, has been obtained by Mr. Alex. Stuart, of Peterhead, and arrangements are being made to commence the work forthwith.

MAINTENANCE OF THE BALANCE BETWEEN THE ANIMAL AND VEGETABLE KINGDOMS.

WE have always sought to lead our younger readers to the consideration of nature's processes, and the study of the sciences which have resulted from the observation of these facts. We insert the following interesting paper on the adjustment of the relations between the animal and vegetable kingdoms in water, by Mr. Robert Warrington, of Apothecaries' Hall, as tending very strikingly to the end we have in view.

In Professor Brande's valuable "Manual of Chemistry," for 1821, and in each succeeding edition, treating of the respiration of fishes, appears the following statement.* "Fishes breathe the air which is dissolved in water; they therefore soon deprive it of its oxygen, the place of which is supplied by carbonic acid. This is in many instances decomposed by aquatic vegetables, which restore oxygen, and absorb the carbon: hence the advantage of growing vegetables in artificial fishponds."

It was for the purpose of submitting the correctness of this statement to the test of experiment, that the following investigations were undertaken, the results of which were laid before the Chemical Society, and appear to illustrate in a marked degree that beautiful and wonderful provision which we see everywhere displayed throughout the animal and vegetable kingdoms, whereby their continued existence and stability are so admirably sustained, and by which they are made mutually to subserve, each for the other's nutriment, and even for its indispensable wants and vital existence.

The experiment was commenced in May 1849, and the subjects chosen were some small gold-fish. These were placed in a globular glass vessel or receiver, of about 12 gallons' capacity, filled to about one-half its content with ordinary spring water, and being supplied at the bottom, to the depth of about an inch, with gravel and loose pieces of sandstone and limestone, so arranged that the fish could shelter themselves below them if they were inclined so to do. In this gravel were also planted two or three small roots of the *Vallisneria spiralis*, one of those delicate aquatic plants generally selected by the microscopist for exhibiting the circulation of the sap in growing vegetation, and therefore usually kept by microscopic observers in its growing state in a small jar: this being the only aquatic plant at hand in the midst of the metropolis, was therefore of necessity employed for the experiment. Being indigenous to the south of France, it might have been thought unfavourable for the purpose; but the results will clearly prove that it has answered the desired object most admirably. It throws out an abundance of long strap-shaped leaves of about a quarter of an inch in breadth, and from 1 to 3 feet in length; and these leaves, when the sun shines on them, evolve a continued stream of oxygen gas, which rises in a current of minute bubbles, particularly from any part of the leaf which may have received an injury. In order to exclude, as much as possible, the sooty dust of the London atmosphere, without, at the same time, impeding the free passage of the air, a thin piece of muslin, stretched over a stout copper wire, previously bent into a circle, was placed over the mouth of the glass receiver.

The materials and the subjects for the experiment being thus arranged in this miniature pond, if I may so term it, everything appeared to progress healthily for a short period, until circumstances occurred which indicated that another and most important agent was required to render the adjustment between the animal and vegetable functions perfect and constant, and the necessity for which, at the time of commencing the experiment, had been unthought of. The circumstances I allude to arose from the natural decay of the leaves of the *Vallisneria*, which became of a brown colour as they lost their vitality, and began to decompose. This decaying vegetable matter, by accumulation, rendered the water turbid, and caused a growth of green slimy matter or mucus on the surface of the water and on the sides of the receiver.

* "Brande's Manual of Chemistry," 1830, vol. iii. p. 233.

If this had been allowed to increase, there is no doubt but that the health of the fish must have speedily suffered, and most probably their vital functions have been destroyed. The removal of this decaying vegetation from the pond became, therefore, a point of paramount importance; and to effect this, it occurred to me to have recourse to a very useful little scavenger, whose highly beneficial and indispensable functions have been too much overlooked, or its utility, indeed, I may say, understood, in the economy of animal life,—I mean the water-snail, whose natural food is the very green slimy *conferva* and decaying vegetable matter which threatened to destroy the object sought to be obtained by the experiment. Five or six of these little creatures—the *Limnea stagnalis*—were consequently introduced into the water, and by their continued and rapid locomotion, and extraordinary voracity, they soon removed the cause of interference and restored the whole to a healthy state; thus perfecting the balance between the animal and vegetable inhabitants, and enabling both to perform continuously their vital functions with health and energy.

Since this period the fish have been lively, bright in colour, and appear very healthy; the snails also, judging from the enormous quantity of gelatinous masses of eggs which they have deposited on all parts of the receiver, as well as on the fragments of stone, appear to thrive wonderfully, and besides their indispensable functions in sustaining the perfect adjustment of the series, afford a large quantity of food to the fish, in the form of the young snails, which are devoured immediately they exhibit the slightest evidence of vitality and locomotion, and before their shell has become hardened. So luxuriant also was the growth of the *Vallisneria* under these circumstances, that by the autumn the one solitary plant that had been originally introduced had thrown out very numerous offshoots and suckers, thus multiplying to the extent of upwards of thirty-five strong plants; and these threw up their long silky spiral flower-stalks in all directions, so that at one time more than forty blossoms were counted lying on the surface of the water. Thus, then, we have that admirable balance which exists between the animal and vegetable kingdoms sustained, and that in a liquid element. The fish in its respiration consumes the oxygen of the atmospheric air held in solution by the water, and at the same time furnishes carbonic acid, feeds on the insects and young snails, and enriches material well adapted as a rich food to the plant, and well fitted for its luxuriant growth. The plant by its respiration consumes the carbonic acid produced by the fish, appropriating the carbon to the construction of its tissues and fibres, and liberates again the oxygen in its gaseous state, to sustain the healthy functions of the animal members of the series, at the same time that it feeds, by its roots, on the rejected matter, which has fulfilled its purposes in the nourishment of the fish and snail, and thus preserves the water constantly in a clean and healthy condition; while the slimy snail, finding its proper nutriment in the decomposing vegetable matter and minute confervoid mucus, prevents their accumulation by its voracity, and by its vital powers converts what would otherwise act as a poison into a rich and fruitful nutriment, again to constitute a pabulum for the vegetable growth, while it also acts the important office of a partial purveyor to its finny neighbour. The ponds, ultimately made of a square shape, as more convenient, have now been in operation three years without change of water. Robt. Warrington.

Visitors to Museum of Ornamental Art, Marlborough House.—During the month of March 12,037 persons were admitted free on the public days. 1,091 persons on the students' days were admitted on the payment of sixpence each, besides the registered students of the classes and schools.

Forest Lands.—With reference to your valuable and interesting papers on the conversion of the woods and forests, I would beg leave to suggest that it would be of great advantage to dispose of Waltham Forest in small lots, not only to small capitalists, but it would give a fresh impulse to labour, and would create a new feeling in their neighbourhood.—A Forester.

GRAVEYARDS AND CEMETERIES.

I have read with pleasure your numerous articles on sanitary reform and improvements, more especially those relating to the "closing of graveyards," and am truly rejoiced that Lord Palmerston is proceeding so energetically in the matter. I hope he will not stay his hand till every over-crowded graveyard in the kingdom is closed; and I also hope that you will still persevere in your effort for the attainment of so very desirable an object, and till not only that, but every other nuisance affecting the health of the people is classed amongst the things that have been.

But in this desire for sanitary reform, there is one thing that has not, I think, been considered at all, and unless that is taken into consideration, I fear that we are only leaping out of the frying-pan into the fire; I allude to the cemeteries outside our towns, and wish you to take a view of them. Every inch of these is made available for the purposes of interment of the dead, save and except the paths, and, as if the living wished to congregate with the dead, immediately a cemetery is laid out, the land near it is laid out in building lots,—see Derby, Nottingham, and other towns. If this is to continue, of what advantage will be the closing of burying-grounds in crowded localities, where as soon as possible the new localities are as crowded with the living and the dead as the old? I would compel cemetery companies to purchase a circle of land of sixty to seventy yards in addition to that they intend to use as a cemetery; if a greater quantity, the better, but I think that would be sufficient. These sixty or seventy yards should extend in every direction, and should, in fact, form a complete belt round the interment-ground, and should never be built upon or used for the residence of the living, nor for a resting-place for the dead; but you will ask what is to be done with this circle? There are many plans would suggest themselves were the principle once carried out,—one of which would be to make walks, interspersed with flower-beds, shrubs, statuary, &c. A. G.

THE TREMONT TEMPLE AT BOSTON.

On the burning down of the old Tremont Temple, end of March last year, the ruins were cleared away, and a new one erected, which is now nearly completed, and will be opened about May next. As described by the *Boston Traveller*, the building, with the exception of 10 feet by 68 feet, left open on the north side for light, covers an area of 94 feet front by 136 feet deep, and is 75 feet high in front. The walls vary in thickness from 36 inches to 16 inches, and are hollow. Amongst other advantages this is intended to secure a greater resonance and adaptation to music in the walls of the large halls, and to obviate danger of fire spreading between the plastering and the wall. Wherever it has been found necessary to use furring and plastering, layers of brick have been placed to cut off all chance of fire spreading between the plastering from one story to another. The floors have a thick coating of mortar between the under and upper courses of boards, as a protection also against the spread of fire, and to prevent the transmission of sound. Ventilation is to be secured through outlets in the ceiling, and through openings in the floor which communicate with the hollow walls, and thence open into the outer air through the roof. The entire building is to be heated by steam, from a boiler below ground and outside the building. Cochituate water is introduced into all parts of the building, and the usual conveniences connected with its use are amply provided. The building contains extensive accommodations for both public and private uses. There is a principal hall, or temple, which, with its ante-rooms, closets, stairways, &c. occupies the entire length and breadth of the building, and will have seats for nearly 2,500 persons. Next, there is a smaller hall, or temple, capable of seating from 800 to 1,000 persons; and adjacent to this is a third hall, designed for the private meetings of the Baptist Church which is to worship in the large hall, and capable of seating some 300 persons. Besides these, there are scores of rooms of various sizes and descriptions, from large and airy ones, suitable for stores and offices, down to mere lumber-rooms and closets. The architect is Mr. William Washburn. Externally, the building is said to be "by no means so graceful and beautiful a structure as the old temple." It is to be covered with a dark mastic, similar to that on the Revere House, and is to have a heavy cornice surmounted by a balustrade. The entire cost of this building, including two organs, heating apparatus, gas fixtures, seats, cushions, and fittings of rooms, will be about 100,000 dollars. For the payment of this, the property is to be managed by trustees, though the land is considered sufficient to cancel the debt.

PUBLISHERS' SHAMS.

May I venture to beg you to notice the following case of *sham*:—

I have before me two articles, for each of which I paid 4s. On the title-page of one is, "———'s Original and Improved Builder's Price Book for the present Year" (1852), &c. &c.; on the other, "———'s Original and Improved Builder's Price Book for the present Year (1853), *containing corrected lists of prices, according to the recent reductions, (?) in all descriptions of builders' work*," &c. &c.

Now, I ordered the latter book expecting to find prices set forth in it "according to the recent *advances* in all descriptions of builder's work," and I am injured to the amount of 4s. by not having such reasonable expectation satisfied; and also insulted by a glaring assertion on the title-page of my purchase, ignoring the *fact* on which such reasonable expectation was founded; and again, doubly insulted by finding that the prices in the book for 1853 correspond exactly with those in that for 1852, *even to the perpetuation of a printer's error in the prices of "floors," under head of "Joiner's Work;*" so that the title-page of the so-called "original improved and corrected" edition contains one untruth, and the book itself a great many.

I think all that numerous section of the public connected with building will thank you for preventing such *things* as *this* overcoming them "like a summer cloud."

One who has to "use" a Price Book.

THE ENDLESS LADDER.

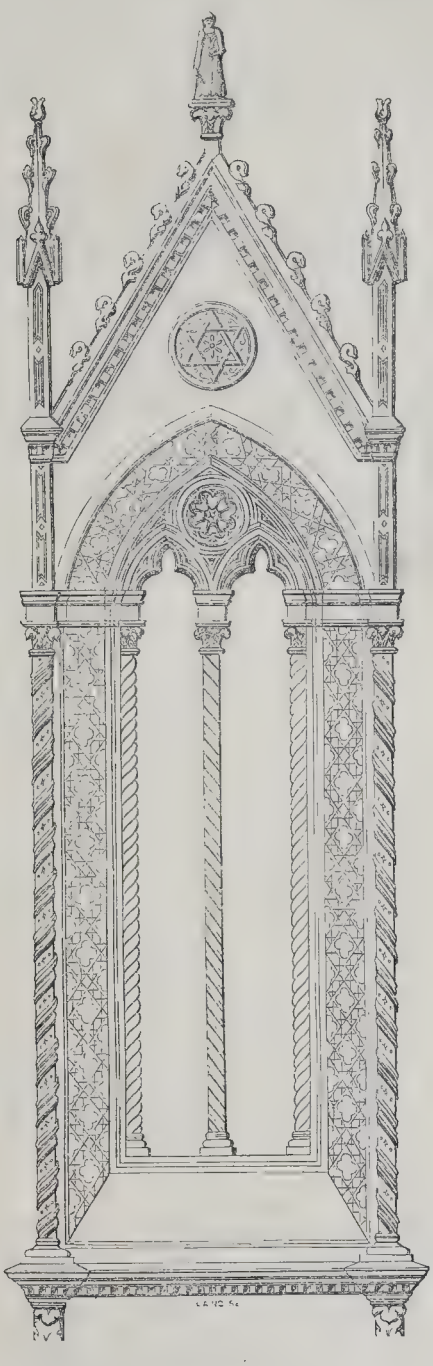
I was at Pimlico this morning, and could not but notice the successful action of a patented invention of mine, "The Endless Ladder." The extensive range of buildings now erecting there, to form a new street towards Westminster, is the result mainly of its agency, and the builder must be deriving large benefit from its employment, to say nothing of the great diminution of personal labour it has effected for the workmen, according to my aim and intention at the outset.

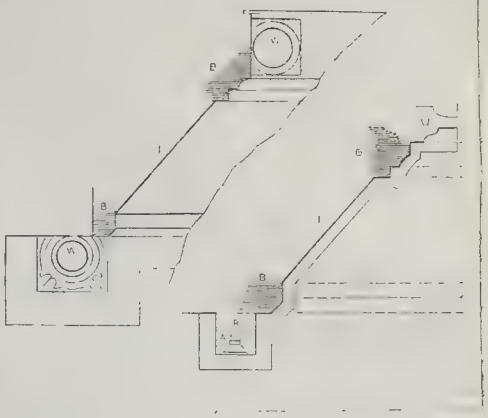
During the existence of the patent, I received for its use about 20*l.* in return for the many hundreds I expended in taking out the patent and bringing the invention to its full efficiency.

This consideration operated to prevent my risking the further addition of expense accruing to a petition for the extension of the patent; and now that the period for which it was granted has expired, builders are availing themselves most freely of its advantages, and I am a spectator merely, being in no way interested in, or benefited by, its success beyond the empty gratification of inventing the machine; by so much the poorer in pocket for thus gratuitously benefiting other parties. This is trying enough; but when an eminent builder took as a gift my license for the use of three of these ladders, by the help of which he has erected mansions, squares, and streets, and this without receiving the slightest token of acknowledgment in return, I confess I am disgusted with the law pertaining to patents, as well as with the shortcomings of human nature. John Spurgin.

The Dome of the Invalides, at Paris.—M. Visconti, the architect, has received orders to prepare the interior of the dome of the Invalides for the inauguration of the tomb of Napoleon I. on 5th May, the anniversary of his death.

WINDOW, FLORENCE CATHEDRAL.





WINDOW AND DETAILS, FLORENCE CATHEDRAL.

Another fragment from fair Florence, and another thought from Giotto's brain, recorded on the marble tablets of his cathedral: beautiful indeed and full of thought are all his details, as the accompanying sketch, taken at random from the profuse pile of beauty he has left posterity, will show, and serve in some faint measure to illustrate his bright artistic genius. * Its brilliant jambs of jasper and of porphyry glow like a reflex of the gorgeous glass that fills its windows; its flowery canopy, with its graceful curling crocketing, calling to mind the derivative of Firenza, and that the title this cathedral bears is Santa Maria del Fiore. See how beauteously they bend and grow; and if to our sterner eye they lack the hard and petreous energy of our northern sculpture, blame not Giotto for its fancied lack, for surely the sunnier land from whence it comes bears fairer flowers, and none more fair than these in marble. Think upon the patient love-labour bestowed on all that inlay, and see how they strove to rival Solomon, and say to those who cavil at it, "Go and do thou likewise,"—likewise—not in stone, but spirit.* G. T. R.

REFERENCE TO SECTIONS.

I. Inlaid.	R. Red.
B. Black.	W. White.

PROVINCIAL NEWS.

Lincoln.—The chief stone of the new church about to be erected at the sole expense of the Rev. Richard Waldo Sibthorp, near his almshouses at Monk's Leys, was to be laid on Wednesday.

Edenham.—A window of stained glass, in the Decorated style, has just been put up in the parish church here, by Lord Willoughby de Eresby. The artist was Mr. W. Constable, of Cambridge.

Kirton Lindsey.—It has been found necessary to have a corn-exchange building here. The farmers in the neighbourhood have taken shares of 5*l.*

Leighton Buzzard.—For the restoration of the parish church of this place, which, it may be recollected, was struck by lightning in July last, it appears that 400 subscribers gave 693*l.* odd, and that the expenditure has been 728*l.* odd.

Southampton.—In the heart of the town there are about 100 acres of land, called East and West Marlands, Houndwell, and Hoglands, which the corporation have wisely resolved to plant ornamentally and convert into public pleasure-grounds. A botanic garden, a maze, and an observatory, will as soon as possible be formed and erected on the grounds. A portion of the land is to be set aside for a cricket-ground.——Mr. Mare, the shipbuilder, who has commenced the building of works close to Southampton for repairing the steamers of the General Screw Company, is about to build 100 cottages for his workmen.

Ringwood.—The tender of Messrs. J. and R. Cottman, of Fordingbridge and Ringwood, for the restoration and enlargement of Ringwood Church, under the superintendence of Messrs. J. and H. Francis, architects, has been accepted. The works are to be commenced forthwith. The difference between the highest and lowest of seven tenders was 1,709*l.* 19s. 9d.

West Pennard.—The parish church has been recently restored, and a school-room erected by the incumbent, the Rev. T. P. Nunn.

Kettering.—The erection of a town-hall here has been resolved on, and shares of 5*l.* to some extent already subscribed.

Wolverhampton.—The foundation-stone of the Wolverhampton Orphan Asylum was laid on Tuesday in last week, at Goldthorn-hill. The

* We gave one of the crockets at large in our last number.

proposed building will be in the Elizabethan style, having a central entrance, with wings and projecting extremities. A bell tower will surmount the central portion. It is from a design by Mr. Joseph Manning, and the contractor is Mr. John Elliott, of Wolverhampton.

Weston-super-Mare.—A site for a proposed new church near Camden-town has been presented by Mr. H. Davies.

Devonport.—Government, it is said, have again determined to form a convict establishment here on a large scale. A building is to be erected. Colonel Jebb is expected here, when, in connection with the official authorities, a site will be chosen, and the works commenced without delay.

Bridgewater.—At a recent vestry meeting of the parish of St. Mary, the subject of the repair or restoration of the spire and tower of the church was rather stormily discussed. Mr. Brakspear, of London, architect, had prepared a report, with plan and estimate, recommending the rebuilding of the spire and a portion of the tower, and stating that the whole work would only cost 786*l.* odd, or about 111*l.* more than mere repair would, as the building was in a rotten state and much risk attendant on its repair. Mr. Hutchings stated that he had examined the building and had found the repairs he had himself superintended forty years since still as perfect as ever, and the tower on the whole in the same state as it then was. The jamb of the belfry arch had been crushed, but a new arch could be built at a small expense, whereas Mr. Brakspear's plan could not be carried out for less than 2,500*l.* It was finally moved, that Mr. Brakspear's plans be rejected, and no money be laid out on tower or spire without first calling a parish meeting; and the resolution was carried with but a single dissentient. The church here seems to have been a cause of squabbling for some time past.

Torquay.—Public schools have been erected, and are now nearly completed, from designs furnished by Mr. Edward Appleton, of this town, architect. They are built in the modern Italian style, and are two stories in height, consisting of a school-room for 100 infants, a girls' working-room, class-room, and entrance lobby on the ground-floor; the infants' school-room and girls' working-room being capable of conversion into one large room 56 feet long by 32 feet wide, and 17 feet in height. The upper story is occupied by the general school-room, adapted for 200 children, 56 by 32 feet, and class-room, 18 by 9 feet, the former of which has an open timber roof, and is 15 feet to the under side of the tie-beams, and 20 feet high to the ceiling. The approach to the upper story is by a granite staircase. The school is built of the limestone of the neighbourhood, rubble-dressed, and painted black on the three exposed sides: the quoins and piers which divide the upper windows are of ashlar dressed limestone. The architraves, string-courses, and dentils of cornice are of Portland cement. The external dimensions of the building are 70 by 36 feet.

Machynlleth.—The chief stone of the Vane Infant School was laid on Wednesday week, by Lady Seaham, who made a short speech to those assembled after she had spread the mortar "in a workmanlike manner" and completed the ceremony by a professional "salute" with mahogany mallet. Lady Edwads gave the site, at the Griffin, adjoining Pentrerallt-street. The school, which will be in the Old English style of architecture, will be capable of accommodating from sixty to seventy children; and at the north end of the building, a suitable house will be erected for the governess. Mr. David Owen is the architect, and the contract has been let to Mr. Richard Owen. It is expected that the building will be completed by the first of September at farthest.

Bilston.—The Improvement Commissioners have nearly completed the purchase of about eleven acres of land upon the Wolverhampton-road, for the purposes of a cemetery. The land, including clearing compensation, will cost about 2,000*l.* and the laying out of the cemetery and the necessary buildings about 2,000*l.* more. A loan of 25,000*l.* has been offered to the board to enable them to construct the cemetery, waterworks, sewers, and other means of sanitary improvement, interest on that sum to be paid at the rate of 4 per cent. per annum, and the capital paid back in thirty years.

Coventry.—The chief stone of Trinity National Schools was laid on Wednesday in last week by Mrs. Howells, wife of the vicar of Trinity. The school is to be built of red stone got from a quarry at Gibbet-hill. It is in the Early English style, with turrets in the centre, and a campanile in the east corner. The turret is 100 feet high, and the school 60 feet by 18 feet in size. A lithographic view may be had of the Coventry booksellers. The architects are Messrs. Barry and Murray, and the builder Mr. T. Pratt, of Coventry.

Derby.—The Temperance Hall in Curzon-street has been completed and opened. We gave on 3rd July last a view of the edifice as designed by the architect. It consists of basement and principal story, the former being appropriated to tea and committee-rooms, kitchens, and other offices; the latter to the great hall and approaches. The frontage is 61 feet, and 40 feet on the wall, rising in the centre of pediment to 55 feet. The centre portion of the façade recedes to allow access to the floor, and the gallery staircases, which are placed in the remaining portions of the front, and form the piers, from which a large semicircular arch springs, at the height of 30 feet. Within this arch there are two subordinate arcades, the lowermost of which forms the portal, and has its cornice and balustrade. The upper arcade does not recede more than 2 feet from the front, and is filled with glazed windows, and a circular opening over. The principal entrance to the hall is in the centre, and there are inferior entrances from the staircase lobbies. The hall is 70 feet long (exclusive of gallery recess over arcade, which is 9 feet additional) and 45 feet wide. The height of wall is 36 feet, and 49 feet to highest point of roof, with two cloak-rooms near the entrance, and ante-room near the platform. The roof is formed with six semicircular trussed principals, and two wall trusses; the curved ribs are laminated, and the whole rest upon projecting stone brackets carved. The entrance end has a recess, with hemispherical ceiling; and besides a triplet, there are four large semicircular-headed windows on each flank, which admit light, at a great elevation from the floor. There are two flank, and one end, galleries projecting 5 feet 8 inches, supported by double cantelever brackets of cast-iron; and the panels of front are filled with trellis. There is an additional gallery in recess, and the access to them is by staircases at the entrance end of the building. The platform for speakers is arranged to correspond with gallery front, and occupies the end opposite the entrance. The basement consists of a lecture-room 59 feet by 22 feet 2 inches; reading-room, 38 feet 6 inches by 22 feet 2 inches; committee-room, 19 feet 6 inches by 22 feet 2 inches; culinary offices, large store-rooms, water-closets, &c. The whole cost will be 2,500*l.* The hall will seat 800 persons. At the opening there were 1,500 in it. The building has been erected from plans furnished by Mr. H. I. Stevens, architect, and gratuitously inspected by Mr. J. Wale, building surveyor: Messrs. Bradbury and Humphreys were the contractors. The plaster work has been executed by Mr. I. Pike; the staining, varnishing, and painting by Mr. Harrison; the glazing by Mr. Coupe; the gas-fittings by Mr. R. Woolhouse; and the gas lustres by Messrs. Chance, of Birmingham.

Ab-Kettleby.—The ancient Norman church of Ab-Kettleby, near Melton, is in course of restoration in nave, clerestory, north aisle, and belfry.

Liverpool.—The chief stone of a Roman Catholic Institute was laid on Tuesday in last week. It is to be in the Plain Gothic style, from a design by a son of the late Mr. Pugin, and will be of two stories, and 100 feet long by 25 feet wide in the interior. The upper floor is to be for a lecture-room, &c. and the main floor will be capable of accommodating 200 scholars. The cost, including site, will be 5,000*l.*

Manchester.—A fund for the erection of a new building for the Mechanics' Institution here is being collected, and already exceeds 4,000*l.*

Stockport.—About 400*l.* have been contributed towards the erection of new schools in connection with Orchard-street Chapel, Waterloo-road. The cost will be upwards of 500*l.*

Edinburgh.—By the exertions of the Society of Antiquaries of Scotland, the ancient chapel of St. Margaret, in the Castle, formerly used as a powder magazine, has been restored, under the superintendence of Mr. Grant. The small round-headed windows in the south and west walls have been filled with stained glass by Messrs. Ballantine and Allan. This chapel is said to be the oldest building in Edinburgh, dating at the latest from the middle of the twelfth century.

METALLIC COMPOUND PAVEMENT.

The metallic compound pavement, which recent accounts from the United States of America represent as having been tried with such success in mending the ways of the public in several cities there, had been previously patented in this country by one of our Middlesex magistrates, who, as a road-commissioner, had some experience as to the defects of the various systems heretofore in use here; and we understand that a specimen of this improvement is now about to be laid down in the streets of this metropolis, stimulated by these accounts of its success amongst our Transatlantic brethren, who, although they cannot claim the merit of originality, have been in this, as in many other instances, much more prompt in overcoming all those scruples on the ground of novelty and innovation, which have so frequently kept the inhabitants of more ancient states from emerging out of the ordinary net of routine and vested rights in antiquated systems, however defective.

If the advantages of this improvement, as regards durability, freedom from mud, dust, and danger to horses, are such as have been represented, the large sums now levied on our ratepayers for the remedy of such nuisances, as well as the injury to shop goods, health, and inconvenience to passengers, will be considerably diminished; it will be therefore incumbent on all ratepayers to overcome the scruples of those interested in the maintenance of parochial abuses, with a view to the establishment of a more permanent and effectual system of carriage roads than any heretofore adopted.

RAILWAY MATTERS.

It appears from official returns that during the half-year ending 30th June last, eighty-three persons were killed, and ninety-nine injured on railways in Great Britain and Ireland; and in the interval to the present time we should think the number is even greatly on the increase.

The board of delegates and general managers at the Clearing-House at length seem to admit the necessity for some means of communication between the guards and drivers of trains in transit, a necessity which we have urged in vain for the last seven years. That there is at least as much necessity however (apart altogether from the question of time-signals on the line itself), for some means of personal and immediate communication between the passengers and the guards, we have also urged; and we hope that at least after other seven years' cogitation at furthest, if not somewhat sooner, the board of general managers will also come to see the necessity, or, at all events, the advantage of this final complement of the trim of trains in transit. Meantime, we doubt not that in their recent discussions not the least important item for consideration was that of cost to the companies and trouble to the *employés*, and the result appears to have been mainly based on such considerations. The guard is still to be isolated from every passenger, so that, as heretofore, when a passenger is in a position to inform a guard of the cracking of some particular axle, the firing of some particular carriage, the jerking of some particular set of wheels off the rails, or one or other of the various casualties which have occurred, and will occur, without the guard knowing anything about it at the moment,—the passenger so fortunate, shall we call it, as to make the discovery, must still make vain attempts, by bawling out of the window, to attract the guard's attention; and the guard, when his attention happens, fortunately, to be attracted, must still either sit like Patience on *his* "monument," smiling at the passenger's

"grief," or must, like the latter, risk his own neck, as heretofore, by crawling over the tops of the carriages till he arrive within ear-shot. Then, to be sure, at least if he can safely return to his seat, he will for the future have it generally in his power to attract the attention of the driver by pulling a bell-string attached to his seat, and ringing a bell attached to the engine, the recommendation of which "simple plan" constitutes the sum total of the board's recommendation for the prevention of accidents in general. It is well, however, that the principle of communication in the train itself is now at length admitted, and it is to be hoped that this principle will ultimately be carried out in some more effective way, even though it do require changes rather more costly than the mere application of a bell and a bell-string to a train in transit.

Since the decision of the Clearing House committee was announced we observe that various persons are claiming the method of applying the bell and bell-string recommended, to railway trains, in order to appropriate the profits under some patent or other. If we mistake not, however, there will be some difficulty in any "patentee" appropriating it, for the same simple and obvious plan has been "invented," if not "patented" too, in one shape or other, over and over again: indeed, it was pitiful to observe the anxiety of so many to claim as an invention meriting appropriation either by patent or otherwise, an application of the common bell and bell wire so simple, obvious, and stale. For our own part we sincerely trust that no one will succeed in depriving the public of the property in it, if it really be worth anything without its essential adjunct,—means of personal communication between guard and passenger. More changes have been rung upon this bell, screeched upon this whistle, beat upon this gong, we dare say, than ever were in the case of any other invention. We observe another modification of it new from the inventive manufactory of the "fertile brain," in which a gong instead of a bell constitutes the primary and essential claim to originality; the "gutta percha or common sash line" having been already appropriated.

Among the causes of the many accidents which occur from carriages getting off the rails, it is highly probable a very prolific one is the wearing away of the axle-bearings, by which they allow the axles themselves to oscillate and work from side to side, causing the wheels to strike with more or less force against the rails, until either the axle is broken, or the flanges being insufficient to prevent it, the carriage jumps off. To obviate this source of danger, Mr. Joseph Barrans, a railway mechanical engineer, has patented an "improved railway axle-box." It is said to have been in use upwards of two years on the Brighton line; and to have gone over 50,000 miles without injury.

As an explanation of trains running off the lines, Mr. G. Nasmyth, C. E. suggests "the great speed combined with immense increase of weight of the engines, which, by the mechanical law, will have a tendency to keep in a straight line, like a ball fired from a cannon, and must, in going along the curves on the line at such a speed, cause a great pressure sideways on the rails, and when meeting with the slightest obstruction is certain to strain the permanent way, or render very probable the engine getting off the line." The chief danger, he adds, would be at once removed if railway companies would reduce the speed of their engines to the safe and steady rate of 30 miles an hour.

In consequence of the daily increasing traffic on the North-Western line, and the delays which occur from want of room to accommodate the immense number of trains which come in almost every minute from the main line itself and its numerous connexions, to the London terminus, the directors have determined to double the width of the railway at the London end, and should that not be sufficient to proceed farther.

The second road over the Chepstow tubular bridge is all but completed. The last girder was raised on 11th ult.

There is an iron tubular bridge now being prepared at the manufactory of Messrs. R. Stephenson and Co. for erection across the Nile at Bentra. The trains will pass along the top of the tube instead of through the centre, and room for the passage of only one line of carriages at a time will be afforded. A footpath will be made on each side of the rails. The bridge is to be 20 feet above the ordinary level of the water, and the centre portion of it is contrived to swing on a pivot, so that the boat traffic may be secured during the rising of the Nile.

THE SMOKE NUISANCE.

EXPERIMENTS ON FIRING.

The smoke nuisance will never be abandoned or much abated unless stringent measures are adopted, and the stoker made amenable, by fine, &c. for causing the nuisance, as well as the proprietor, after being instructed how to avoid it, as is stated by the committee of the York Health of Towns Association. Mr. Williams says that a very few shillings would correct the nuisance from a small furnace—I should say, or a large one either; but anything of little cost is little thought of by some people.

In examining the setting of our boilers, I find there are scarcely twelve square inches of area over the bridge, and eighteen square inches as the area of the flues, to every square foot of grate-bar; and the combustion 12½ lbs. of coal per hour on each square foot of grate. In No. 4 of the following experiments the area of grate is 36 feet. This quotation I give to be compared with Mr. Fairbairn's statement in the *Builder*, page 76 of the last volume.

Experiment, No. 1.

Date.	Water evaporated in Feet.	Working Time.	
1842.		Hours.	Minutes.
Feb. 8	320	3	10
,, 9	933	9	40
,, 10	1,033	9	50
,, 11	1,048	9	50
,, 12	1,087	9	30
,, 14	621	5	—
	5,042	47	—

This was with 25 tons of Staffordshire slack, in two 40-horse boilers. The mode of firing was by pushing the hot or red coal back, and putting fresh coal in front. But there was a deal of smoke.

If we take the result in common numbers, we have about 5 lbs. 10 oz. of water evaporated with 1 lb. of slack, or a trifle under 15 lbs. of slack per horse-power per hour.

Experiment, No. 2.

Date.	Water evaporated in Feet.	Working Time.	
1842.		Hours.	Minutes.
June 27	1,193	10	—
,, 28	1,259	12	—
,, 29	1,275	12	—
,, 30	1,274	12	—
July 1	792	6	30
,, 2	314	3	30
	6,107	56	—

This trial was with 26 tons of *very inferior* slack, in two boilers as before. The mode of firing as before one part of the time; the other part of the time by an admission of air. We have about 6 lbs. 9 oz. of water evaporated with 1 lb. of slack, or 13 lbs. of slack per horse-power per hour. The refuse or ashes from the 26 tons of slack was 41½ cwts.

Experiment, No. 3.

Date.	Water evaporated in Feet.	Working Time.	
1842.		Hours.	Minutes.
July 4	1,396	12	—
,, 5	1,429	12	—
,, 6	1,398	12	—
,, 7	1,334	12	—
,, 8	757	6	30
	6,314	54	30

This was with 26 tons of *good* slack, in two boilers. The mode of firing was by admitting air all the time. This gives about 6 lbs. 12 oz. of water evaporated with 1 lb. of slack, or a trifle more than 13¾ lbs. of slack per horse-power per hour. The refuse from this slack was 28¼ cwt.

Experiment, No. 4.

Date.	Water evaporated in Feet.	Working Time.	
1842.		Hours.	Minutes.
July 12	1,531	12	—
,, 13	1,513	12	—
,, 14	1,668	12	—
,, 15	1,475	12	—
,, 16	1,107	9	—
	7,294	57	—

This trial was with 23 tons of *good* slack, in two boilers, with very thick fires, and air admitted the whole time, making no smoke. Thus we have 8 lbs. of water evaporated with 1 lb. of slack, or a trifle over 11¼ lbs. of slack per horse-power per hour. The refuse, 22½ cwt.

Experiment, No. 5.

Date.	Water evaporated in Feet.	Working Time.	
1842.		Hours.	Minutes.
July 19	1,392	12	—
,, 20	1,470	12	—
,, 21	1,619	12	—
,, 22	1,161	9	—
,, 23	1,196	9	15
	6,838	54	15

This was with 26 tons of *very inferior* slack, in two boilers, with very thick fires, and air admitted the whole time, making no smoke. Thus we have 7 lbs. 5 oz. of water with 1 lb. of slack, or under 13½ lbs. of slack per horse-power per hour. Refuse, 44¼ cwt.

The interval between the first and second trials was occasioned by putting the boilers in repair. In reference to inferior slack, as stated in trials 2 and 5, one-half was at 7s. the other half at 2s. 6d. per ton each trial. Nos. 1, 3, and 4, were with slack all at 7s. per ton. It may be imagined what the slack of Nos. 2 and 5 was by the refuse or ashes, as compared with Nos. 3 and 4. No. 1—no account was taken of the refuse.

In reference to a smoke-consuming furnace, page 744, vol. x. it only evaporated barely 5 lbs. 6 oz. of water with 1 lb. of coal; so that the preceding experiments show what a little perseverance may do.

K. C. E.

IRISH BUILDING NEWS.

The foundation stone of the new church of St. Patrick has been laid at Ballymena. The building is situated at the upper end of Castle-street, on a site granted by Sir Shafto Adair, Bart.: it is designed to accommodate about 1,000 persons, and the estimated cost is 4,400*l*. The designs were made by the Ecclesiastical Commissioners' architect. Messrs. Hugh and James Henry, contractors.

A new building is being erected in connection with the Magdalen Asylum: it provides accommodation for more than twice the original number of occupants.

A cavalry barrack is to be built on three acres attached to the new barracks in the city of Limerick.

The Drogheda Railway Company are erecting a railway hotel at Howth.

The Belfast town council have voted 25,000*l*. for the erection of a new town-hall.

Contracts have been entered into for a new wing to Armagh gaol, at a cost of about 2,700*l*.

The cathedral of Killaloe has, we are informed, been reopened, after sundry works being effected.

The tunnel at Cork (which we have previously alluded to) is fast progressing towards completion, and is expected to be opened for traffic next month.

We are glad to find the Dublin and Dundrum line (which will afford great facilities for tourists

to view the beauties of Wicklow) is progressing. The earthworks near Miltown are being completed. The masonry of bridge over Dundrum-road has been nearly finished. The Dodder viaduct is ready for the rails; this structure is 360 feet long, and 60 feet high. Between Ranelagh and Dublin seven bridges are in course of erection: the iron superstructures have been contracted for by Messrs. Courtenay and Stepheus, of Dublin. The remaining portion of the line between the Grand Canal and Stephen's-green has been commenced, and some houses levelled. Mr. James B. Pratt, C.E. Mr. Dargan is working the line himself.

A new R.C. church has been commenced at Ardfert, county Kerry. The plan comprises a nave and aisles 80 feet long by 40 feet wide; at west end of south aisle is a tower; the chancel is 25 feet by 17 feet 6 inches; a south Lady Chapel, 16 feet by 9 feet, and a sacristy on north side of chancel. The style of architecture is Early English. The walls are built of limestone, with chiselled dressings, &c. The roof is to be of open-timber work, stained and varnished. Mr. McCarthy, architect.

The chancel of Dundalk Catholic Church is being fitted up: a large stained-glass window for the east end is being made by Mr. Hardman, of Birmingham. An altar, reredos, sedilia, and a monument in memory of the late Very Rev. Dr. Coyne are also being added: the last mentioned architect furnished the drawings.

The Ecclesiastical Commissioners have decided on sundry works to be done at the churches of St. Andrew and St. Mark, Dublin. Something should be done to the façade of St. Thomas's Church: the pediment (for some unknown cause) has been removed, and a blank gable of compo now forms the summit of a Corinthian pseudo portico.

THE EDINBURGH PAINTERS.

In continuation of the series of interesting articles in the *Edinburgh News* on the condition of the working classes in Edinburgh and Leith, two of them are devoted to the painters, their materials, and workmanship. The business of house-painters in Edinburgh is said to have no claims to antiquity. Up to the end of the seventeenth century, the trade was altogether in a degraded position; but thereafter, a series of able men, beginning with the Norries and ending with Mr. D. R. Hay, gradually elevated the business, and produced workmen whose merits are appreciated in London and elsewhere wherever they go. Indeed, the writer boasts that Edinburgh has produced the best house-painters in the country, and who are to be found as such, not only in London, but in Dublin, New York, and elsewhere, in all of which places they occupy a high position. Nevertheless, it is admitted that the painters of Edinburgh are a heterogeneous and unfortunate lot, comprising vagabonds from all trades,—butchers, bakers, &c.; and, on the other hand, that, from a deficiency of work in winter, and the lowness of wages even while in work, many of the workmen turn lamplighters, or scene-shifters, check-takers, or chorus-singers in theatres, supernumerary policemen, &c.

At the beginning of the present century, the wages of painters were 16s. per week in the summer, and 12s. per week in the winter season. There were not at that time above eighty or ninety journeymen in Edinburgh; but the scarcity of men during the war was so very great, that the master-painters—after the example of the master-joiners—impressed into their service all the soldiers in the garrison who were capable of handling a brush. The wages in consequence rose for a short time, as they have frequently done since, to 1*l.* per week. At the conclusion of the war the trade seemed to be in a very depressed state, and about this period, the winter time, began to be broken up, and the men to be paid off. The building mania had comparatively little effect on the painter's trade. In Edinburgh—unlike Glasgow or London—it is not the practice to paint a house the moment it is finished: some time is allowed for the plaster to dry and the woodwork to become seasoned. There was, therefore, never the same pressing or enormous demand for painters that there existed for joiners or masons. The wages, however, did increase for a short time, even although the standard had previously risen to 17s. per week. This did not continue long. Thirty years before that there were no painters'-shops in country towns; now they existed almost in every village: a host of country-bred painters accordingly began to pour into Edinburgh, and the wages fell once more to 17s. per week. In 1832 we have a pretty accurate account of the number of painters in Edinburgh and Leith: it was computed that upwards of 450 turned out to the Reform Bill procession, and that as many were still left as to make up the number to 600. The wages then were 18s. per week, at which rate they have, with some little interruption, continued ever since.

The number of painters in Edinburgh and Leith at the present moment is stated at 700. But the very precarious nature of the employment, and the migratory habits of the painters,—or rather of those who are *not* painters,—render an attempt at precise enumeration out of the question. During the height of the summer season there are much nearer a thousand hands connected with the business than the number stated. Good decorative painters receive more wages than the amount above given. From "eighteen shillings and a constant job"—this last consideration is a powerful inducement—up to two guineas a week, there is every variety of grade. But the wages of a plain house painter never exceed 18s. a week. Two-thirds of the Edinburgh painters, however, are idle four months out of the year, so that the average amount of the wages a journeyman house painter derives from his business does not exceed 11s. or 12s. per week!

There have been various attempts to establish a trades'-union and friendly society among the Edinburgh painters; but, whether from the disorganised character of the business, or—what seems more probable—from the extreme poverty of its adherents, these attempts have uniformly failed.

TRAFALGAR-SQUARE.

If a lady may be allowed to offer an observation on the proposition made by an architect in the last number of the *Builder*, on the important central piazza called Trafalgar-square, I would venture to remark that the one column dedicated to the immortal Nelson (and no doubt intended to be some day completed) is passing well in its present form; the terraces are pretty; the porticoes, considering that they adorn a London structure, are not bad; and, in fact, all that the façade of the National Gallery requires is to have the intervals, or long paries, ornamented; and there are many British architects who could do it in a manner not to *disgrace its position*. As a National Gallery it has been justly condemned, and is altogether contemptible.

The dome (shall I call the inverted cup by that name?) is only fit for a stable belfry; and the pair of domicules, or pepper-boxes, to what use can I assign them? Sweep these away: a comparatively small sum, with a little good taste, might substitute something more appropriate. But to pull down the whole solid (and not very unsightly) pile, would not only cost much, but must again involve in hoarding, in filth, and in *débris*, this very important and commanding position.

My work-box, an Indian one, which is architectural, and in design not very unlike the National Gallery, furnishes a not unpleasing, nor inappropriate, model for a noble dome and a pair of terminal towers. But the idea of pulling down the loved monument! For what? Is it to remove the coil of cable, and to supply in place thereof an anchor? or is it a h-ankering after change only? An anchor might induce the hope that national gratitude be not swamped in the Hero's Glory by owing him too much!

Were such fantasias to be indulged, despite the expense, we should have again a stonemason's yard for five years at least in the great centre of London, from which all the causeways radiate: and then only think of a pair of needles! let me suggest that there be *three* instead, and that Cleopatra's needle be the centre, the Iron Duke making of course the third.

Now, in sober earnest, instead of expending 50,000*l.* or more on such *recreations*, suppose that the ill-placed barracks, and cramped work- (or rather poor) house be demolished, that these sites be added to the National Gallery, and that designs for such be supplied by *competition*, that an opening be made thence into Leicester-square, and that a School of Sculpture and Design be founded in this location, which, if properly carried out, might then excite the rhapsodies of many amongst your scientific or poetical correspondents.

A friend informs me that the purchase of old houses, and demolition thereof, with the new construction of the square, cost the public 250,000*l.*: this appears heavy, but the new rental is also large. To finish the thing, surely the Board of Works will not grudge a little,—and for a model they shall have the work-box of, Sir, your obedient servant,

Threadneedle-street. CLARA.

FORM OF CHIMNEYS.

Your correspondent "Studens" (p. 141) suggests that the form of chimneys should be that of an "inverted funnel," widest at the base, and contracting towards the top, in order, as he thinks, to prevent the ascending air from spreading laterally, and thereby diminishing its momentum. Now, is not this the old system on which all our dwelling-house and factory chimneys have hitherto been built, and which have been proved by experience to be certainly not the best form? Some very elementary considerations will show that a greater momentum is obtained by a chimney increasing in size upwards, and thus allowing the air to expand. If a person blows in at the *expanded* end of an ordinary straight trumpet, he will find that there is a great expenditure of wind to no purpose, the force being entirely lost, and no vibration produced in the metal. But if he turns it round, and blows in at the small end, he will find that a small quantity of air forced in will produce a powerful vibration through the whole length of the instrument. The same thing takes place in chimneys, which are only a peculiar kind of wind instrument; a gradually increasing width producing a greater "draft" than a straight or contracted flue. From this, it follows that the mouth of the flue next the fire must be as small as is practicable, and expand upwards from this point. The best known example of the working of this principle is in the advantage of the register-stove over the old-fashioned wide-mouthed "inverted funnel" shaped flue, which was from time immemorial placed over every fireplace: the register-stove has a small mouth and an expanding flue above.

It is high time that we went to the *root* of the matter, or in other words, to the place where smoke first *enters* a flue, and not where it escapes.

E. W. T.

Notices of Books.

A Treatise on the Law and Practice relating to Letters Patent for Inventions. By J. P. Norman, M.A. of the Inner Temple, Barrister-at-Law. London: Butterworths, 7, Fleet-street. 1853.

There have been several books on the Patent Law published of late, but the present appears to be one of the most elaborate. It contains a good deal of the wisdom of experience gathered from actual circumstances which have transpired, and questions and cases at law which have been discussed and decided. The references to such cases and their peculiarities are numerous,—many of them curious as well as interesting; and the work besides contains a complete account of all the necessary processes and forms to be gone through, pitfalls to be avoided, and qualifications and safeguards to be looked to and taken advantage of in seeking protection from the law for the fruits of inventive genius.

Report upon Preliminary Considerations in respect to the Establishment of a Place of Extramural Sepulture for the City of London. By William Haywood, Surveyor to the Commissioners of City Sewers. 1853.

This report by the ever-active City surveyor is well timed; for it seems evident now that ere long every intramural metropolitan graveyard *will* be closed,—unless, indeed, Lord Palmerston cease to be Home Secretary before the work he has to do in regard to them has been done. Mr. Haywood's report consists mainly of general and prudential considerations preliminary to any decided measures being taken as to the site or formation of an extramural cemetery. Since the report was issued, we observe that a proposal has been made by the new Cemetery Company at Woking to the City Corporation as to the burial of paupers and others from the City. The charges which they propose appear to be exceedingly moderate,—something like 14s. or 15s. for each pauper funeral—ground, opening, and transmission all inclusive, and a very few shillings more for funerals of the artizan class, exclusive of some 3s. or

3s. 6d. for each of any additional number of friends or attendants who may be invited, and be conducted by railway to the funeral at Woking. These arrangements are proposed to include the whole of the cost or expense of such funeral, whether to the City authorities or the citizens, the company being willing to devote ample space in their extensive cemetery to the City requirements without any further payment.

Industrial Instruction in England: a Report made to the Belgian Government by the Chevalier de COCQUIEL, Doctor of Laws; translated into English by PETER BERLYN. Chapman and Hall, 192, Piccadilly. 1853.

BELGIUM, like England, having discovered, during the International Exhibition in London, her want of industrial organisation and instruction, much the same measures have simultaneously been suggested and are being carried out in the one country as in the other; and in the meantime the Belgian Government sent an intelligent political economist, Chevalier de Cocquiel, to this country in order to report on the effects produced here by the absence of means of industrial instruction. The present pamphlet contains the results of the Chevalier's inquiry, and is chiefly composed of the information he procured relative to the most important professional schools of the United Kingdom, which might be proposed as models. The translation by the author of the "Popular Narrative of the Great Exhibition" appears to be a clear rendering of the original.

Miscellanea.

GAS.—A new mode of heating the Music Hall at Worcester is described by the local *Herald*. The heating apparatus consists of three brick cylinders placed in the basement under the hall, containing an arrangement of gas-tubing, perforated so as to afford hundreds of jets of flame. From these cylinders only pure warm air is said to be given off, the residuum of combustion, viz. carbonic acid and aqueous vapour, being taken away in a separate tube, without however any waste of heat; that tube being inclosed in the one containing the purified warm air, to which its heat is imparted. The pure-air tube is conducted beneath the floor, which it traverses in the centre, having seven openings of perforated zinc, fitted with slides to admit or exclude the hot air. The apparatus, adds the *Herald*, consumes only 520 cubic feet per hour, and an hour's supply of hot air is sufficient for an evening's concert, while it also insures complete safety. Mr. Richards, of the local gas-works, arranged the apparatus.——The Preston Gas Company have agreed to a reduction in the price of their gas to 4s. 9½d. per 1,000 cubic feet, with discounts varying from 10 to 30 per cent. and to the appointment of a public inspector of meters, and other provisions, to be inserted in the bill about to pass in Parliament.——At Leslie, in Fifeshire, the gas consumers have memorialized the gas company as to the quality of the gas supplied to them.

MANCHESTER A CITY.—Doubts having existed as to whether the establishment of a cathedral and a bishop of Manchester constituted it a city, and the corporation and inhabitants being unwilling to regard it as such without an express title to do so, the late Government was memorialised on the subject. On their resignation, and the installation of the new Government, Lord Palmerston, very soon after taking office as Home Secretary, communicated with the mayor, and the result is, that a royal charter has been sent down to Manchester, formally creating it a city; and the honour thus conferred by her Majesty has been duly announced to the public by proclamation.

DESTRUCTION OF ANOTHER CHURCH BY FIRE.—The parish church of St. Hilary was burnt to a mere skeleton on Good Friday night, or the following morning. During the day a fire had been lit in a small stove in the chancel, the tubing of which ascended perpendicularly through the roof, which latter was first discovered to be in a blaze, and shortly after fell in, before any one could enter the church. "The tubing had been in use for many years, but some fourteen years ago was altered to its present position." It must have been pretty well rusted through, one would think, by this time. In the stove itself but a few embers remained, and the church "was very chilly" after service. The roof was thick laid with snow. On the whole, there seems to be little doubt but that, as a good fire would be lit in the morning, sparks from it must have ignited some soot in the old tube, where it came into contact with the roof, and fired the latter.

ST. PANCRAS OLD CHURCH.—I have lately read in the *Builder* various articles on graveyards. The following I give *verbatim* as extract from my diary:—"Good Friday, March 25, 1853.—The church I intended going to was not open, therefore I walked further on till I could see another. Passed the station at King's Cross, and went on till I came to Old St. Pancras Church, and walked in: the inside appears uncommon, and I did not admire it; sermon good, but music very bad; the meaning of the word "*laudamus*" was not understood, or the *Te Deum* would not have been rendered so dismal and so unsuited to the words. The inside of the building appears rather dark; but I noticed a peculiar appearance on the walls that struck my attention. After service walked round the outside of the building, and was horrified at discovering the reason of this peculiarity. The floor of the church is of course level inside, but the ground outside rises from this level at the western door, so that at the east end it is considerably above the floor level, perhaps about 4 feet. The ground round about appears to be full of graves, and the moisture of the earth loaded with the products of decomposition at once accounted for what I had seen. On my arrival home told them what I had seen, and cautioned them not to go to that church in warm or in damp weather."—C. P. S

STRIKES AND GENERAL DEMAND FOR RISE OF WAGES.—There is something rather remarkable in the present movement for a rise of wages. It is more general and more simultaneous than we recollect of in past instances. It is not only a movement of certain classes of workmen in several towns at once throughout the country, but of every class in many towns, and of agricultural labourers in the country districts, and in Ireland, as well. Moreover, in some places, such as Bristol, certain classes are now to be supported in their endeavours to better their position by others having no common interest in them but that of labour generally. It appears as if there had been a common understanding previously come to quietly throughout the country amongst the working classes in general; and should an amicable settlement of differences, to the mutual advantage of employed and employers alike, be thus come to, we shall rejoice in the result, much more on account of the former than of the latter. As yet we are glad to see little or no appearance of bad feeling on either hand, and we earnestly trust that this will continue to be throughout a friendly strife—if strife it can be called. The employed may depend on it that the employers, as a class, will willingly, if they can, so arrange their prices and their profits as to benefit both parties, and as for the employed, they are not so unreasonable, we believe, as to look for advancement of wages which can only come out of the pockets of the employers, and not out of the purse of the public, who are the true and only ultimate paymasters of both.

IMPROVEMENT OF DWELLINGS AT WOLVERHAMPTON.—On Tuesday in last week a public meeting was held at the Wolverhampton Exchange, in order to establish a society for the improvement of the dwellings and lodging-houses of the poor of the town. The movement, as we have already intimated, was originated by Lord Ingestre, who was present, together with Lord Lewisham, Lord Talbot, and other influential gentlemen. Lord Ingestre maintained that the investment proposed would return a good percentage on capital. Lord Lewisham, according to the local *Chronicle*, which is to give a full report this week of the speeches at the meeting, "assured the meeting that the aristocracy of England were not, as had too frequently been said, the enemies of the working classes. They had been much misrepresented and greatly misunderstood, and he was convinced that, when they seized upon such opportunities as these, the working classes would learn to understand the aristocracy better and to respect them more. He was not one of those who desired to see the working man a degraded being; on the contrary, he wished that he should enjoy independence and respectability, and should always be ready to co-operate in any design likely to promote that end." At the close it was announced that the Earl of Dartmouth had taken fifty shares in the new company, and other intimations of a like nature were made to the meeting, which passed appropriate resolutions in favour of the objects in view.

THE WHITTINGTON STONE.—In your last publication there was a paragraph signed "P. P," regarding the mutilated state which the stone is in at the foot of Highgate-hill, which he denominates "The Whittington Stone:" he is very much out in his knowledge, for that present stone is a very modern one. For his information, I beg to inform him I am the owner of the *ancient* stone: it was removed some years since from Highgate-hill to the corner of Queen's-head-lane, Lower-road, Islington, and was affixed to the corner of that old hostelry, as a spur-stone, to prevent carriages running against the west corner. In the year 1829 my father, who was a builder, entered into a contract with Mr. Bird, the present landlord, to take down the old building and erect the present edifice, the old materials becoming his property; and among such old materials *was the Whittington stone*. I had it carved into a sort of pinnacle, which can be seen at any time on applying to Mr. Harris, the Kings Arms, corner of Park-street, Liverpool-road, Islington. If "P. P." should doubt this, I can bring forward the workmen who removed, and the mason who carved it.—CHAS. FOSTER.

CLEOPATRA'S NEEDLE.—Mr. Anderson, a director of the Crystal Palace Company, left England for Egypt about six weeks since, to make arrangements for the transmission of Cleopatra's Needle, but it would appear that great difficulties have presented themselves. The needle, as was stated by us long ago, is built into a part of the sea-wall and ramparts forming the fortification of the city of Alexandria. The Viceroy strongly objects to a breach being made or left open for any time in the present state of European politics. He assured Mr. Anderson that every facility should be afforded to any person commissioned by the company to collect copies of ancient works of art in Egypt. Mr. Anderson was proceeding to inspect the statue of Rameses at Mitrahenné, and to visit the new excavations at Saccarah, which are likely, it is thought, to furnish valuable contributions to the fine arts departments of the palace at Norwood

DEATH FROM FALL OF ARCHES.—An inquest has been held at Ipswich on the death of a workman from the fall of three arches while striking them, on the 21st February last. The arches formed part of the basement of a brick warehouse in course of erection in Museum-street, and were being struck after being two days turned. Mr. S. G. Groom, architect, amongst others, gave evidence. In his opinion the accident was caused by removing the centre from the largest arch first; and had the centre been removed from the middle arch first, he did not think it would have occurred. Verdict, "Accidental death," but "due care was not used by the persons striking the centres of the arches," deceased being one of those so employed.

THE IRON TRADE.—The quarterly meeting of masters have felt themselves compelled to recognise the downward progress of prices by a formal nominal reduction of 1*l.* per ton on bar iron, and on all other kinds in proportion,—a resolution come to at their preliminary meeting on Thursday last, when almost every one of the great masters was represented. The alleged reason of the reduction is a regard for the interests of the "small manufacturers." The masters, in short, now feel that in damaging the business of their customers they have been playing the deuce with their own. "It was evident," says the Birmingham correspondent of the *Morning Herald*, "that owing to the enormous high rate of wages, as compared with that of last year, and the price of coal and all other material used in mining, great reluctance was felt to submit to the resolution." As to the high wages and price of coal, they have themselves alone to blame.

BUILDERS IN 1853.—I presume it was a wooden builder who attempted to get the wall upright with a screw-jack (recently mentioned in your pages), as we brick builders should have used a plumb rule. In the nineteenth century it is the fashion for one man to undertake the general trades of building, and the work is left to journeymen sub-contractors. How much better was business done in the eighteenth century, when each master *was* master of what he undertook, and work was measured and valued by competent surveyors, and a price put according to merit: much of the work that is done now is dear at any price. Many men are silly enough to employ wooden builders to build brick and stone houses. Who but an idiot would employ a carpenter to make a coat, without it was a box-coat, and then it is better to employ a furnishing undertaker.—* * *

ARCHITECTS AND UPHOLSTERERS.—I read, I believe, in the *Builder*, that shortly "Notre Dame" would be "in the hands of the architects," in order that the venerable fabric may be suitably adorned at the forthcoming solemnities. I imagine there must be some error here, as with us it would be "in the hands of the upholsterers;" but as we are "varnished barbarians," perhaps we are wrong in these matters: will you, who are a great authority in matters of art, deign to set right on this head—AN UNVARNISHED BARBARIAN?

THE CLIMAX OF THE FLUE SYSTEM.—At Kingsdown, near Deal, there is a new church of St. John the Evangelist. The stove smoked. Preparatory to the application of a permanent flue, "to remedy the evil," a "temporary *wooden* one" was put up: it blazed up on Sunday morning, and the flames had caught the rafters, when, just in time, a few passing fishermen descried the fire. The *Builder* should immortalise the churchwardens as the authors of "The Deal Flue."—*Gateshead Observer*.

ZINC HOUSES FOR AUSTRALIA.—Portable zinc stores, dwelling-houses and cottages, are being manufactured at Edinburgh, under a patent obtained by Mr. James Middlemass. As described by the *Edinburgh Post*, the roof is sustained at the centre by an iron tye-rod, screwed up to iron stretchers, acting as stents, with a plat in the centre, where the roof exceeds 12 feet in width. The walls are composed of overlapping panels, along which iron rods pass at 3 feet from the ground, and, again at the eaves, along the whole sides, through metal eyes, and are screwed up from the extreme ends, so as to tighten and compact the structure. These walls are secured to the ground by cramp irons or brackets, having holes for pegs or for screws, to attach them to sleepers of wood, or by which they may be batted down to sleepers of stone. A front store, with two dwelling-rooms behind, is afforded within one of these zinc houses, of 21 by 15 feet, the interior height of the side walls being 8 feet, and that at the centre 11 feet. The front is gabled and ornamented with finials, and the erection extends backwards longitudinally. In the width of the gabled front, there are a shop door and plate-glass window, the shutters of the latter rising and falling in halves. The rising portion of the shutter, moving upon quadrants, serves the purpose of a sun-blind. The living-room windows open in the French fashion. The cost of these cottages is said to range from 50*l.* to 100*l.*

ST. JOHN'S, NEWFOUNDLAND.—A new church, convent, and school-house are to be erected at St. John's for the Roman Catholic bishop, Dr. Mullock. The plan consists of three sides of a quadrangle; the church occupies one side, the schools the opposite, and the third is taken up with the convent. The church consists of a nave with aisles, a chancel with lady chapel on its north side, a north porch, and a tower surmounted with broach spire at the west end of the north aisle. The convent is designed to accommodate a community of six nuns, and contains the requisite community, reception, and private rooms, chapel, refectory, choir, and cells. There are four schools, each 30 feet square, attached. The dimensions of the church are 100 feet by 40 feet in the clear. The style of all the buildings is Early English. Mr. J. J. McCarthy, of Dublin, is the architect.

TURNER THE PAINTER.—I was early thrown into connection with Turner, and knew him well. When first I met him I was but ten years old; it was under very auspicious circumstances. There were others, as you may imagine, in company; there was his father, too: it was at his box at Twickenham. It was a most agreeable day, for the great artist was, as all who knew him well are aware, a right merry fellow at heart. An incident occurred then which revealed the essentially practical turn of his mind; and subsequently, whenever I had the good fortune to meet our great painter, some word, some thought of his struck me so, that the particular moment and all surrounding circumstances are ever present to my mind. Like the sun, Turner lighted up all around him. His conversation, that is, his free communication of thought, was, like his pictures, if I may so express myself, full of atmospheric effect. Some effort was required on the part of the listener to penetrate into his meaning; but the exertion was well rewarded. His eye was not *dull*, as it has been printed down, but shone like a Koh-i-noor with all its "facets." These random thoughts, with many others in connection with this truly great painter, have been suggested to me on suddenly seeing, for the first time, that marvellous creation, "The building of Carthage." How I became so intimately acquainted with the great man so early in life was this: my father, who, you know, produced a very beautiful work on "Italy," published by Murray, in 1819, or thereabouts, availed himself of Turner's talent for the purpose of having finished watercolour drawings, made from some of his own pencil drawings; and this was done at the suggestion of *Cooke, Pye*, and other celebrated engravers employed upon the work. So I was brought into contact early with "Turner." A. W. H.

EMPLOYMENT OF IRON TO BUILDING PURPOSES.—Mr. Charles Cowper, of Chancery-lane, has patented a peculiar method of manufacturing iron for building purposes. His claims are for wrought-iron beams, with two or more bearing surfaces on their lower flanges, for floors, roofs, bridges, and other like structures; the manufacture of rolled wrought-iron joists of certain sectional forms for building purposes; a mode of constructing hollow wrought-iron beams, breastsummers, doorposts, and columns; and the manufacture of rolled wrought-iron bars, of certain sectional forms, for window frames and cases.

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For works at Oakdean, Kent, for Sir James Carmichael, bart.: Mr. Horace Jones, architect.

Ashby and Sons	£2,100	0	0
Mansfield and Sons	2,044	0	0
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Clemens	1,847	0	0
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TO CORRESPONDENTS.

"Architectolator" in vote of thanks to president is a matter of course. Our correspondent's invocation is just enough, but does not apply to the case he puts. "Oh, Architecture! how long before 'I chabod' is wiped from thy forehead.—If thou wilt put away thy diadem of honour, and give that which thou shouldst receive? *Ai! ai!* When wilt thou learn that the majesty of a queen is in herself? That a noble self-conceit is the mother of all great works?"). "Registrar of Newspapers." "J. W." ("the gallery in a room forms part of that room"). "A Pupil" (it is not just, nor do we think it usual, that a pupil should provide his own colours to tint his master's plans with). "W. H." "J. S." "W. S." "G. T." "H. L. C." "R. R." "J. W. P." "W. S." Leicester (we cannot advise). "R. J. and F. L." "W. B." "Alpha." "W. C." "B. O." "C. L." "J. D." "R. S." (practically, no; theoretically, yes). "R. S." "C. C. N." (will appear).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

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PARTIES in the above Line are respectfully informed that an OFFICE has been OPENED for the SUPPLY of FIRST-RATE MECHANICS (Carpenters, Joiners, Bricklayers, &c), at the National Coffee-house, 1, Little Turnstile, Holborn, where all applications for men, addressed to W. RICHARDSON, shall receive immediate attention.

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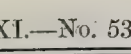
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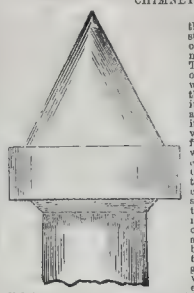


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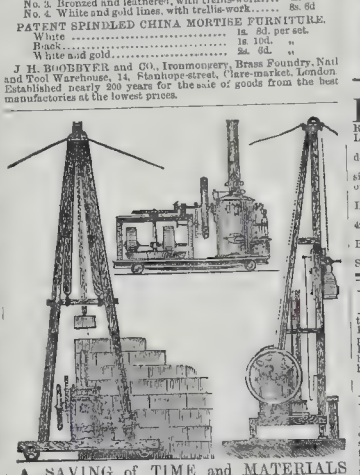
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NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 45, Albert-street, Manchester.

TESTIMONIAL

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,
"JAS. ABERNETHY."

WANTED, a PORTABLE CIRCULAR SAW BENCH, for Cutting Slate and Stone.—Address, stating price and other particulars, to Mr. N. 8, Pier-head, Wapping

GUTTA PERCHA TUBING, for the CONVEYANCE of WATER to DWELLINGS, FACTORIES, &c. &c

Many inquiries having been made as to the DURABILITY of this Tubing, the Gutta-Percha Company have pleasure in drawing attention to the following letter, received

FROM C. HACKER, ESQ. SURVEYOR TO HIS GRACE THE DUKE OF BEDFORD.

"Office of Works, Woburn-park, Jan. 10 1852.

"In answer to your inquiries respecting the Gutta Percha Tubing for Pump Suctions, I find that the water has not affected it in the least, although it will eat lead through in two years. We have adopted it largely, both on account of being cheaper than lead, much easier fixed, and a more perfect job.

"Yours, &c. "C. HACKER."

N.B. The Company's Illustrated Circulars (73 pp. 4to.), containing Instructions to Plumbers for jointing tubes, lining tanks, &c. will be forwarded on the receipt of four postage stamps.

THE GUTTA PERCHA COMPANY, PATENTEES, 18, WHARF-ROAD, CITY-ROAD, LONDON.

FARM AND COTTAGE PUMPS.

WARNER'S PATENT CAST-IRON PUMPS, for the use of FARMS, COTTAGES, MANURE TANKS, AND SHALLOW WELLS.

Patent Pump	£1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts required for fixing	3 0 0

Larger sizes if required.



To emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and cheapest pump hitherto introduced.

May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers,

JOHN WARNER AND SONS,
8, CRESCENT, JEWIN-STREET, LONDON.

Every description of Machinery for raising Water, Fire Engines, &c.

The usual allowance to the Trade.

FOWLER'S IMPROVED FARM and COTTAGE PUMPS.

To be had of any Ironmonger or Plumber, 1l. 15s.

The usual allowance to the trade.



PUMPS of SUPERIOR CONSTRUCTION bored perfectly true by improved machinery, in various plain and ornamental patterns, for squires and market-places, roads, conservatories, liquid manure, ship, barge, brickmakers, contractors, gold diggers, brewers, chemical works, and in wrought and cast-iron, copper and brass, for hot or cold liquors, &c. &c. Long barrel and hydraulic lift-pumps, with handles on planks; and engines of various powers, for wells of any depth.

PUMPS on HIRE! The largest stock in England of single and double pumps, from 4 to double 12in. barrels, prepared for hand or steam power, ready for use on reasonable terms, at

RENJ. FOWLER'S, Hydraulic Engineer, Hot-water, Steam and Gas Apparatus Manufacturer, New Factory, Whitefriars-street, Fleet-street

STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS, Engineers and Contractors, John's-place, Holland-street, Southwark, London.

PUMPS OF EVERY DESCRIPTION, in Iron and Brass, at moderate prices, suitable for Brickfields, Roads, Gardens, Cottages, Stables, Contractors, Ships, Barges, Liquid Manure, &c. &c.

PUMPS on HIRE, at reduced prices, from 4in. single to 19in. double barrel, always ready.

FORCE or HYDRAULIC PUMPS, on an improved principle, single, double, and treble-barrel, to work with handles on Planks or Cranes Framed.

WELL-BORING TOOLS and Pipe, kept in stock for Sale or Hire

IRON PAILS, adapted for Builders' use and hot climates, at 48s. per dozen.

A CRANES, or CRABS, Travelling Machines, Screw Jacks, Blocks, Chain, &c. for lifting heavy weights

Prices and estimates on application to M. A. RICHARDS and SON, Upper Ground-street, Blackfriars Bridge (Surrey side)

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and Sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand painting, in papers for the cottage or the mansion. Borders, Pilasters, Centres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste Always on hand a large stock of French and all Continental Manufactures.

Machine Printing Works, Royal Mills, Waudsworth, Surrey; Block Printing Works, 451, Oxford-street, London.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 500, OXFORD-STREET, where all goods can be obtained on the same terms as at the Factory.

GUTTA PERCHA PAPER FOR DAMP WALLS J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 115, Whitechapel, near the Obelisk, and 500, Oxford-street.

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 23, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bedroom Papers	from 0½d. per yard.
Painted Marble, Granite, and Oak Papers	from 0½d. do.
Superior Dining and Drawing-room Papers	from 1½d. do.
Satins and Flock	from 3½d. do.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 9d.; bes holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

BANGOR WHARF, King's-road Bridge, Camden New-Town. Messrs. SPRINGFIELD and COOPER having purchased of Mr. W. W. RAWLINS the BUSINESS he has for many years so satisfactorily conducted on this wharf and premises, respectfully solicit the continued patronage of Builders and others generally, particularly those in the immediate locality and neighbourhood. As they possess the same facilities as their predecessor for the securement of the best class of goods they deal in, both as regards price and quality, they assure them that no effort or exertion shall be wanting on their part to deserve the patronage conferred on him.

Bangor Wharf, Camden-town, April 4, 1853.

PATENT and REGISTRATION OFFICE. —Persons desirous of procuring PATENTS, &c. for their inventions, can have every information, gratis, on application to J. S. EDMANS and CO. 198, Fleet-street, by whom also illustrated and working drawings of inventions, specifications, abstracts, &c. are prepared. Provisional protection, 10l. 10s. Capitalists found.

TO BARGE OWNERS

WANTED to HIRE, for Twelve Months, at per freight or month, a CANAL SAILING BARGE.—Apply to Mr. C. DAVIES, Falcon Wharf, 80, Bankside, Blackfriars.

TO CONTRACTORS, BUILDERS, AND COMMITTEES OF PUBLIC INSTITUTIONS.

NOTICE.—The well-known, first class Eight-day TURRET CLOCK at the Mills, Ponder's End, in good going order, showing the hours and minutes two ways, on two 4-feet dial-plates, with inside dial and hands to set out-side hands, quartering and chiming on eighteen fine-toned bells, and playing seven different tunes, including the ever-and-ever-a-day bush of cupola, with stair case and landing, TO BE SOLD.—Apply at THOMAS COMPTON'S, Auction and Estate Agency Offices, 73, Coleman-street, and Enfield, Middlesex.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, firmness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of white lead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the materials primarily made use of to produce it, an imperfect mode of produce in, or by mixture with the oxide or zinc, obtain so calculated to give a heavier weight, at then produces a very inferior indeed of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark—In Hull be Messrs. BLINDELL, SPENCE, and Co.; in Liverpool, and by Messrs. T. B MORLEY and Co.; and by the Company's Grinding Agents. In London, Messrs. CHARLES DEVAUX and CO., wholesale agents, King William-street, City; Messrs. CHARLES JACK, wholesale and retail, 5, Tottenham-court-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWRENCE and Co., Norfolk-street, Liverpool. In Leith, by Messrs. H. ANDERSON and CO., Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards. To be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Perth, South-ampton, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 19, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT.—The PERMANENT WHITE of the Ancients. Its use hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of this Paint, with seven gallons of oil and turpentine, will cover as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in the first instance, as well as durable on every other consideration, to the contractor, for extensive works taken at competition prices, this is important The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is greatly great.

For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, as it equally a lapted for all climates.

A supplier with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Dock).

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent of (hereafter) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses, is its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the Proprietors was a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the fair way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead; and they can state the proportions to be as 60 to 120, that is, 60 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the Oxichloride is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as much both for work technically called Flatting, and for work intended to be varnished. For the use of Paper Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames-street.
LIVERPOOL	Mr. Richd. Cooke, 7, Side-lane
MANCHESTER	Messrs. Johnson and McGowan.
LEEDS	Mr. James Douglas.
SUNDERLAND	Messrs. T. and E. G. Jepson.
DEVONSHIRE AND CORNWALL	Mr. John Young. Mr Richd. Penrose, Tavistock and Plymouth.
EDINBURGH (AND EAST COAST OF SCOTLAND.	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh-street.
GLASGOW AND WEST COAST OF SCOTLAND.	Mr. John Silmshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

TO SHIPOWNERS, BUILDERS, HOUSE AND SHIP-PAINTERS, MINING COMPANIES, RAILWAY COMPANIES, AGRICULTURISTS, AND THE PUBLIC IN-GENERAL.

THE BRIDGEWATER FIRE and WATER-PROOF MINERAL PAINT.—An important discovery.—In one of the Brit ger ate Mountains of New Jersey, in the United States, is found a mineral substance, of a red brick colour, which is successfully used as a paint, and denominated "Bridgewater Paint." Its properties are durability, adhesiveness, and flexibility. It is also impervious to rain or sea water. After it has been applied and exposed to the weather a few months it becomes fire-proof, and as durable as stone. It never fades or changes its colour in the hottest climates, whereas most other paints quickly fade and perish. Its adhesiveness is so great that after it is dry it can never be removed from any substance to which it has been applied. It is used on buildings of wood, brick, or stucco; on the funnels, decks, sides, and bottoms of ships; on barges and boats; on steamships, iron bridges, iron railings, park fences, &c. It preserves railway tracks, and all natural impediments, &c. A building of wood, brick, or stucco covered with it will last as long as the materials of which it is composed. Ships painted with it will be preserved from worms, railway tracks, and all natural impediments, &c. A building of wood, brick, or stucco covered with it will last as long as the materials of which it is composed. Ships painted with it will be soon dry and impervious. When applied to ships' bottoms its impervious qualities will prevent them from leaking. A ship painted with it may be sent to sea on the fourth day after the finishing coat. It will harden in salt water. The Bridgewater paint covers a much greater surface than any other paint, and has another advantage, viz. it requires a smaller quantity of oil. It is spread out easily, and does not, as other paints, emit any unhealthy effluvium. Its natural colour may be rendered paler or darker according to the directions for use.

TESTIMONIAL from Mr. Wm. Bastick, Analytical Chemist, Brook-street, Grosvenor-square, London;

"I have analysed the Bridgewater Paint, and find it to contain in 100 parts the following ingredients:—Silica, 39·60; alumina, 33·75; peroxide of iron, 17·63; traces of oxide of manganese, lime, and magnesia, 0·03. These ingredients are in a state of chemical combination in the paint, which is consequently undecomposable by any of the reagents by which it is likely to be opposed. Several American mineral paints have been lately brought to me for analysis, which, in their composition, resemble the Bridgewater Paint; but I have found that this paint is the only one that, while it contains sufficient silica to render it indestructible, it contains a larger quantity of mineral oxides than the others, and is, therefore, better calculated to form, with oils, a more permanent and useful paint, being neither liable to fade or decay."

Sole Consignee for the United Kingdom, JOHN FIVES, 17, Cornhill, London. Sold by LIVETT FRANK, Oil and Colour Merchant, 15, William-street, Lambeth, and by agents in most of the principal towns of the United kingdom, of whom may be had (or of the Consignee) directions for use, and testimonials from officers in the service of the American Government, and also from shipowners and others in the United States, where it is extensively used.

PORTLAND CEMENT.—CHARLES RICHARDSON, 6, South Wharf, Paddington.

CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties enable it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its general use. Contractors and Builders will find that these two important qualities may be depended on as the greatest certainty in that manufactured by CHARLES J. HILL and Co.'s Portland Cement Works and Plaster of Paris Works, Faversham, Kent, at which place, as also at No. 3, Whitehall-place, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

PORTLAND CEMENT.—JAMES WESTON having entered into a portion of the CEMENT WORKS, in Mill wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in particular that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl street, Poplar, or Middle Wharf Scotland yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS. NORTHFLEET, KENT. Messrs. ROBINS and Co. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1853, whereby a more perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in the cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements made by the Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT

Messrs. ASPDIN, ORD, and Co.'s have much pleasure in informing consumers of their Cement, that they have, by means of records, ascertained the exact proportions required to produce the quality of this cement without any increase in price.

Engineers and architects are invited to inspect Aspdin's Patent, as their numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at the office. New-wharf, Westminster, London; at their works at Gateshead-on-Tyne; or of their agent, Mr. HENRY ROBINSON, 91, King-street, Liverpool.

ROMAN and OTHER CEMENTS, Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who, in 1796, first introduced PARKERS ROMAN CEMENT; also Terras and Portland Cements, English and French Plaster, Parian Cement, Cotta Chimney Pots, Trusses, &c.

Manufactory, Mill Wall, Poplar; Depôts Commercial-road, Lambeth; and Paddington-basin.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted for submarine works, from the rapidity with which it sets and hardens under water. It has been used in the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, and to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The uncommonness of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.

Agent for Southampton, R. I. FLUDER, American Wharf.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no calcining. Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SEGONDS, PAVIORS' STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf, Paddington.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One coat will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 32, Steel-yard, Upper Thames street. A liberal allowance to wholesale dealers.

MINTON and CO.'S ENCAUSTIC and other PATENT TILES for Churches, Entrance Halls, Conservatories, Balconies, &c.; Antique, Geometrical, and Alhambra Mosaics, unsurpassed for artistic and highly decorative character and extreme durability, Slabs and Tiles for Fireplaces and Hearths, Copings for Grates, Door Furniture, White Glazed and Ornamental Tiles for Baths, Dairies, and Kitchen Ranges, may be had in great variety at their Warehouse, 9, Albion-place, Blackfriars-bridge, London, and at their Manufactory, Stoke-upon-Trent, Staffordshire.

PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c.

ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, many hotel testimonials respecting a MATERIAL which, when well wrought, is probably superior to any other for damp walls, roofs, flats, steps, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The best certain both prices in number, and approximate cost by measure. It is supplied that patent is supplied and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 163 (having been at first No. 111).

PAN TILES, 52s.; Plain, 35s. per 1,000; superior White and Red Facing Bricks.—Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gas and other shaped Goods, Windsor and Nonsuch Oven Tiles and Bricks, Paint and Parian Tile Cisterns, Patent Malt-kiln, and Corn drying floors, perforated Tiles, 12 in. square, Quarries, unequalled in quality and colour, at WARD'S old-established Honduras Wharf Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, before he forwards elsewhere.

Malm Place, half-washed Stocks, and Place Bricks, also on sale. These bricks are sound, well burnt, and unusually free from defects, very large proportion of the stock being suitable for external use.

Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

N.B. Light coloured pitsand of approved quality constantly on sale upon reasonable terms. This sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded Bricks to any pattern.

COWLEY, KENT, and ESSEX BRICKS; also Yellow and Pale Malm Seconds, Cutters, Paviers, Shippers, &c. &c.

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The Builder.

SATURDAY, APRIL 16, 1853.

THE Commissioners for the Exhibition of 1851, having nearly completed their purchases of land in Kensington and St. Margaret's, Westminster, for the proposed institution to be devoted to Industrial and Artistic Education, our readers will probably be glad to have its position and boundaries pointed out more precisely than has yet been done. The whole quantity purchased is about 80 acres. Its eastern boundary in the Kensington-road adjoins Lord Auckland's, 400 yards west of the Prince of Wales's Gate into Hyde Park, or about 80 yards from the entrance to what was long known as Gray's Nursery. It extends along the Kensington-road, westward, 1,000 feet, but a wedge-shaped portion of this frontage, running southward the whole length of what is called Gore-lane to a point, being covered with somewhat expensive houses, has not been purchased; thus the available frontage on the Kensington-road is reduced to 580 feet. At the western end of the 1,000 feet, a new road, 100 feet wide, is about to be formed, running southward towards the Old Brompton-road to a distance of 2,800 feet, the whole depth of the land purchased by the Commissioners. This road comes down to the old almshouses in what is called Cromwell-lane, founded by Mr. Methwold in 1652.* If continued on for 150 yards it would open into the Old Brompton-road, by the side of the Swan Tavern, opposite Selwood-lane, and give a direct way from the Fulham-road to Kensington.

The new road is to be intersected at the distance of 2,200 feet from the Kensington end by another new road, 80 feet wide, running east and west. The eastern boundary of the Commissioners' land at this end of it is about 60 yards from the "Bell and Horns," in the Brompton-road. At 130 yards from the "Bell and Horns" the new road we last mentioned will commence, and will run westward, according to the Commissioners' plan, considerably past their land, until it meets the Gloucester-road, opposite the the end of Earl's Court-lane. There will be another road from the Gloucester-road to the Commissioners' land, formed parallel with the last-mentioned new road, commencing nearly opposite the "Gloucester Arms." The Old Brompton-road, near the "Bell and Horns," where the new road will commence, is very narrow, but negociations are on foot with the owners of the piece of land formerly Mr. Pollard's, and adjoining Brompton Churchyard, for the purchase of a slip off the front so as to widen it.†

The whole cost of the land purchased at the date of the Commissioners' last report, namely, about 70 acres, was 213,500*l.* giving an average of 3,050*l.* per acre. For other pieces a larger sum has been paid.

What the Commissioners have in view is the foundation of an institution which shall "serve to increase the means of industrial education, and extend the influence of science and art upon productive industry,"—an institution to be rendered capable, by scholarships and by other means, of affiliating local establishments over the country and in its colonial possessions.

If the original intentions of the Commissioners are carried out, the New National Gallery (should its removal be determined on) will be placed on the Gore-house estate, fronting Hyde-park; the Commercial Museum at the Brompton end of the property; and in the central portion, a building in which the different scientific societies might meet, and others for "The departments of Practical Art and Practical Science."

An ancient pathway runs diagonally across the land (Brompton-park-lane to Gore-lane, before mentioned), but arrangements will doubtless be made, so that neither the public convenience nor the plans of the Commissioners will be interfered with.

The value of the adjoining lands will of course be greatly raised by this undertaking; and the owners will of course take into immediate consideration the extension of the proposed roads, and prepare for operations of no trifling magnitude. Great improvements have been effected in Kensington and the "village of Brompton" within the last dozen years. What was a nursery-ground that number of years ago, in the latter place, with a few hedge-bordered lanes leading to Kensington, is now the site of Pelham-crescent, Thurloe-square, Onslow-square, and rows of expensive houses. On the land which has been bought by the Commissioners, the then owner would make no improvements and permit no alterations. It remained rural, it is true, but neglected, blocked in, and unapproachable, and thus effective movement on the part of adjoining owners was prevented. In the "Domesday Book," where, according to Faulkner, the title of this parish is written Chenesiton,—and as Chenesi was a proper name, he thinks "it might have been originally termed Chenesi Tun, or the town belonging to Chenesi,"—the value of the manor of Kensington is put at 10*l.* Without going back to remote times, however, to give an idea of the extent to which land has increased in value, it will suffice to say that the sum now annually received as rent for some of it is twice as much as was paid for the fee simple by the fathers of the present owners.*

* The old residence known as Cromwell House is in the line of this road. Tradition points it out as once the residence of the Protector, but evidence is, we believe, against the assertion.

† On the plot here referred to, the "Oratorians" are about to build a very large church and residence, in the Italian style. Operations have been commenced.

* Amongst the evidences of movement in Kensington and its neighbourhood may be mentioned the establishment of a local newspaper, the *West London Guardian*, which deserves the credit of being what it professes to be,—a local paper, not a mere reprint of general news. A society has been established within the last fortnight for the purpose of encouraging and diffusing a sound taste for the Fine Arts, by holding evening *Conversazioni* and *Exhibitions*. The first council consists of Mr. R. Ansdell, Mr. Richard Clark, Mr. Henry Cundell, the Rev. S. Price Davies, M.A. Mr. John Lewis, Mr. James Merriman, Mr. Henry Pilleau, Mr. Edward Prentis, and Mr. Frederick Purdy.

A JANGLE ON BELLS ARCHITECTURAL, BY A LOVER OF DAY-DREAMS.

JANGLE THE SEVENTH.†

EDUCATION.

"Are its laws straight?" I could not shake the words from my memory; yet I was not idle, but busily and earnestly employed: still in each interval of rest, and indeed more or less continually, over and over would these words keep recurring to my mind: "Are its laws straight?" I cannot say that I wished to shake them off and cast them from me: I felt their wisdom and their truth far too deeply for that; but still they gave me some uneasiness, for I could not clearly see in what manner and to what extent they were applicable to our glorious, yet fallen art.

And as I sat thinking in the deepening twilight, hardly caring to observe how dark the room was growing, and how strange shadows fire-thrown flitted fantastically on the walls; suddenly the fire shot up into vivid and cheerful light, till its rays lit up all the room, and lo! Pacifera stood revealed, with her quiet smile and thoughtful countenance; and while I hesitated for a moment ere I addressed her, she thus commenced:—

"'Are its laws straight?' Good would it be indeed if all those who, practising the noble art of architecture, not coldly and tamely as a means of existence, but with love and zeal, and as belonging to a great and noble brotherhood, in whose care and keeping the honour and welfare of their art were placed,—if, I say, all these did but feel the fulness of truth contained in these few words, and did but resolve to do their all to carry them into effect: we might hope for bright days for art even now, and many at this time upon the earth should live to see them.

I cannot say to what extent he who wrote these words was right in his application of them: I know not how far, and with what effect, men could be bound down to observances so rigid as the 'breadth of a fillet.' Yet, far be it from me to speak of the matter as either impracticable or undesirable, when one of so great authority has spoken so decidedly concerning it. And yet, though I cannot tell how far this might be done, I see another way by which men might put in practice these words, with, as I think, profit very great and lasting. For let me appeal to you, in what way does the architect in general obtain his knowledge of his profession? From what sources can he draw that wisdom and skill which are so assuredly necessary to the attainment of excellence in his art? Alas! is not the following, in the majority of instances, the case? At an early age he is placed in an architect's office, to be duly inducted into the mysteries and truths of his profession; but has not been there long before he finds that there are either no mysteries to reveal, or else that his master is ignorant of them: and as for the 'Truth,' it is subject matter of debate amongst men, and likely for some time to continue so. There is, perhaps, no more mortifying, puzzling, and perplexing situation than that of the real, earnest seeker after architectural knowledge: he neither knows what road to take, nor can he find guides able or willing to inform him; and if, determined to work, and eager to advance, he sets resolutely to read and to study, he probably throws away three-fifths of his time, and uses, comparatively speaking, Herculean efforts to obtain small results, solely because his energies are misdirected and misapplied. Books he probably has in abundance; and if so, he is most ludicrously puzzled with conflicting opinions: one professor speaks continually of Vitruvius, another ridicules that worthy altogether; one praises Grecian, and another Gothic; one swears by Palladio, and another in polite language, though probably quite strongly enough, inveighs altogether against him. Then in our own Gothic, while one exalts the so-called 'Perpendicular,' another entirely condemns it. Some would ensconce themselves in Lancet arches, while others think nothing worthy of attention but the works they term 'Decorated.' Nor if he turn his attention to the scientific part of his art is even then his task any easier: theories he may find in plenty, and which a short walk into a neighbouring street will often have the effect of entirely disproving; great, heavy works on science he may find, but the tools are so unwieldy that he cannot lift or use them; and his strength and time are wasted in wading through masses of preliminary information, which he needs not, and which only do him injury; in short, he wants 'system,' and without system of what avail are even the most exalted minds and the greatest talents? How, then, can we wonder that he should turn out careless and indifferent? A mock architect, in short, with neither love for his art nor belief therein; and the proper remedy for this is to make your laws straight. Not allowing, as in the present day, just any one and every one, be he who he may, learned or unlearned, educated or illiterate, to assume to himself the title and the office of an architect unchallenged and without hindrance; for if, indeed, once in five hundred years you may by this means secure the services and co-operation of a man of real talent; yet consider what a vast herd of ignorant and unprofitable pretenders you are by the same rule admitting continually till the profession is fairly choked with them and dragged down into the very dust. Now I think one of two things is certain, viz. either these pretenders have no business in the profession, or architecture is not, after all, worth the attention of any man gifted even with a moderate amount of understanding. For if a man can, as I have seen done more than once, jump suddenly from a stone-mason's yard, or a carpenter's bench, or a builder's office into the full-blown dignity of 'architect,' and can prove himself able to practise successfully as such without years of preparatory study

† See page 211.

and a regular induction into the profession, it stands to reason that there is nothing difficult of acquirement in the said profession—nothing hard to be understood—nothing, in short, above the capacity or beyond the grasp of very common minds indeed; and therefore, as such a profession cannot be in need of talent, those who possess such talent have very clearly no business there, subjecting themselves and their gift to voluntary degradation. But if on the other hand (and this is really the case), if much study and thought, and labour are necessary, even to be enabled to understand, and much more to practise, architecture, all these builders, and carpenters, and stone-masons, and all other false pretenders, have clearly no right, nor shadow of right, to put foot within the profession, and scorn ought to attend all those who do so impose on themselves and the public. Make your laws straight. To make them so straight that all such impostors and intruders should be expelled forthwith, would be not only to put a premium on the profession, and so induce men of talent and high mind to enter into its ranks; but it would at the same time confer upon them the great benefit of making the way easier, and the probability surer of ultimate success, and prosperity therein. For the only way by which all interlopers could be excluded, would be by compelling all to pass a strict examination before taking the title and office of architect; and the only way by which any would be able to pass so strict an examination, would be by going through a regular system of education, under qualified and licensed professors and teachers, so that there should be no more heart-achings through not knowing which path to take, or way to go; no more failure through misdirected energy; and no more pirates stepping in under false colours to steal away your just rewards. This would be indeed making your laws straight: yet not making them any whit more so than stern necessity is even now calling for, if men would but hear and listen to her.

I really know not anything which seems to bear such promise of ultimate good, not only to the architectural world, but also to the world at large, as this scheme of education; indeed, to those of the profession itself, its merits can, I think, be hardly overrated. It would give in the first place, such a station in society, that the very mention of their profession would be sufficient to insure respect; and not as now, when the title of 'Architect' may belong to a man of talent and education, gifted with the feelings of an artist, and yet is just as likely to appertain to some scheming bricklayer. So that what can you expect but looks of suspicion, instead of that confidence and respect which ought to be inspired? Nor is this respect for which I am arguing, anything vain or trifling; on the contrary, it must needs possess great influence in forming the tone of the profession, and giving to its members a proper self-respect and sense of their true position. Nor will men who find themselves belonging to a class who are looked up to and admired, rashly do anything calculated to forfeit that esteem; but, on the contrary, it will excite and stimulate them to increased effort to uphold and continue the high position of their class. All know, for instance, how powerful a motive amongst the military world the honour of the army has become; and so if architects were placed in that position which they ought to occupy, it would give such new life and vigour to the profession, that I think we cannot even anticipate the fulness of its results.

But the only way by which they can gain this position is by giving the public a guarantee that they deserve it; assuredly a public and thorough examination would give the desired test, and this alone.

Again, viewing it merely for itself, we all know, or ought to know, the great value of 'system.' what would schools, what would colleges, what would life itself be without system? And can architects hope to achieve much without it? A regular systematic education is what one and all require, and is what every one ought to receive, or be altogether excluded from the profession. But now arise the thick crowd of the philanthropic mischief-makers. 'Shame,' they all cry, 'to exclude those who, unfortunately placed in a lower sphere, would be unable to afford the requisite education; and so be debarred from following a pursuit for which, nevertheless, they were gifted by nature.' 'Ah, shame, indeed! good people,' I would reply; 'and could we avoid it this should never be; but yet, supposing it is so in some half-a-dozen cases out of several hundred,—who really undergo the greater hardship, these gifted and excluded half-a-dozen, or the hundreds who now in the profession have the very bread taken out of their mouths by the hosts of the incompetent and fraudulent, whom a good examination would throw overboard altogether? There are two sides to every question, and if you are so eloquent on the subject of your half-a-dozen, why let me also urge the cause of my clients. Could not I talk, if I chose, of the injustice now almost universally obtaining; that the incompetent are on a level with the talented, and the copy-book gleaners with the man of original and good thought? Is there nothing wrong here? Is it quite right for a man to give time, and spend toil and money to acquire his art, and then find himself defrauded of his scanty remuneration by some man who has spent none of these? Is there no injustice here? To multiply cases would be as tedious as it certainly is needless. Charity ever begins, or ought to begin, at home; and so I for one, dear twaddling philanthropist, would sacrifice your half-a-dozen for the good of the rest. Indeed, I should consider myself as conferring a positive benefit on many of the excluded; for there are numbers of would-be architects whose proper station would have been to superintend some cheesemonger's stores, or perchance weigh sugar through a summer's day; or if, indeed, their genius craves higher prey than this, employment may still be found in masons' yards, and the ranks of the bricklayers are not yet quite filled up; and, speaking seriously, I should think the life of a stonemason a far more happy and more profitable thing than that of an understrapper in an architect's office, inking in plans, copying specifications, or practising the deep mysteries of laying down paper.

Make your laws straight. Were they indeed thus straightened, and had architecture headquarters of her own, where she might be studied with facility, in how many things might not profit accrue! For instance, those employed in instruction would have ample time and opportunity thoroughly to investigate the laws and spirit of the different styles, and not rest satisfied with skimming the surface, just merely copying the forms; and so you might hope in time for a living architecture, and see the commencement of that revival for which many are so anxiously looking; or at any rate, even if we suppose that in artistic points an unanimous opinion would never be obtained, it would be perfectly possible to obtain scientific building; nor would this be any slight thing or lightly to be regarded, for, indeed, could you but resolve and gain the knowledge necessary to use every material in its proper manner,—not wood aping stone, nor iron mimicking wood, but simply using the forms most adapted to secure the distinguishing properties of the material employed,—you would indeed have travelled a good way towards the revival of art, and would certainly have arrived at your One of that longed-for period.

Education is indeed necessary. That education can only be secured by proclaiming it the only door by which the profession can be entered; and, therefore, it behoves every one who has the welfare of his profession at heart, to do all he can and to exert all his influence to make in this manner the laws of architecture straight.

To the public, also, the matter is one of no little importance; and we may appeal to them with confidence, as in one part of the question there would be, I think, but few who would give a wrong judgment. For is it wise to intrust men with works, as architects are now intrusted, without some guarantee of their ability? Could the public but see the grievous waste and reckless squandering of both labour and material, by those who are retained in great measure to guard against this very thing, assuredly they would answer in the negative. Similarly would reply, or I am greatly mistaken, all those unfortunates whose houses are one perpetual mortification, and to whom the very name of 'architect' does but call up an army of unpleasant memories. Similarly would reply all the wise and prudent; all those who really understand human nature; all those, in short, whose opinion is worth taking into consideration, and whose decision may be regarded as just. Therefore, once more, make your laws straight; for in this way you may most assuredly do so."

Then she was gone: whereupon I collected my writing materials, and placed upon the top of a sheet of the very best letter-paper the following inscription: "Reasons for the Establishment of an architectural College; with Suggestions as to the Manner in which it should be conducted;" but beginning to think of the latter part first, I soon got into such a chaos of conflicting ideas, that I shut up my writing-case without venturing any further to disfigure the fair surface of the paper; nor since then have I felt inclined to resume my task.

ON THE DECORATIVE PAINTING OF POMPEII.

THE following is Mr. M. D. Wyatt's translation of Signor Abbate's paper mentioned in our last number:—

The idea of representing a Pompeian house in the New Crystal Palace is a far more serious intention than may, perhaps, at first sight be apparent. Whilst the general form and decorations of such a building cannot but excite the curiosity of the uninformed visitor, they must also win the attention of the artist by that more refined sentiment of delight which springs inevitably from the contemplation of objects artistically beautiful; and they will, at the same time, satisfy the inquiries of those more learned students, to whom an opportunity of visiting in classic lands the sublime remains of antiquity, may not yet have presented itself.

If it be true, as I imagine, and as few will be disposed to deny, that meditation upon the past is one of the most powerful agents in the intellectual education of the present generation, then it must be obvious that the actual inspection of a restoration of a Pompeian house cannot but instil into the mind sensations more profound than those which are called into being by the passing wonders of the day, or even by the abstract investigations of archæology. The tendency to constant changes and transformations in the national customs of the various peoples of the earth, and in their employment of all things necessary to sustain life, constitutes in a great degree the peculiar characteristic of the present age, and furnishes an important element in the activity of the English people; at the same time contributing to their prosperity and industrial celebrity.

In the midst of this world of movement and transition, where scarcely anything appears to remain unchanged from day to day, the inquirer will receive, in the study of a restored Pompeian house, a profound sensation of surprise at the very little ultimate changes which those arrangements that minister to the artificial wants of man have undergone, after an interval of nineteen centuries. The people of England, who now take precedence of all others in their study of the comforts of life, will find, in such a vestige of the world, representations of the domestic habits of a civilized and powerful people, and materials for examining the question as to how far the interval which has elapsed since the original building was constructed has been one of advancement or of retrogression.

I have this evening the honour to present to your indulgent attention (with every feeling of respect and deference) the studies which I have made, during many years, of the decorations of the various houses of Pompeii. Having been requested by Messrs. Owen Jones and M. Digby Wyatt to undertake the superintendence of the proposed restoration of a Pompeian house at the New Crystal Palace, it has been my duty to bring with me to this country many of these studies: and I must here gratefully acknowledge the condescension of his Majesty the King of Naples, who has been pleased to accord me permission to contribute to the carrying out of the desirable work in which I have engaged.

I do not intend to dwell longer on general considerations, nor shall I presume to offer to a

body so distinguished for its attainments any historical notices of Pompeii; but I shall rather confine my observations to the express object for which I have had the honour of being invited to this country. I propose, therefore, to give a short description of the general arrangement of the houses of Pompeii, and to present to your notice a few personal observations on the processes employed in their decoration.

It should be borne in mind that the dwellings of Pompeii are by no means adequate to present a complete idea of the magnificence of Imperial Rome, or of the sumptuous habitations of those who were regarded as the conquerors of the world; since Pompeii was no more than a city of the third rank. When, however, we perceive in the dwellings of this small city the admirable distribution of the various apartments,—the purposes to which they were respectively devoted,—the abundant supply of the luxuries and elegancies of life,—the love of order, and the exuberance of art which they display,—we cannot but remain impressed with wonder: and how much would that wonder be increased, should we endeavour to form a notion of the great capitals of the country, and of the residences of consuls and emperors!

In all the domestic buildings of Pompeii there exists a general similarity of arrangement. They have frequently more than one entrance; and the external walls are covered with a hard and brilliant stucco, often coloured with lively tints over a certain portion of the height of the façade. There is little doubt that the greater portion of them had originally two floors, the uppermost of which had small windows, and was terminated with a flat or terrace roof. Internally, the houses are chiefly distinguished from modern dwellings by being divided into portions, in conformity with the manners of the period; such division consisting in a separation of the public from the private portion of the house, and involving, to a certain extent, the separation of the sexes.

At a period when the application of the intellect to commerce and industry was believed to be unworthy of freemen, and when life was essentially public, it was but natural that a portion of every habitation should be accessible to all. When the fair sex had not been raised in the scale of social regard to that position which has been recognised as its due by the great scheme of Christianity,—when women were considered by the laws as wholly dependent on men,—it was but natural that they should be kept in a state of semi-oriental seclusion. Accordingly, in every Pompeian habitation, the apartments of the females were in some manner separated from those of the males; and a luxurious opportunity was afforded for the private and somewhat mysterious display of the attractions of female beauty. It may readily be imagined how fatal to freedom were the consequences of such a system as that which recognised no other love than that based upon material beauty. We should indeed be thankful to the spirit of religion and civilisation, which now sanctions a purer and more ennobling affection. In the present day, the man who retires to his domestic hearth after the fatigues of the day, finds in the society of the female members of his family the most refined sources of domestic enjoyment. Hence, happily, those divisions so common in the houses of the ancients are to us entirely unnecessary.

The arts are but reflections of national customs, and will ever bear the impress and present the clearest evidences of contemporary social life. In obedience to this law in the arrangement of domestic buildings, art, with its wondrous flexibility, adapts itself to the altered system of life, and perhaps in no country of the world more gracefully than in England.

The suite of rooms appropriated to the male portion of a Pompeian establishment had in the midst of it an open hall or atrium. This atrium was of a varying form in different houses; and we learn, on the authority of Vitruvius, that there were at least five varieties of this apartment in common use; namely, the Tuscan, the Tetrastyle, the Corinthian, the Displuviate, and the Testudinate. The Tuscan atrium was distinguished by having its roof inclined towards an opening in the centre of the apartment, through which the water falling on the roof was conveyed, discharging itself into a basin formed in the floor in the centre of the apartment. The opening in the roof was known as the compluvium, and the basin in which the water was collected as the impluvium. The Tetrastyle atrium differed but little from the Tuscan, the principal variation being that the roof was supported by four columns. The Corinthian atrium was by far the most magnificent of all, and surpassed the Tetrastyle, not only by the greater number of its columns, but by having a larger and more capacious impluvium. This style of atrium is only to be met with in the more important houses. The Displuviate atrium had its roof inclined to the exterior of the house, so that there was no impluvium, and the water falling on the roof was conducted at once to the exterior.

To the poorest classes of houses was attached only the Testudinate atrium, which was without inclination, and had no opening or compluvium. The apartments of the females were at the rear of the house, and were decorated with columns of a more rich character than the simple Greek; and with gardens to delight the senses of their fair occupants. The public portion of the house consisted of the vestibule and the atrium, parallel to the tablinum. Between the wings, or aulæ, and the tablinum, were the fauces, or passages leading to the apartments of the women. The private portion of the house opened upon a garden. There gushed the waters of the fountain: there were disposed the beds and couches of repose. The banqueting-hall was provided in the triclinum. In the exedra the studious found materials for the refreshment of the mind, either as a cabinet of study or a gallery of pictures. It may suffice to add that the upper floor served, for the most part, for magazines or warehouses, which were let out by the proprietor of the house, and of which there now remain scarcely any other traces than the marks of the wooden staircases formerly connected with the walls.

I might dwell much further on the disposition and uses of the general habitations of Pompeii, as well as the customs indicated by them, did I not fear to intrude on many of those archæological questions, the difficulties of which are doubtless well known to the society I have the honour to address.

Proceeding to the few observations I have to offer on the paintings which adorn the Pompeian houses, I feel on more secure ground, since I am enabled to speak on the authority of much personal study. The paintings and mosaics of Pompeii, for the greater part, bear some reference or contain some allusion to the destination of the different apartments in which they are introduced; and thus we turn at every step from subjects grave or gay, to others fantastic, or even licentious. Although it would be hard to deny the title of an original style to the decorations prevalent at Pompeii, it yet bears frequent indications of its Grecian derivation. The artistic merit of these decorations speaks for itself. I cannot, however, refrain from pointing out the evidence borne by the profusion of paintings and mosaics in the remains of this third-rate town, to the great popularity of the fine arts at the period of the Christian era. In considering these paintings and mosaics (not to mention other monuments of art) we cannot refrain from rendering a tribute to the elegance and grace with which they have been executed, and from expressing our astonishment at the innumerable quantity of artists whose labours must have been required for the production of so vast a number of works. Such undertakings could never have been carried without an unlimited devotion to art, the fruit of which may be recognized in the emulation excited by it leading on to perfection; and that very perfection, once attained, acted as a powerful stimulant in keeping alive in the spirit of the people the love of art which had originally ingendered it. Thus cause and effect co-existed, and quantity and quality were alike maintained.

After many careful investigations, I have arrived at the conclusion that the Pompeian paintings were executed in fresco-secco; but, at the same time, there was mixed with the colours some resin, or other material capable of giving them tenacity, and rendering the impasto of the tints glutinous. The plaster upon which the painting was executed consisted of seven coats, exactly as Vitruvius has described them: the first three were of sand, the other four of marble dust, reduced from a fine to a finer texture as each coat was laid on, so that the last coat consisted of the very finest powder. These several coatings were laid one upon another, without allowing any one to dry: the painter then commenced by tracing with the style the principal lines for the ground tints: he then indicated with the same style the figures and arabesques, and then proceeded to paint in. It will be easily understood that where the painter commenced he found the wall moist, and hence his colours would unite themselves chemically with the lime of the intonaco or plaster, into the pores of which they would readily insinuate themselves. As, however, he proceeded in his work, the wall would continue drying, and hence the amalgamation of the colours with the surface would be less complete. Thus, in the present day, we may easily and clearly discern that certain parts of the wall paintings of Pompeii have altogether detached themselves from the plaster, whilst in other parts the adhesion has been complete and perfect, although the colours may have been applied in the thinnest possible state. Those portions of the wall which have lost their colours furnish a strong argument in support of these conclusions, since the scratch of the style which served to indicate the grounds, and give the main outlines of the arabesques and figures, was evidently made upon the wall whilst it was yet wet, and whilst the plaster was consequently in a soft condition. Wherever the colour has flaked off, the strokes of the style appear clean, precise, and most exact.

If, as has been alleged, the paintings of the ancients had been made on a dry wall, it is certain that the strokes of the style could never have left a clean line, but would rather have shown a jagged or broken one, unequal in the depth of the various parts of the incision: this must necessarily have been the case with plaster presenting so hard a surface as that composed of marble dust. I am supported in this opinion by observing that where the painter has desired to produce an extraordinary effect, he has cut out the plaster and inserted a new piece in the middle of the wall, and upon that has executed his picture. Had it been the custom of that period to paint on dry walls, there would have been no reason for such a renovation, nor should we have been enabled to account for so curious a process.

The art, then, of fresco painting, as it is understood and practised by us, was known to the ancients, since they, not less frequently than ourselves, painted on moist walls. The only difference between our method and theirs consists in this;—that the moderns add the plaster piece by piece, as the picture is executed, so as to preserve the coating constantly moist and fresh; whilst the ancients applied the plaster over the entire surface, and immediately commenced painting,—the moisture necessarily diminishing as the painting proceeded. The modern method presents great material difficulties in the execution of the colouring, but when the painter possesses sufficient facilities and experience to overcome these difficulties, the effect is certain; and that such difficulties are by no means insuperable is proved by the fact that we see them daily overcome by painters of no extraordinary ability. The practical difficulty of the Pompeian method was by no means so great, inasmuch as their sketchy mode of execution enabled them to carry on the work with a rapidity which could only have been practised with a limited palette, embracing a very small number of tints. The durability of the Pompeian method can by no means be regarded as equal to that of the modern system, since, as I have already stated, the last touches of the painter adhered much less firmly to the wall than the earlier ones.

There yet remains one observation to make of no slight importance in the history of art, as affecting the errors into which those may be led who examine the system of colouring of Pompeii superficially. Those walls which on the first exhumation of a building present the brilliant red produced by the employment of cinnabar, quickly darken in colour until they at length

become perfectly black: from that tint, after a few months, they sink into a dead yellow, and ultimately, fading away little by little, they are lost entirely in a low dirty white. An observation of such phenomena leads naturally to some inquiry into the means adopted in the first instance to protect the fugitive colours. The question therefore arises as to how far any of the processes of encaustic painting have been employed? It is very certain that however efficiently and rapidly the pigments may have been applied, portions have become detached, which, on submission to the test of chemical analysis, have been generally found to exhibit traces of wax. This, however, by no means resolves the problem, since we are naturally led to inquire whether the wax was applied with the colouring matter, or whether the colours were not, as I have described, applied upon a moist wall, and then, when thoroughly dried, covered over with a coating of varnish. Much difference of opinion has existed upon this point, but my belief certainly is, that the wax was a posterior application. In this view I am supported by the authority of Pliny the younger, who, in one of his letters, relates that a landed proprietor of Stabia, in order to preserve the colours of the exterior of his house, entered into a contract to have his walls covered with a coating of wax four times a year. My position is further sustained by the fact that although colours in various states of preparation have been found in Pompeii, in none has any mixture of wax been discovered. It is scarcely possible to imagine the application of such an unguent without its having been partially absorbed by the wall to which it was applied, and of this throughout Pompeii there is no indication. I am further absolutely assured on the subject by a consideration of an artistic nature; and that is, that any admixture of wax with the pigments would have effectually rendered impossible the execution of those delicate and facile lines and touches so constantly recurring in the Pompeian decorations. For these several reasons I feel convinced that a coating of wax was applied to the paintings after their completion, in order to effect the following objects,—to preserve them from the action of the atmosphere, to add to their brilliancy, and to insure their tenacity to the wall by amalgamation with the resinous substance to which I have already referred, and the nature of which has not been yet discovered.

It has been found that some pictures into which cinnabar enters have exhibited scarcely any alteration after they have been cut from the walls of the houses and brought to the Museum in Naples. This, however, by no means proves that wax was mixed with the colour; for, if that had been the case, the means adopted in the Royal Museum for the preservation of such fragments would have been altogether unnecessary. Neither does the decay of certain of the pictures in anywise disprove the posterior application of the wax, since, if the proprietor to whom Pliny has made allusion required to give four coats of wax a year to his house, how can it be expected that paintings discovered after an interval of twenty centuries, exposed to the action of the atmosphere for many months, and covered originally, in all probability, with one coating of wax only, should preserve their freshness? To sum up my conclusions with regard to these paintings, it is my belief that they were executed on a freshly plastered wall,—that resin, or some such substance, alone was mingled with the colour, and that wax was applied to them after their completion.

I cannot but feel, gentlemen, that the true scope and mission of the fine arts has rarely had a finer field for its development than it now possesses in the New Crystal Palace. It is to be hoped that the fine arts may be there employed to furnish to the great mass of the people materials for the refinement of the intellect, and all that can elevate the nature of public diversion. Many centuries have passed away since so noble an idea has been conceived among the nations of the earth. I feel, gentlemen, the responsibility which has devolved upon me, in contributing to carry out these plans; and I feel, moreover, proud of the fact, that any humble talent of mine should have been enlisted in such a cause, and that by means of that circumstance I have the opportunity of presenting myself among the artists of this distinguished nation, to whom I respectfully offer my humble tribute of profound consideration and regard.

Mr. Wyatt added the following remarks:—As Signor Abbate has for many years traced the paintings of Pompeii, so I have endeavoured this evening to trace his own remarks, and I may perhaps add a few observations in connexion with the subjects of his drawings, which his fear to exhaust your attention have, no doubt, restrained him from offering himself. The decorations of Pompeii, as you are aware, are of two kinds—*formative* and *pictorial*. The formative decorations were effected by means of stucco, which, of course, was entirely hand-worked, and probably almost without any drawings, the plasterer sketching, in fact, with his style, or other tool, and working out the design as he went on. In some cases, however, moulds were pressed upon the plaster to give the desired form to the mouldings, as we find proved by certain joints in which the moulds have overlapped. A curious instance of economy of labour in modelling occurs in the ceiling of the Tepidarium at Pompeii, where the highly salient portions of some of the figures alone have been modelled, and all the forms presumed to be in very low relief are indicated by colour alone. It is singular to remark of this ceiling, how essentially Roman is every feature of the design. The colours employed in the paintings of Pompeii have been subjected to chemical analysis for many years past,—originally by the great French chemist, Chaptal, and since then by Davy, by Faraday, and many other savans, down to M. Chevreul; and they have been found to be as nearly as possible identical with those used on the monuments of Greece and Sicily. In the investigations of the most eminent chemists, traces of organic matter have been found in all the colours of Pompeii and Sicily; and that matter is apparently the glue or resinous substance on which Signor Abbate is unable to enlighten you. The Greeks call that "vehicle" "sarcocolla," and it appears, from the evidence of Sir Humphrey Davy and others, that it was little else than size. That such a material was used is evident, because although the lime would cause the lighter tints to adhere, it would be impossible to use sufficient lime in the parts intended to be of darker tints, to cause them to adhere, without lowering considerably the depth and beauty of the colouring. It is a curious circumstance, that in the Egyptian colours a resinous composition has been found which is in the nature of a varnish. In the colours of Greece we find wax, but no trace of lime; whereas in those of Sicily and Pompeii lime is, in all cases, found with the organic matter; and in those of Etruria without it. A similar absence of organic matter, and traces of the presence of lime, have been observed in analysis of the Gallo-Roman remains which have been found in France.

Signor Abbate has referred to the changes which take place in the cinnabar colouring of the walls of Pompeii. Cinnabar (the "Minium" of the ancients) was a bright vermillion, produced from mercury; and it may be supposed that the atmosphere of Pompeii was deleterious to this colour, because being charged with sulphur it would decompose it in the way Signor Abbate has described.

The Romans divided their colours into the "austere" and the "florid." The early Greek artists had but four colours—white, red, black, and yellow—which were entirely composed of earths found in the neighbourhood of Athens. Subsequently, "cœruleum," or blue, was discovered and used as a frit or smalt, consisting of carbonate of soda, with a little copper and some lime. The austere colours were in most common use, including the red which came from Sinope in Pontus. The Greeks appear to have brought these colours into fashion in Italy, because, in our analysis of the Etruscan colours, we find that such as were used in Italy previous to the advent of Greek artists, were made from earths existing in the neighbourhood of the painted monuments; whereas those of Rome and Pompeii were brought from a great distance—from the Greek colonies, from Egypt, and other places. The principal colours used in Pompeii were red, usually the earth from Sinope; blue, or cerulean, which is the Egyptian frit, analysed by Sir Humphrey Davy; yellow ochre; and white. For the latter, the ancients frequently used a white earth, or rather a sort of china-clay, but in Pompeii it is found to consist entirely of lime.

With regard to the position which Pompeii and its decorations should occupy in the history of art, I may observe that we are too much inclined to speak of "the Pompeian style" as though the remains of Pompeii presented one style only; whereas it is difficult to imagine any more concrete phrase of style than that of Pompeii. Originally a Greek colony, the town afterwards became amalgamated with its Samnite and Etruscan conquerors. It ultimately degenerated into a mixed race known as Campanian, and became subject to Rome; thus, in its various vicissitudes, obtaining some modification from each existing school of art. Altogether we have a most charming mixture of styles, and any person going carefully through the existing remains cannot but trace many forms which cannot be accounted for, unless they may have been derived from these mixed sources. In some paintings we find green and purple used with curious white lines, more Etruscan in character than anything else: there is a good deal of Greek work about the tombs, and in the earlier portion of the buildings the Greek style of decoration was most prevalent, according with the monuments which M. Hittorff has illustrated in Sicily. The decorations in such cases are divided into compartments of flat tints, with central pictures, frequently surrounded by frets and ornaments of the kind, apparently derived from mosaic work. Subsequently the fashion changed with what was going on in Rome. In the time of Augustus, Pliny relates that Ludius, a celebrated painter, introduced a system of arabesque decoration; and in the most fashionable houses of Pompeii that style appears to have been carried to very great perfection. Upon this there supervened a more fantastic style, in which there is a quantity of architectural work indicated in thin lines, in a most peculiar manner. The Cavalier Canina has attempted to demonstrate, from this style of decoration, that these lines were derived actually from existing models, and that the upper apartments and terraces of Pompeii, some of which were doubtless constructed of wood, and gaudily painted, were the models upon which this style was founded. Hence he has endeavoured to demonstrate that every nation possessed, in addition to its severer style, an "*architettina svelta*," a thin style. This position is one which I think scarcely tenable; because these designs appear to be rather the fantastical conjectures of a person whose mind was filled with concetti than serious productions of any kind.

Generally the colours at Pompeii are arranged in horizontal zones, the lowest being the darkest, the second intermediate in depth, and the uppermost the lightest of all. Perhaps the most striking characteristic of these works is the extraordinary exuberance of invention which they display. Hardly one moulding or ornament is like another, and even the two sides of the same ornament are seldom alike. This is an interesting circumstance, as proving that the artists did not trace their drawings on the wall, but drew them freely as their fancy dictated. This is farther illustrated by one painting, engraved by Mazois, which represents an artist taking the portrait of a gentleman, which he is doing with outstretched arm and a free hand, and seated at a distance from the picture; whereas one of our own portrait painters would be using the maulstick, and resting his hand almost close to his canvas.

Purity of form and outline are the first consideration in a monochrome picture; but when we examine the Pompeian paintings, we find there is really no outline at all, or, at all events, it is of the slightest possible description; yet the same grace of line and form which characterized the best works of the Greek artists is universally perceived. This could never have been the case but for a long course of the severe study of form handed down by tradition from generation to generation.

I trust, gentlemen, and hope that you will feel that the directors of the Crystal Palace Company, in bringing Signor Abbate to this country, and in allowing him to bring under your notice all these very beautiful drawings,

have been endeavouring to render the State some service; and if Signor Abbate should be enabled to carry his decorations out in the way which I am sure he wishes to do, the Pompeian Court of the New Crystal Palace will furnish a very interesting model for study hereafter.

"STEAM SUPERSEDED:"

ANOTHER NEW MOTIVE POWER, AND ANOTHER.

We have occasionally, during the last six or seven years, remarked, that if air or gas of any kind is to be made useful as a motive power, —"fixed air"—a sort of bottled Boreas, as in carbonate of lime or carbonate of soda, promises well as one of the likeliest, considering that by means of acids, and with little or no expense for heat, it may readily be liberated to any extent, so as to yield an immense pressure and power when confined and condensed; and may, after use, be even refixed by means of quicklime, &c. for reiterated use, while the product yielded by the acids would be more valuable than the carbonate originally exhausted. Some attempt was made two or three years since to realise such a power, but with what success we have not heard. It had been suggested by us first of all as preferable to the Baron de Bode's bottled air or atmospheric air under pressure in iron bottles for locomotive purposes in place of coke and steam. Our American brethren, we observe, have got hold of it, and are, as usual, boasting of it as "a new power"—the "crowning work of motive power"—and "destined soon to surpass the highest anticipated performances of Ericsson's caloric-engine as much as Captain Ericsson believes his power capable of eclipsing all previous efforts." It is called "Salomon's carbonic-acid-gas engine," Salomon being, of course, an American, and hence the *original* inventor. A company has even been established at New York to carry it out. There is, we need hardly say, nothing quite new, far less peculiarly American, in the idea, whatever there may be in the engine. Chalk, and dilute sulphuric acid are the agents, as before. At ordinary temperature and pressure, carbonic acid insists on the gaseous state; but when subjected to a pressure of 36 atmospheres, or 540 lbs. to the square inch, at a temperature of 40 deg. Fahrenheit, it has a pressure of 1,080 lbs. to the square inch. Its expansibility by heat, therefore, will create a motive-power of unlimited capacity. Mr. H. W. Adams, a practical chemist, made such experiments in 1850 with this gas, in its generation, its reduction to a liquid by a pressure, and also to a solid, that he feels justified in reporting on the value of the invention, and in testifying to its immense power as a mechanical agent.

In the new engine, it is said, "the gas is forced from the generator under a pressure of 540 lbs. to the square inch, into a reservoir of small copper tubes, all united so as to form but one conducting main for the liquid, and so bent that a considerable length of this tubing is placed in an air-tight box, whose temperature is kept at 32° by an exhaust pump, worked by the engine. Upon entering this copper tubing from the generator, the gas is reduced to a liquid, and the condenser is thus charged. The pressure upon this copper tubing is now, it is said, 540 lbs. to the square inch. A force-pump, worked also by the engine, is connected to one end of the copper tube, and at every stroke forces a given amount of carbonic acid gas into a gas-holder, or substitute for a steam-boiler, whose temperature is kept at 45°. When the liquid enters this reservoir, it is at once expanded into gas, and exerts a pressure estimated at 1,080 lbs. to the square inch. Under this pressure a valve opens its communication with the piston, which is worked by the gas; then an escape-valve opens in communication with the other end of the copper tubing, or condenser, while, at the same moment, the first-named egress valve closes, and another opens at the other end of the piston. The result is, that the piston is forced back into the cylinder under a pressure of 1,080 lbs. to the square inch, while the gas at the other end of the piston is forced out into the copper tubing and condensed to a liquid by an instantaneous reduction of temperature to 30°, and under a pressure of 540 lbs. to the square inch. Thus a perpetual circuit of power is kept up."

The new power is said to be comparatively inexpensive; and, among other advantages, it is declared that it will probably not cost five dollars to run a vessel from the United States to Europe!

The renown of yet another new motive power comes resounding across the broad Atlantic. In this case, air-exhaustion is to "eclipse all competitors." The principle consists simply in the combustion of lamps, such as spirit lamps, in a confined space, and the partial exhaustion of the air thus produced, which, notwithstanding the production of carbonic vapours in its place, is declared to have a partial vacuum capable of rendering furnaces, boilers, air-pumps, and condensers, all useless in working marine or other engines. That a partial vacuum may thus be produced there is no doubt. The only novelty here is the idea and the calculation or the proof that such a vacuum can be readily made a practical and efficient substitute for steam and its adjuncts. An engine has been invented on this principle, it appears, by Mr. J. E. Serrell, of New York, C.E.; and the American commercial world are said to be greatly excited by the prospect which it gives of "steam superseded."

SEWAGE AND WATER.

Inseparably connected, these two vital requirements press upon the whole population. The existing evils of both strike forcibly upon the senses: the one, polluting the air we breathe, offends the nostrils; the other, commingling with every morsel we swallow, saps the health and prepares the living system for the access of most fatal contagion.

To amend the system of drainage, powers were conferred on the Board of Health to stop up cesspools and to constrain householders to make direct communication between every dwelling and the main sewer. So far as concerned many localities, such as courts, alleys, and lanes, teeming with poor inhabitants, the requirements of these provisions were partially carried out, simply because the dread disorder which, from the predisposing causes of vitiated potable water, was only endemic, became contagious as the victims multiplied; but thousands of the better class of houses—even many of those in the choicest parts of Kensington and Brompton, such as the Gore and Brompton-grove—still retain the abomination, and harbour, concealed under deceitfully shrubbed and floral gardens, all the germs of pestilence and death.

Surely the benefits of sanitary enactments ought to be impartially and rigidly enforced, and every house proprietor should, under a *heavy penalty*, be compelled to comply with those regulations which are so essential to the health of the whole metropolis.

Years have been consumed in the war of opinion, as to the mode of expurgating the river and the sewers,—how it should be done, and who was to effect it,—and as yet no conclusion has been arrived at, nor other decision, save that the Commissioners of Sewers have been disqualified; that the projectors of sumpts, of tunnels, of pumping-engines, and of deodorising schemes have either died off in the contest, or been tired out by sheer vexation in the desultory civil war of opinion. All men feel the scourge, all agree that London is badly supplied with the *worst of water*, and that in every recurring summer the public health is perilled through scandalously defective sewage; and still consultation and planning—*inoperative planning*—go on, whilst the enemy approaches our gates!

The suburbs extend in a ratio commensurate with the growing wealth and commerce of Great Britain; the centre hive of industry becomes more compacted; the subjects of life and death multiply; the river reeks more pestiferously; the sewers become more and more inflated with lethiferous *malaria*; and yet we inquire, "What is the news?" "Which is the last scheme?"—vacillating and inoperative, until grim pestilence, which travels with the summer's sun, draws his lines of circumvallation around our defenceless abodes!

It is idle to trust in supplies of water drawn from a vitiated source (and the Thames is polluted and wholly unfit for human supply, up at least to Henley): it is worse than visionary to rely upon the present system of sewers for the voidance of *exuviæ* proceeding from two millions of beings. As often before recommended in the *Builder*, nothing short of a great arterial sewer or tunnel down on the north side to the Essex marches, and on the south side down to Plumstead, can effect any permanent good for the great city.

In this age of engineering excellence, it would be absurd to imagine any insuperable difficulty in overcoming the want of natural fall, or declination, through the medium of machinery.

A pamphlet just issued on the subject of sewage, as published by Mr. Richard Dover, the patentee of a new mode of disinfection and desiccation, asserts, in very forcible language, that the value of the material now lost would far exceed the cost of practication involved in all the works; that it might bring into cultivation millions of acres, *now waste*; that it might save millions per annum now expended on Peruvian and *other guanos*; that it would sustain a vastly increased population, for whose benefit it would cheapen the staff of life, for which we are now dependent upon foreign cultivation; and that it would constitute this kingdom a self-supporting and lightly-taxed community.

Holland supports a dense population, and is an exporting country, because *there* no loss of *exuviæ* is suffered, but all the waste of domesticity is applied to reproductive agriculture: this is in that country done in detail, and in a manner which perhaps only old habitudes would sanction. China, too, from the same causes is enabled to victual a population yet more dense. England, by an improved cultivation, might also, as has been proved by the use of guanos, produce abundant supplies for all her domiciled subjects; not that "every rood of ground need maintain its man" (for that would be a *rude* state of society), nor that every acre, as Mr. Dover argues, ought to do so; for there are in Great Britain somewhere about 60,000,000 of cultivable acres, whereas there are not quite 25,000,000 of inhabitants; but the improved tillage and enrichment of even the existing cereal lands, without the breaking up of pastures, or even the appropriation of the *prodigally wasted crown lands*, would suffice to support and invigorate every son and daughter of the soil.

As to the rival tunnels or sewers, or as to the *rival* and competing companies which are now contending for parliamentary privileges in order to carry out the grand principles of drainage; the greatest care should be taken by the Legislature, first to assure that it be well done, and efficiently; secondly, that due restraints be imposed on any public or private companies, and that a controlling power be reserved and *delegated to proper and competent parties*; so that tyrannous or heavy taxation be not imposed upon the citizens: the irresponsible powers conferred upon *water companies* ought to be a sufficient warning to committees of the House of Commons; and the revelations which have been made as to the jobbing, juggling, and other malversations of public companies should in this instance, upon which the commonweal and the public health so mainly depend, act as a caution against precipitate enactments or charters.

In legalising a company these points are of paramount importance. Great names have been and are constantly involved in great delinquencies: where enormous gains are at stake, enormous and incredible peculations are practised. This is advanced advisedly and with due consideration, for the writer has proofs in hand.

Whatever plans may be finally adopted, there must be a revision and correction of both systems. Statesmen, already overburdened with official, political, and senatorial functions, cannot discharge the duties of active commissioners. Men of skill, men of science, and men of *honesty*, must be employed. There is no lack of these qualities; but to find them in conjunction with Parliamentary influence—there's the rub!

On the other hand, governmental boards are not popularly esteemed as the most efficient; but private enterprise, as embodied in public companies, *always subjected to the control of the executive*, with annual accountability and under perpetual surveillance, would be the

right medium for the discharge of great duties, which, in the days of ancient Roman dominion, were directed by state functionaries, called ediles.

The subject is not agreeable; but the question is one of resistless and stupendous importance, *and it must be dealt with*. The expense will no doubt be enormous, as the works must be extensive; but as regarding the prime element of life and the most exigent necessity, London cannot be in the rear when minor and more modern cities advance with the age.

QUONDAM.

THE LABOUR QUESTION, STRIKES, &c.

THE London masons have for some weeks past been organising a movement to procure the abolition of systematic overtime—the principal object sought to be obtained by the Amalgamated Engineers in their late disastrous strike. The London members of the masons' union, according to the *Observer*, have been polled on the point, and only fifteen votes were recorded against it. The men profess not to contemplate a strike; but should their demand (payment of overtime as time and a half) be resisted by the masters, the men must either abandon their position, or a strike must necessarily follow.——The carpenters of Reading demand an increase of 3s. a week in their wages: it is believed the masters will avoid the inconvenience of a strike by assenting; some of them admitting the justness of the claim.——The Oxford carpenters and joiners have been holding meetings as to the best means of improving their condition with reference to an increase of wages.——The Leicester bricklayers threaten a strike for an advance of 6d. a day, in consequence of the demand for hands at Derby, Nottingham, and Birmingham. The masters have consented to offer 3d. The journeymen carpenters are also taking steps to procure an advance, but their chance of an increase is not thought so favourable as that of the bricklayers.——The Sunderland masons have determined to strike, unless their wages are raised from 24s. to 27s. a week, "as ship-building can afford to pay 27s. a week," and in consequence of the general demand for their skill and labour, the great advance in price of provisions, &c.——The Liverpool strikes still continue. The carters have struck for an advance from 18s. and 22s. to 24s. a week. The bricklayers have sent a circular to their employers, demanding a like additional sum, and a strike was to follow on a refusal. Owing to the great extent of building, however, in the borough, they are confident of success.——The strikes at Bristol, too, continue; but in several instances the demands of the men have been complied with. A number of men engaged at Mr. Cooksley's large nail factory have struck. It is stated that the labourers in different departments of trade are about to form a union.——The Penzance carpenters and cabinet-makers demand an increase of 6d. a day, or from about 18s. a week to 21s. One of them, however, says, in the *Cornish Telegraph*, "it is not their intention to coerce their employers at present to obedience," but that he "cannot guarantee the course of conduct they may pursue should their more pacific proceedings be treated with indifference."——The dockyard sawyers at Portsmouth have struck against the system technically called checking, which, they say, reduces their wages below a fair point. They appeal to the Admiral Superintendent; but have since been checked again.——The very boys are formally "striking" for advance of wages:—On Wednesday in last week, a number of lads employed at the Victoria Engine-works, Kirkdale, struck for an advance from 3s. 6d. or 4s. to 5s. a week. Their places were speedily supplied by others, whereupon they assembled in strong numbers to assert their demands by force. They threw stones into the boiler-shed, but, on the appearance of the foreman with a stick, the juvenile turn-outs decamped, breathing vengeance against the young hands who had supplanted them. With the exception of a suspicious case at Glasgow, we are glad to say that these boys are the only "men" who are reported to have used either threats or violence. In the instance at Glasgow, which is only one of suspicion, and is too shocking, we should hope, to be true, a painter, named Morrison, is supposed to have been murdered by individuals of the same trade, who are on strike, and in whose shop Morrison had agreed to commence work. The man was found pressed to death, it was believed, behind a door.——In our notices of the general movement here given, though we have mainly confined ourselves to our own departments of business, these constitute but a small portion of the present movement, which, as we have before said, is one of a remarkably general and extensive description. Amongst others, the movement among the railway operatives, and others connected with railways, is also extending from one line to another, and has now pervaded most of the more important lines.——We may here note, in connection with the labour question in general, that, by a Bill in the House of Commons, it is proposed to amend the law on the subject of combination of workmen, to the effect that alterations may be effected in the wages or hours of labour, without being considered as "molestation" or obstruction, within the Act 6 Geo. IV. c. 129. Mr. H. Drummond and Mr. T. S. Duncombe are the supporters of the Bill, which was issued on Saturday week.——We may also here add that according to the *New York Journal of Commerce*, at New York, men cannot be had in sufficient numbers to perform the labour demanded at the shipyards, in which there are now many vessels, of every variety, in progress. Eighteen shillings a day are paid, but with this there is evident dissatisfaction, twenty shillings being asked. It is apprehended that the request will soon assume the shape of a demand.

THE INDUSTRIAL ARTS OF THE 19TH CENTURY ILLUSTRATED.

WE have already offered our unqualified testimony to the value and excellence of Mr. Digby Wyatt's large work illustrative of the choicest specimens produced by every nation at the Great Exhibition.* It is the most important application of Chromo-Lithography to the illustration of the industrial arts that has yet been made in this country, and has required the attention of many persons, and the expenditure of a very large sum of money. It is farther remarkable for the rapidity with which it has been produced, as will be evident when we say that it consists of 160 large plates and 350 pages of letter-press, and was not projected till after the 1st of May, 1851, when twenty draughtsmen were set to work, including Mr. Sliegh, Mr. Smallfield, Mr. Clayton, Mr. Pozzi, Mr. Delamotte, Mr. Michael, Mr. Butler, Mr. Thomas, Mr. Maye, Mr. Rafter, Mr. Hayes, Mr. Pidgeon, Mr. Dalziel, Mr. Aglio, Mr. Humphreys, Mr. Vinter, and Mr. Millais.

Mr. D. Wyatt, in his postscript, gives some particulars, showing the labour involved in transferring the original drawings to the stone, which may be new to some of our readers. The drawing must first be carefully traced. It is then transferred to the stone, by interposing between the surface of the latter and the drawing a sheet of thin paper, prepared on the side next the stone with red chalk, when the lithographer draws upon the stone with a greasy chalk, or ink, as the case may be, the whole of the outline of the subject, and as much of the shading as he may think necessary. On the conclusion of this drawing in black and white, the stone is sent to the printer, who, after chemically preparing it for the operation, takes off carefully as many impressions as there are colours required to perfect the polychromy of the original drawing. These impressions on thin paper are laid, whilst yet moist, upon a corresponding number of supplementary or colour stones, and passed through the lithographic press. By this means the outline of the first or key-stone is printed off upon each of the remaining stones of the series, and the artist is provided with an outline upon the latter, identical with that which existed upon the key-stone. Carefully analysing the amount of each colour in the original drawing, and noting the points of its predominance,—where, in some cases, it is allowed to appear pure, and in others to enter only into the composition of broken tints,—the artist proceeds to indicate upon each stone, in black chalk or ink, the requisite amount for each separate colour. There must be great care exercised as to the succession of these tints, and great attention in order that, when the various stones are worked together, the filling in of one colour shall exactly meet the space occupied by another. The chief lithographer was Mr. Francis Bedford, to whom great credit is due.

"The greatest number of printings for any one subject has been fourteen, and the average number seven. The edition printed has amounted to 1,360 copies. Hence, to keep pace with the demand (each colour requiring a separate impression), the printer has had to pull the work through the press no fewer than 18,000 times, on an average, per week, amounting in the whole period to 1,350,500 pulls, after every one of which the stone requires to be carefully cleaned, and the paper readjusted for 'register.' It may be readily believed that the 'plant' locked up in such a work as the present is very extensive, since it has required 1,069 stones, weighing in all about twenty-five tons. The weight of paper consumed in the lithographic department has not been less than 17,400 lbs."

We did not intend giving any extracts from the work itself, but a passage meets us so strikingly illustrative of the value to a country of attention to artistic design, that we quote it. The author is speaking of goldsmiths' work and jewellery, and says,—

"The importance to Paris of these branches of manufacture, in a commercial and industrial point of view, may be estimated from the statement, that in 1847 works to the value of 134,830,276 francs were executed, giving employment to 16,819 workmen, and 2,392 masters. Of these, real jewellery occupied 4,401; imitative, 2,182. Amongst the 16,819 were 4,101 females, the highest wages of whom were 6 francs per day, and the lowest 75 cents: the highest wages of the men amounted to 15 francs, and the lowest to 1 franc per day. 752 men receive less than 3 francs per day; 8,769 receive from 3 to 5 francs; 1,204 receive more than 5 francs. Of the females 3,469 gain from 75 cents to 3 francs; 81 gain more than 3 francs. The respectability of these classes is satisfactory. Of the men who can read and write there are 96 per cent.; of women 86 per cent. The children, previous to their apprenticeship, are sent t the commercial schools, where they at least begin linear drawing. Many improve themselves by attending in the evening drawing and mathematical classes; and thus it is that taste has been daily more and more developed in the Parisian manufacture."

To provide in rapid succession literary notices to accompany every plate entailed no trifling amount of study and research, and the author expresses his gratitude to four gentlemen who have laid him under more especial obligations in this respect:—

"To Mr. T. Everall Jones he is indebted for constant attention and sympathy. By availing himself of his talent as a shorthand-writer, the author has alone been enabled to accomplish his task, the majority of the articles having been written from dictation; while to his acquirements as a student, and to his literary abilities, the work is indebted for no less than thirty-seven articles; among which may be especially mentioned the valuable series on the Commerce of India; on the Trade of Sheffield and Birmingham; and on English Porcelain, Earthenware, and Carpets. From his friend and pupil, Mr. W. Burges, the author has derived fourteen articles, among the more important of which may be pointed out those on English furniture, on Stained Glass, and part of the series on Enamels, and Damascening. Mr. C. Fowler, in addition to assisting the author with occasional extracts from German works, has contributed three valuable articles, respectively on Encaustic Tiles, on German Stoves, and on Terra Cotta. Mr. T. Hayes has furnished two articles, one on Paperhanging, and one on Florentine Mosaics. For the remainder of the work, rather more than one hundred notices, the author is alone and entirely responsible."

The work is creditable in the highest degree to all the parties concerned in it, including, of course, the Messrs. Day, in whose establishment it has been produced, and deserves, what we sincerely hope it will obtain, a large sale both at home and abroad. It is in such a case as this, where the cost and risk are so great that the enforced requirement of copies for so-called public libraries is severely felt. The public, instead of giving aid, impose a tax.

* The Industrial Arts of the 19th Century: a Series of Illustrations of the Choicest Specimens produced by every Nation at the Great Exhibition of Works of Industry, 1851. By Mr. Digby Wyatt, Architect. Day and Son, Gate-street, Lincoln's-inn-fields. 1853.

DISASTER IN NEW CANNON-STREET, CITY.

AN accident has occurred at Messrs. Sampson and Co.'s, furriers, in the neighbourhood of New Cannon-street. The facts of the case are as nearly as possible as follow :—It being proposed to raise the roof another story without displacing the materials, it was lifted, by the agency of jacks and cranes. Mr. Dymock, the foreman to Mr. Brown, was going to inspect the work, and while in the street he observed a brick to fall, and afterwards a piece of wood; and thinking all was not right, he rushed up-stairs just in time to hear the crash. There were thirty men buried in the rubbish: one had his right arm smashed, which has since been amputated; and Messrs. Sampson's head man is so much injured that, if not already dead, there is not the slightest hope of his recovery. Mr. Brown has but just successfully finished the raising of the roof at Sir William Poland's in a similar way. The accident, it is alleged, was caused by the snapping of one of the jacks.

A. B. C.

ROME.

THE Eternal City has been full of visitors, including as many as 35,000 foreigners. Our correspondent informs us of the discovery of tombs near the Via Appia, that fruitful mine of antiquarian interest, containing the ashes of the freedmen of Nero, Pompey, and Cæsar. Dr. E. Braun has nearly completed a guide to the monumental relics of Rome. The gasworks now being erected for the illumination of Rome, under the direction of our energetic countryman, Mr. James Shepherd, engineer, are rapidly progressing. The *Giornale di Roma* congratulates the inhabitants on the advantages which will follow their completion.

THE DRAINAGE OF LONDON AND COMMISSIONERS OF SEWERS.

HAVING reference to your remarks on the 26th ult. and to the amending paragraph on the 2nd inst. on "The Position of the Great London Drainage Question," in connection with my name, and with the course of proceeding which I had adopted in relation to the scheme of arterial drainage before the Metropolitan Commission of Sewers, I beg to observe that I have never, by any expression I may have used, intended to imply that the *commission* has practised a delusion on the public in respect of that scheme. That a delusion has existed, and probably still exists, in the public mind, to the effect that the commissioners inherited settled plans of deep drainage for the whole metropolitan area, is, I believe, certain;—but the circumstance that the commissioners did not, as a body, concur with me in the propriety of entering into an investigation, with a view to its revision, of a scheme which they had no present means of carrying out, would not justify me in any assertion that would lead to the inference which has been drawn, and I repeat that I have never intended to produce any such impression as that the commissioners, or any of them, desired to trifle with, or to delude, the public in the matter.

It is true that Mr. F. Forster's scheme remains in the state in which he left it a year ago; but it may be claimed for the present commission, that, although no plan has been advanced, and none prepared by it, or under its direction, for the thorough drainage of London, with a view to the relief of the Thames from the impurities of the town, the commissioners have been actively—indeed, incessantly—engaged in applying the available funds to the execution of works which are essential to the public service, whatever scheme of general relief may be hereafter provided.

I may, with the less impropriety, speak of the labours and services of the present commission, because I am myself but temporarily a member of it, and because the duties of my own proper office have not left me at liberty to apply much time in aid.

WILLIAM HOSKING.

THE OLD EXCISE OFFICE.—Our readers will see by our advertising columns that the Excise-office in Broad-street is to be sold by tender, under the management of Mr. William Herbert. The property is on the site of the original Gresham College, which was vested in the Crown by the Act 8 Geo. III. c. 32, and also some property adjoining, purchased for, and conveyed to, the Crown under the authority of that Act in 1772. The present buildings are by the elder Dance, and were built in 1768.

PROVINCIAL NEWS.

Windsor.—The chief stone of the Windsor Ragged Schools was laid on Monday in last week on ground in Clewer-road, presented by Mr. Alderman Bedborough. The building will be 50 feet long by 20 feet wide. The contract for its erection has been taken by Mr. Snowball, of Slough. In a few weeks it will be covered in and ready for occupation.

Wombourn.—The chief stone of a new church was laid at Swin or Swindon in this parish, by Lady Ward, on Friday in last week. The site was given by Lord Ward. The architect is Mr. William Bourne, of Dudley. The church, which will seat 400 persons, is in the Early Decorated style, and consists of nave and north aisle, with chancel, &c. The cost is estimated at about 1,200*l.* Lady Ward presented 50*l.* and Lord Ward 100*l.* towards the cost.

Kingswood.—According to the *Bristol Times*, the re-opening of Trinity Church, Kingswood, took place on Wednesday in last week. The following are the principal alterations :—The irregular and unsightly high pews have been substituted by an uniform arrangement of sittings, with trefoiled bench ends. A new pulpit is placed next the north angle of the chancel, octagon in plan, and executed in Bath scallet stone, with carvings in the several faces. A simple and inexpensive—but we hope not on that account the less safe—system of warming has been introduced. The several works have been carried out by Messrs. Willis and Prewett, from the designs of Messrs. Pope, Bindon, and Clark.

St. Hilary.—The parish church, lately destroyed by fire, is to be rebuilt, it is said, in a superior style.

Willenhall.—A site for the new church of the district parish of St. Stephen has at last been got and duly conveyed to her Majesty's Commissioners for Building new Churches. The original estimate of cost will be increased in consequence of the recent rise in the price of materials and labour.

Warwick.—During the past week, some Gothic stalls have been placed in the chancel of St. Mary's Church, Warwick. They are of foreign wainscot, and are left in the colour of the wood without any stain. They have been designed after the old stalls in the Beauchamp Chapel adjoining. The work is of a massive description, each stall weighing upwards of 7 cwt.—all being in solid oak. Mr. H. Bromwich was the contractor, and Mr. Hearn the carver, under the superintendence of Messrs. Francis, architects.

Angmering, Sussex.—St. Margaret's Church has been re-built, except the tower, and was re-opened for divine service on Easter-day by the Bishop of Chichester. The expense has been defrayed by Mr. G. H. Kindleside Gratwicke, of Ham-house, under the direction of Mr. Teulon, architect. It consists of chancel, nave, tower, north and south aisle, mortuary chapel, and vestry on the north-east of the chancel. The north aisle is an addition. The seatings are all of oak, also the pulpit, prayer-desk, and screen-work. The floor is laid out with encaustic tiles. The west tower-window is filled with diapered glass and angels bearing scrolls. Two of the stained-glass windows are by Messrs. Ward and Nixon; the other six by Mr. Gibbs. The walls are built with stone of the neighbourhood, with Caen-stone windows and dressings, inside and out. The decorating has been further carried out by illuminated texts beneath the wall-plates of the roofs over the arches and arcading; and the east wall of the nave is enriched. Over the chancel arch is a diaper of azure and gold, with the decalogues forming the centre. The spandrils of the arch are occupied by the Lord's Prayer and Creed. The carving of the arcading, representing natural plants, was executed by Phyfees and Forsyth. Mr. Cushing, of North Elmham, Norfolk, was the contractor.

Newcastle-under-Lyne.—The council have resolved to provide a covered market for the town, to be erected on a site in Penkhull-street, to be purchased at a cost of about 1,650*l.* A loan of 5,000*l.* is to be raised on mortgage of the premises and revenues of the markets, if the Treasury consent to the proposal.

Guemerford, near Calne.—The new church at this place, which is dedicated in honour of the Holy Trinity, consists of chancel, 20 feet long; nave, 60 feet by 21 feet 6 inches; south porch and vestry on the north-side of chancel, a portion of the latter being made available for a small organ by means of an arch in the chancel wall, filled in with an oak screen. The style is Early Decorated. The windows in the nave are all of two lights. The west gable is surmounted by a turret, containing one small bell. The roofs are of high pitch, and covered with tiles. The timbers are open and stained. The seats in the nave are of deal, with oak cords, plain in character, and stained. The pulpit, which is approached from the vestry, is composed of stone and oak: the prayer-desk and chancel fittings are of oak. The whole of the windows in the chancel are filled with stained glass in patterns. The chancel arch, which is lofty, with moulded caps and bases, has on each side angels, 3 feet 4 inches long, in the attitude of prayer. The exterior walls are built of a grey limestone, the dressings being of Bath stone. The church is heated by hot-water apparatus, through gratings in the aisle. The architect is Mr. Gabriel. The builders were Messrs. Butler and Cleverley. The stained glass was provided by Mr. Hudson. The new cemetery in which the church stands, consisting of nearly two acres, was presented by the Marquis of Lansdowne. It is now being laid out under the direction of Mr. Spencer, of Bowood, and planted with diodaras, Irish yews, and weeping cypress.

Rochdale.—A great effort is being made to restore the parish church; and plans have been prepared by Mr. Joseph Clarke, of London, for the entire reseating,—with new roofs on the nave and north aisle, which will be rebuilt,—with a chamber for the organ at the east end, opening into the chancel. The frightful galleries will be done away with, or at least so modified that the fine features of the church will be brought out and seen. Several interesting specimens of the old church have been found, and, considering how little remains in this part of Lancashire, are viewed with much interest. It will be a costly undertaking, but one of the churchwardens heads the list with a gift of 500*l.*

Edinburgh.—KNOX'S Free Church, Canongate, was opened on Thursday in last week. The church and dwelling together form the memorial of John Knox. There have been many attempts to raise a monument to KNOX. The Castle-hill was once spoken of as the site of such a monument. Next, Knox's Monment Committee was formed; but this national work remained undone till a comparatively poor congregation took it up, and carried it through. Mr. Lassels was the architect.

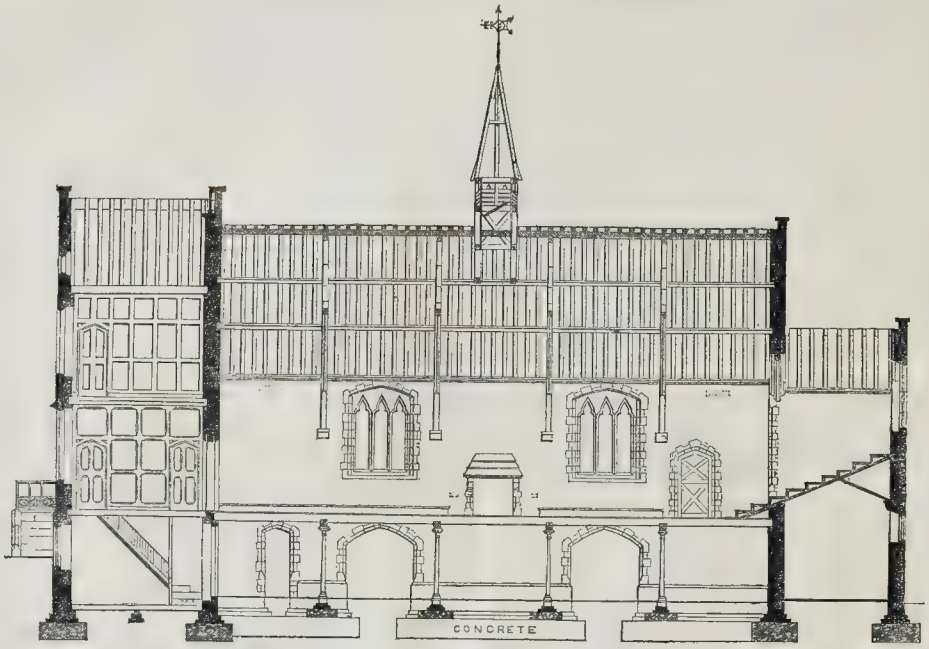
Kirriemuir.—A new church, built by the West United Presbyterian Congregation, at the West Town end, was opened on Sunday in last week.

Arbroath.—The enlargement of this town, according to the *Arbroath Guide*, is progressing rapidly. Dwelling-houses, "neat and substantial," intended for working people, are in progress in different quarters, and soon others will be commenced. Want of houses for the labouring class was never more pressingly felt, and this desideratum is not experienced by working people alone. The demand for one class has led to a demand on the part of the more opulent, and the consequence is, that rents generally are on the rise.

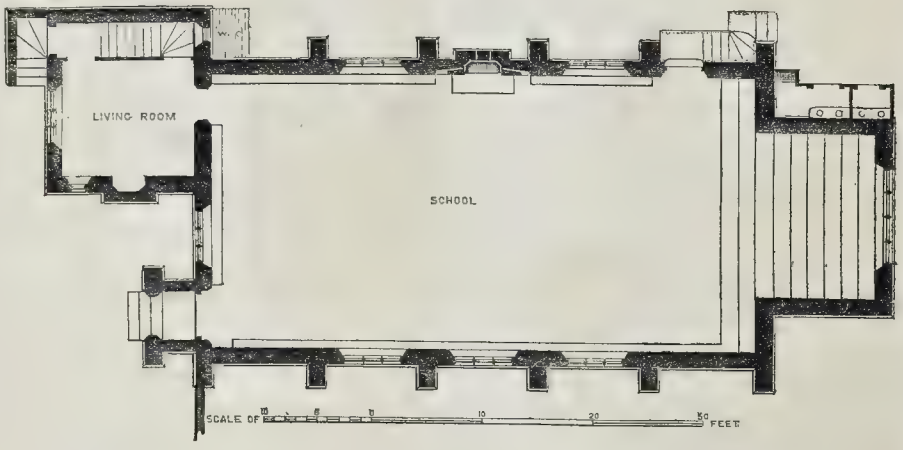
Lossiemouth.—The contract for the new harbour improvements has been signed by the directors and Mr. Stuart, the contractor. The recent severe weather has much retarded the progress of the works, but the contractor is making preparation for completing the undertaking within the time allowed. A standing-committee has been appointed to superintend the progress of the works.

Banff.—This town, like Arbroath, has taken a start in the building line, and, according to the *Banffshire Journal*, there is still a scarcity of dwellings, especially for the working class. A parsonage to the Episcopal chapel is shortly to be erected from a design in the Elizabethan style of architecture, furnished by Messrs. Reid, of Elgin, architects. A whale-fishery company are about to erect suitable premises; and improvements in deepening the harbour, &c. are going on.

INFANT SCHOOL AND RESIDENCE, PILE-STREET, BRISTOL.



SECTION.



PLAN.

REDCLIFFE INFANT SCHOOL, BRISTOL.

Years ago, a citizen of Bristol, named Brickdale, willed that the proceeds of certain lands belonging to him should be applied to charitable purposes. A feeling of doubt on the part of a churchwarden as to whether the particular course which had been given to the charity was that which Brickdale had desired, led to "a *friendly* suit" in Chancery. This of course locked up the funds, and led, quite in a proper way, to an expenditure in costs which would doubtless have frightened the good testator had he foreseen the result. Without going into details, however, for fear of being unjust, we will merely say that an order to obtain a site and erect a School for Infants, was confirmed in 1845; and by those cautious steps for which the Court is celebrated, matters have been gradually brought so far towards a close, that a school and residence have been erected on the south side of Pile-street, near Redcliffe Church, under the superintendence of Mr. G. Godwin, architect.

We give an elevation, plan, and section of the structure. It includes a school-room, 50 feet long by 25 feet wide, with a gallery for assembling the children together, 15 feet by 10 feet 6 inches; a residence for the mistress; and a covered playground beneath the school. The height of the school-room is 12 feet at the sides and 25 feet in the centre. Ventilation is provided for by gratings at the level of the floor and under the plate, and by a louvre in the roof. There is an arrangement to admit fresh warmed air from the back of the stove, which is formed of fire lumps. The building is of Pennant stone, with Bath-stone dressings: the walls, internally, are rendered with blue lias cement. The roof is covered with green Bangor slates. The porch is surmounted by a turret for the bell. The tenders for the work ranged from 1,066*l.* to 789*l.*



REDCLIFFE INFANT SCHOOL, BRISTOL.—GEORGE GODWIN, F.R.S. ARCHITECT.

WORKMEN'S WAGES AND DISCHARGES.

In the Marylebone County Court, a journeyman carpenter, named Gosling, and four other carpenters, sued Mr. Austin, a builder, for half a day's wages each, under circumstances of some interest to workmen and masters. From Gosling and Shelton's statements, it appeared that they and nineteen other carpenters, with a foreman, were at work in defendant's workshop, when defendant came into the place in the middle of the day and called out, "Ho, all hands knock off!" and vociferated that he was being ruined and that they were all drunk. In consequence of this they all left the premises, with an intimation to meet the defendant's clerk on the following morning at eight o'clock. Upon their going at eight o'clock the next morning, defendant's clerk offered them a day's wages each for the day Mr. Austin had knocked them off. Some of the men took this pay and others not. A deputation was elected to wait upon Mr. Austin, to know what they were to do, and the clerk directed the men to wait until twelve o'clock, or such time as Mr. Austin came.

At twelve o'clock the clerk informed the whole of the men that Mr. Austin had selected ten out of the twenty, whom he meant to keep on: the other ten with the foreman might take their tools. The plaintiffs now contended that they were entitled to a half-day's pay for the time they were kept waiting on the day after they were so summarily "ye-ho'd." They urged that their tools were on the premises, that they were ready to go on with the work, and declared that there was not the slightest foundation in Mr. Austin's charges against them. Gosling, in proof of his sobriety, said he was a confirmed temperance tectotaller; the foreman he could not, however, get to sign the pledge.

In answer to this, Mr. Waley, clerk, and Mr. Anguis, the outdoor foreman to defendant, declared that the men were regularly discharged, and that their coming the next day to the works was of their own choice. That they were not entitled to a fraction more than the day's pay.

The Judge said he was of opinion that the whole of the plaintiffs were discharged at the time their master told them to leave. It might be a hard case to keep the men in a state of suspense, but it was the men's fault as much as the master's. Their money was tendered, and by many accepted; this showed that there was a *bonâ fide* intention of discharge. Verdict for the defendant, with costs.

UNIVERSITY OF DUBLIN COMPETITION.

Permit me to say, respecting your paragraph stating that the Board of Trinity College, Dublin, had adopted the designs submitted by Sir Thomas Deane and Co. for the proposed new building, that in the above competition the Board awarded the designs sent in by me the first place, those by Sir Thomas Deane the second; who, in conjunction with me, has been appointed to carry out the building on my plans, with some trifling modifications suggested by a member of the Board. The *elevations* submitted by Sir Thomas Deane since the competition, have been approved of, which may have led to the error; but they have been drawn to suit the plans sent in by me, which were adopted.

John McCurdy.

Notices of Books.

Original Papers, published under the Direction of the Committee of the Norfolk and Norwich Archæological Society. Vol. IV. Part I. 1853.

The county of Norfolk is peculiar in geographical position and features, and contains numerous interesting antiquities, particularly in its castellated, domestic, and ecclesiastical buildings. Some of these have been well and carefully illustrated and elucidated in the previous volumes of the Norfolk Society's transactions. In the present part is an original essay, by Mr. Harrod, the honorary secretary, on Castle Rising Castle,—a peculiar and very interesting specimen of the ancient fortified mansion-fortresses of our country. The writer has evidently taken much pains to ascertain some of the early annals of the place by examining and adducing ancient records. These, for the first time, show that Blomefield, in his "History of Norfolk;" and Miss Strickland, in her "Lives of the Queens of England," and other authors, are woefully erroneous in their accounts of the imprisonment, death, and burial of Isabella, Queen of King Edward II. They all refer these events to Castle Rising, whereas it is clear by the documents now adduced that the queen was neither a prisoner, nor interred at this place.

The castle itself is fully described, and illustrated by plans and views. The former appear to have been accurately and carefully made; and the etched view of "the grand entrance to the great tower" is a very interesting display of the Norman ornamented architecture which was employed in a fortress. It seems rather to belong to ecclesiastical than to castellated edifices.

Another paper in this same publication, by Francis Worship, on "The Genealogy of the Paston Family," written originally by Sandford, the historical genealogist, is very interesting. It is derived from a splendid folio volume in the possession of the Duke of Newcastle.

Annal of Scientific Discovery, or Year-book of Facts in Science and Art for 1853. Edited by David A. Wells, A.M. Boston, U.S.; Gould and Lincoln, 59, Washington-street. 1853.

This is the fourth yearly volume of the present series. It contains a condensed record of the most important discoveries and improvements in mechanics, the useful arts, natural philosophy, chemistry, astronomy, meteorology, zoology, botany, mineralogy, geology, geography, antiquities, &c. together with a list of recent American scientific publications, a classified list of the number of last year's American patents, obituaries of eminent scientific men, notes on the progress of science during the year 1852, and a general index to the whole. The main feature of the book is, of course, not exclusively American, all trustworthy sources, foreign as well as home, being ransacked for the purpose of filling its pages,—the *Builder* itself, we need scarcely add, amongst the number: indeed the first page that opened to our eye contained an article on modern Cyclopean Walls,—honourably acknowledged, in this as in other cases, to have been taken from our columns,—and the next a quotation of our opinions on the possible future of magnetic science. Many foreign works quoted from have yielded to its pages useful or valuable matter on various subjects which will be new to most English readers, as indeed will much of that which is more especially American in its origin. The whole constitutes, as far as its limits allow, an excellent *resumé* of the main features of last year's general progress in every useful art and science. We think that such a work might usefully be extended, either by doubling its size, or by issuing it half-yearly, and at as moderate a price as possible.

Miscellanea.

Queen's College, Birmingham.—It will be seen, by advertisement, that the department in connection with "Arts, Manufactures, and Commerce," will be opened in May. The appeal from the College to the friends of education to enable the council to purchase expensive philosophical apparatus, models, &c. and to fit up the chemical laboratory and engineering workshop, has been generously responded to by the Duke of Sutherland, the Marquis of Lansdowne, the Earls of Dartmouth, Clarendon, and Granville; the Lords Foley, Calthorpe, Leigh, and Lifford; General Vyse, Mark Philips, esq. Messrr. Percy, Dawes, Bagnall, Barrows, and Hall, and other leading Staffordshire iron masters, Messrs. Welch, Armfield, Upfill, and other influential merchants of the town. Considering the present condition of commercial enterprise, the unrestricted competition to which the trade and manufactures of the country must inevitably henceforth be exposed, in connection with the fact that systematic education in arts and manufactures is established in some continental states, a cogent argument is supplied that this department, under the powers granted by the crown to the College, should be energetically carried out; and the recent alarming and numerous accidents in ships, mines, manufactories, and railways, must be allowed to add still farther importance to this branch of education. It must be admitted that no town in the kingdom offers such practical advantages as Birmingham.

Marylebone Free Library.—A public meeting, proceeding from the working men's committee, was held last week at the Trinity District Schools, Buckingham-street, Fitzroy-square, to promote the movement on foot for establishing a free library for Marylebone; Mr. Mills in the chair. It was stated to the meeting that the Duke of Cambridge, the Archbishop of Canterbury, the Dukes of Argyle and Wellington, Lords Aberdeen and Ashburnham, the Attorney-General, the High Bailiff of Southwark, and Baron Rothschild, had identified themselves with the movement, some of them giving large pecuniary contributions. The chairman said that attempts made by workmen themselves to establish reading-rooms had invariably failed, and that although occasionally resuscitated, in the end they died out. The same was the fate of literary institutions. It was, therefore, an earnest of success that noblemen and gentlemen were now joining with the workmen in their endeavours for self-improvement, for in proportion as the lower classes elevated themselves by education, so would the sympathy of the middle and upper classes become more warm in their interest. Other gentlemen addressed the meeting in support of resolutions approving of free libraries as a means of social and moral improvement, and pledging the meeting to the support of one for Marylebone. Mr. Oliviera is still actively at work. We shall give some particulars before long.

London Antiquities.—The collection of antiquities formed by the late Mr. Edward Bedford Price, F.S.A. has been dispersed by auction. It consisted chiefly of objects found during the demolitions and excavations in the city of London. It is to be regretted that such a collection should not have been purchased entire, or a judicious selection made from it for the City of London Museum, which at present exhibits but little more than empty show-cases. The collection sold well; many of the lots at high prices, especially the specimens of early Roman and British pottery and metal work, the more important specimens having been secured for the British Museum.

Rusty Iron.—Observing in the *Builder* a paragraph headed as above, I have thought it might be interesting to your readers to know that there is a new material called "Malthurian Varnish," which is most effectual in preventing rust; being, at the same time, cheap, easy of application, and extremely well suited for iron fences. The method of preventing rust by galvanizing the iron, recommended by your correspondent, appears inapplicable to iron-work already erected, on account of the inconvenience and costliness of its removal to undergo that process.—S. B.

The General Society for Improving the Dwellings of the Working Classes.—On the 12th inst. the chief stone was laid of new buildings for working class dwellings, in course of erection at the back of the brewery in Broad-street, Golden-square, and of which we spoke in our first article on the Homes of the London Poor. A dinner was afterwards eaten at the London Tavern (and a very good one, too, thanks to Mr. Bathe), in aid of the general society for improving such dwellings, and various speeches were delivered, to which we may refer next week, when we shall give a few particulars of the new building.

Crystal Palace.—As the preparations for the Crystal Palace are fast progressing, it has occurred to me that among the casts and models of mediæval ages none would be more interesting than the "backs of the stalls in Amiens Cathedral." Rude though the figures may be, it seems to me impossible to overestimate the *wonderful life* and *animation* which pervade them. One of the subjects is the decollation of St. John the Baptist.—Antiquarian.

Subterranean Railway.—We are informed that a proposal has been laid before Prince Albert for constructing a subterraneous and partly sub-aqueous railway from Charing-cross to Hungerford-bridge, and then along the river to London-bridge, leading to a terminus at Cornhill.

The Sale in Her Majesty's Theatre.—On Thursday the 7th inst. the day fixed to recommence the sale of the properties, scenery, and fixtures, of Her Majesty's Theatre, in separate lots (the former negociation for the purchase in one lot having gone off), immediately after the sale had commenced, an offer of 11,000*l.* (less the amount realised by the two days' sale which had taken place) was made, and at once accepted. Mr. Charles Lee is the purchaser.

Warming by Gas.—Allusion is made in the last number of the *Builder*, April 9, to a new mode of heating the Music Hall at Worcester, by means of cylinders placed under the hall, containing an arrangement of perforated gas-tubing, by means of which the pure warm air alone is given off into the hall. Now it is but justice to Mr. William Reichenbach, of the Borough-road, Southwark, to mention, that upwards of two years since, St. Jude's Church, Southwark, was fitted with a gas-warming apparatus exactly, to all appearance, on the same principle as in the Music Hall at Worcester. We have tried the system for two winters, and it has been most successful in every way. The cost has been about 8*l.* a year, and the church, which is capable of holding 1,500 persons, has been well warmed. The system was adopted entirely on the strong recommendation of Mr. Reichenbach, gasfitter to the church.

G. E. Tate, M.A.
Incumbent of St. Jude's, Southwark.

THE CLOSING OF THE GRAVEYARDS.—In reply to another question put to Lord Palmerston last week in the House of Commons, as to when the graveyards and burial-places within the City and metropolis of London were to be finally closed, and what further steps have been taken to provide the means of extra-mural interment,—his lordship said, that as he had already stated to the house, he had given instructions to the proper medical officers to make inspection of the graveyards; that this inspection was now going on as far as circumstances would permit, and that the result had hitherto been, that in *every* case he had applied to the Council-office for an order in council to close graveyards; and he thought the probability was that the same course would be pursued with regard to almost all the graveyards of the metropolis. With respect to the arrangements as to burials beyond these limits, that question must rest with the parishes concerned; but he apprehended that the great extent of the ground purchased near Woking would be amply sufficient to meet all the demands of the metropolis for a great length of time. It appears that amongst other proceedings in consequence of the Home Secretary's determination, it has been resolved that the vaults under the Marylebone parish church, and those under Christ Church, Trinity Church, and St. John's-wood Chapel, are to be closed forthwith, and that when interments take place in the unoccupied portions of them, they are to be hermetically sealed. The Glasshouse-yard burial-ground is to be entirely closed, the Liberty of Glasshouse-yard uniting with the adjoining parish of St. Sepulchre, or some other parish, to form a joint burial board. The burial-ground between the Foundling Hospital and Regent-square is to be partially closed, burials of parishioners only being permitted for the next two years in the portion not used. An announcement, signed by Mr. Waddington on behalf of his lordship, has been made to the effect, that it is the intention of the Home Secretary to report to her Majesty in council the necessity for closing the graveyard of St. Botolph, Aldersgate, founded on a report made by Dr. Sutherland, in consequence of the complaints of parishioners, "that the most offensive effluvium emanated from the enormous number of bodies in the ground, which, in consequence, stands 5 or 6 feet above the level of the street, having been used for interment upwards of 500 years." The days of the metropolitan graveyard abomination, therefore, are numbered.

METROPOLITAN DRAINAGE.—On the 4th inst. a meeting of delegates appointed by the metropolitan parishes to consider the provisions of the Great London Drainage Bill was held at the Marylebone Court-house, Mr. Nicholay in the chair. Mr. J. Toulmin Smith, author of a pamphlet in favour of local self government in all such cases, spoke in support of an amendment, to the effect, that the Bill, with certain modifications, was one that ought to be approved of. Mr. Nelson opposed the measure, as contrary to the principle of local self-government. After considerable debate, the amendment of Mr. Smith was lost. Mr. Nelson then proposed, and Mr. Horne seconded, another amendment, to the effect, that any scheme of drainage should be under the supervision of a board to be appointed by the ratepayers; that sewage be diverted as much as possible from the River Thames, and be delivered, without artificial means, at a point so distant as would preclude its return; that if the collection should form a source of profit, it should be sold for the benefit of the ratepayers; and that, should the Legislature agree to such a system, it should be without a guarantee clause. This amendment was agreed to.

INSTITUTION OF CIVIL ENGINEERS.—On the 5th inst. Mr. Robert Stephenson, M.P. Vice-President, in the chair, the paper read was "On Locomotive Boilers," by Mr. J Sewell. After showing the theoretic and practical evaporative value of coal and coke, at different pressures, and the various results under stationary boilers and in locomotive boilers, and with slow or quick combustion, a series of tabulated results was given, showing that, estimated by the value of the fuel, the best locomotive boiler exceeded the Cornish boiler by about 2 per cent. in evaporative economy; but ordinary locomotive boilers were from 4 to 10 per cent. below the Cornish standard of 10¼lbs. of water evaporated by 1lb. of Welsh coal. Evaporative economy was shown to follow the increase of the tubular ratio of the heating surface of the long tubed boilers, but it was urged that, in practice, evaporative rapidity was as essential as economy of fuel alone, and the Great-Western boilers were referred to as efficient examples in this respect. The rate of combustion, the time of the heat remaining in the boiler, and the number of draughts of steam from the boiler, were shown to be 25 per cent. in favour of boilers mounted on wheels of 8 feet diameter, over those on wheels of 6 feet diameter, for economy of fuel and for pure steam to the cylinders. The influence of load and velocity on the consumption of fuel was referred to, as defeating any economical comparison between engines maintaining a speed of 50 miles per hour and those which only reached a speed of 30 miles an hour. The advantages of a larger proportion of water-evaporating surface to the total water in the boiler, the shorter ascent of steam from the lower tubes to that surface, and the greater proportion of the heat, passing through tubes, nearer the evaporating surface, were referred to, as being in favour of small boilers with the fewest rows of tubes, generating most steam per square foot of the total heating surface. It was suggested that vertical rows of tubes, with free vertical steam passages between them and the largest practicable water surface, so much valued for stationary boilers, might merit a trial in the large locomotive boilers, and might place them on a level with the smaller boilers in evaporative rapidity per square foot of heating surface. The want of a more homogeneous structure for locomotive boilers was referred to, in order to safely resist the expansion and contraction which now fell on particular parts only, and ultimately injured the cohesion of the metal at these parts. Explosions of boilers were noticed, as frequently occurring, when either the safety-valve or the regulator was opened, and it was suggested that this might be due to the sudden disturbance of the pressure of the elastic force tending to one point, and momentarily increasing the pressure at that point, from the effect of which the boiler might burst, even with the safety-valve in good order. The apparent effects after explosion would not be then due to the pressure only, but to the sudden release of the whole elastic force, which, like any other spring, would exert a force beyond its quiescent limit.

LECTURE BY LORD LEWISHAM.—At Bilston, on Tuesday week, Viscount Lewisham delivered a lecture which he called "Sketches of Town and Country Life." The lecturer described his main object to be to place his own much-abused class in a more favourable light in the eyes of the community at large, and to bring different classes of the people, now separated by locality of residence or station in society, into closer community, thereby promoting an increased knowledge of each other, and, consequently, greater mutual confidence and respect; for he must strongly reprehend the fallacy that the aristocracy of England cared not for the welfare and happiness of those of their neighbours who were not of their own grade. His lordship concluded his "Sketches" by urging the importance of every man, in whatever station, improving, for the benefit of others, talents and opportunities for the possession of which he was responsible. The thanks of the meeting to the noble lecturer were expressed by the Rev. J. B. Owen; and his lordship promised to lecture again in Bilston.

ALLEGED RESTORATION IN YORK CATHEDRAL.—The Rev. G. A. Poole, says a cotemporary, in a paper read before the Northampton Architectural Society, stated that at Lincoln the cathedral was kept in constant repair, and "no single stone was allowed to be replaced except by its *fac-simile*." At York, where also constant attention is given to the works, but perhaps with less strict surveillance of authority, "one of the capitals in the early English arcade in the north transept is replaced with a bust of the Duke of Wellington!"

BAPTIST CHAPEL AND SCHOOLS, BAYSWATER.—A Baptist chapel with schools has been erected in Westbourne-grove. It purports to be in the Early English style, but is not likely to be taken for an ancient structure. It is built of Kentish Rag-stone and Bath-stone dressings. The entire length of the building is 95 feet by 52 feet wide. It contains on the basement floor, school-room, 70 feet long by 46 feet wide, also infant school-room and two class-rooms. The school-rooms are 13 feet high: the ground-floor of the chapel is 10 feet above the street, and is approached by three easy flights of stone steps. It has at present only an end gallery, but is intended to have side galleries hereafter. It will seat 600 persons on the ground-floor, and 200 in the gallery. There is a raised platform for the baptistry between the two vestries, with a groined ceiling over. The baptistry is of enamelled slate (sea green), with a flight of steps at each end. The aisles are laid with large slate slabs, and gratings for ventilation. The chandeliers are entirely of glass, and the windows have stained-glass in them.

The cost of the chapel, vestries, and school-rooms complete, is	£3,450
Warming and ventilating, done by Mr. W. Hill, Greenwich	112
Fencing, railing, gates, and street paving	200
Gas fitting and chandeliers, done by Messrs. Osler and Co. and Messrs. Verity and Sons	90
Furniture and cushions	150
	£4,002

The architect is Mr. G. Searle, and the builders are Messrs. Sissons and Robinson.

PROGRESS OF PHOTOGRAPHY.—Sun painting on paper is being put to useful national purposes. The descriptions in the *Hue and Cry*, &c. of notorious prisoners in custody, with the view of learning their antecedents, and whether they were the persons charged with crimes in other districts, having, in consequence of the various aliases, &c. assumed, been found most defective in practice, the Governor of Bristol jail has introduced the system of taking multiplied copies of photographic likenesses of notorious offenders in custody, which, with written descriptions of the prisoners, are henceforth to be forwarded to the principal jails and police stations in the kingdom. The first likenesses taken in the jail by this process are those of a notorious and daring burglar, an utterer of forged Bank of England notes, and a female criminal suspected of having been long "wanted" in other parts of the kingdom. In rather disagreeable juxtaposition with this very useful application of a beautiful art, we must also record that there is some talk of continental tourists being presented with their likenesses along with their passports, for the purpose of identification, and in order to obviate the risk of robbery or murder for the sake of obtaining possession of passports.

A FULL-GROWN GASOMETER.—Some few years since several of the most "eminent engineers" of the day gave evidence before a Parliamentary committee to the effect, that a gasometer of greater diameter than 35 feet would be very dangerous; and recommended that in all cases where this limit was approached, a series of strong walls should be built round the gasholder, in order to lessen the injury which the almost inevitable "explosion" might entail. Although practical men subsequently proved such an idea to be chimerical, no one, that we recollect of, has attempted to make a gasometer at all approaching in size to one described in the *Wolverhampton Chronicle* as having been lately manufactured at Smethwick. Its diameter is 165 feet. By bringing a recent patent to bear upon its construction, the makers have effected a saving of 2,000*l.* in raw material, through the absence of the heavy iron framework which usually supports the roof (if we may so call it) of a gasometer. The top is quite flat, experience having proved that with a certain mode of construction all internal support is superfluous. This gigantic gasometer is intended for the Sheffield Consumers' Gas Company. The manufacturers, Messrs. Horton, are also engaged in manufacturing telescopic gas-holders on a new principle (the subject of another new patent), by which still further economy, it is said, in labour and material is insured.

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For two villas on the Henley-road, near Reading. Mr. Jno. Billing, architect. Quantities supplied.

Carter (Reading)	£1,630	0	0
Stredder (Kensington)	1,627	0	0
Leach (Reading)	1,480	0	0
Withers (ditto)	1,478	0	0
May (ditto)	1,460	0	0
Matthews (ditto)	1,440	0	0
Strong (ditto)	1,420	0	0
Woodroffe (ditto)	1,399	0	0
Titcombe (Windsor), accepted	1,313	12	7

TO CORRESPONDENTS.

"F. L." "R. R." shall be looked to, "W. C. (ditto)," "E. R. H." "G. W. B." "Plotter" (we cannot assist), "W." "J. S." "A Subscriber" (five of them), "R. I. F." (we shall be glad to see drawings), "C. P." "J. B." "W. W. A." "H. B." "F. W." "Students," "G. A." "F. P." "A Journeyman Joiner," "W. W." (write to Mr. Leslie, and he will explain), "J. W. W." (we have already sent three times, and cannot take any further trouble about it), "P. P.' "W. P. M." (we are forced to decline advising), "C. C. N." "T. A. T." (the numbers may be had), "J. R." "H. B."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and not to the Publisher.

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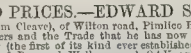
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1-inch yellow	14s. 0d.	1 inch white	13s. 6d.
1¼ " "	16 6	1¼ " "	15 0
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24 per cent. discount off amounts exceeding twenty pounds.
ARCHIBUTT and ATKINSON, St. Pancras saw-mills, Cambridge-street, Old St. Pancras-road.

Yellow battens, 2s.; Deals from 3s.; and plank from 4s. per 12 feet; timber, from 70s. per load, and every kind of English and foreign wood. Goods at the lowest prices direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

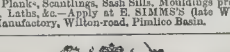
REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.



SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.



TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, Blue Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

	Per square.		Per square.
⅜ inch yellow	14s. 0d.	⅜ inch white	13s. 6d.
½ " "	16 6	½ " "	15 0
⅝ " "	17 6	⅝ " "	17 0

2½ per cent. discount off amounts exceeding twenty pounds.
ARCHIBUTT and ATKINSON, St. Pancras saw-mills, Cambridge-street, Old St. Pancras-road.

PARQUET BORDERS are now laid (at about half the former prices) in geometrical, spiral, and all other designs on a new system, by which a room of the largest dimensions can be completed as a few days' notice. Applications from architects for designs and further particulars will be promptly attended to by
The LONDON PARQUETRY, 8, Whitefriars-street, City.

DURRAND'S "BONDED and SUFFERANCE WHARF" TIMBER-PRESERVING WORKS, ROTHERHITHE.—BETHELL'S process consists in creosoting timber with creosote, or oil of tar, and is particularly applicable for Railway Sleepers, Bridge Timber, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges, and also for use in the colonies, as being perfectly impervious to the attacks of all land or marine insects. PAYNE'S, Sir W. BURNETT'S, and MARGARY'S processes, in addition to their preserving properties, are likewise non-combustible, and are, consequently, adopted in her Majesty's Dock-yards, as a preventive of fire in Ship Building; and are also extensively used in House, Farm, and general Building.
Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôts of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.
Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 2, Charlotte-row, Mansion-house, City.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge, are prepared to supply timber and deals, &c. cut and sawn out, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.
The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must ensure satisfaction.
The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

PADDINGTON SAWING, PLANING, and MOULDING MILLS, 3, Irongate Wharf, Praed-street, Edgware-road, near the Great Western Railway Station, and abutting on the Grand Junction and Regent's Canals, affording the advantage of railway and water carriage.
W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING BOARDS, MATCHED BOARDING and MOULDINGS of every description prepared in a superior manner, from the best goods.
W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive mills afford convenience to purchasers for immediate conversion of their goods, on the most mod rate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded, post-free, on application.
N.B.—Sawing and planing for the trade.

TIMBER PRESERVING COMPANY.—This Company are prepared to enter into CONTRACTS for creosoting, or otherwise preserving sleepers and other timber in any part of the country. Their present stations afford great facilities, and they will erect other stations when required for a sufficient amount of work.—Apply to E. LOADER, Esq.; or J. N. WARREN, Esq. 50, King William-street, London-bridge.

STAINING DEAL TO IMITATE ALL KINDS of WOODS. It requires NO SIZING, and will stand the exposure to the weather. Price 6s. per gallon. Varnishes for W. NAYLOR'S Stains may be had at the Factory, 67, James-street, Oxford-street.

TIMBER YARD and BUSINESS, near the Tottenham-court-road. TO BE DISPOSED OF, a large TIMBER YARD, and an old-established Business, in the above desirable locality.—For particulars, apply to Mr. WM. SYKES, Timber Merchant, 11, Osborn-street, Whitechapel.

FIRE ANNIHILATORS.

CASES OF SUCCESSFUL USE.

BUILDINGS.

Imperial Patent Wadding Works, Manchester.

"January, 1851.—The whole insurance offices have always refused to insure our premises, even at the rates paid for the most hazardous trades. We consider the Annihilator will be able to put out any fire that may hereafter occur. One that took place in January last was put out in about five minutes, by three charges although it spread with the rapidity of gunpowder a distance of 150 feet, and the men were enabled to resume work in an hour afterwards."—Extract from letter of Mr. W. Bates, jun. managing partner.

Thames Bank Depository.

May, 1851 20,000*l.* worth of pictures rescued by using a machine, fetched from a shop a mile distant, and applied when the fire had been raging upwards of three hours.—Testified by James Smith, manager.

Shop of Mr. Cope, grocer and tradealer, Bradshaw-street, Shudehill, Manchester.

April, 1851. Fire extinguished by a fireman of the Fire Annihilator Company, temporarily stationed with the Manchester Fire Brigade.—Testified by declaration of Thomas and John Clark, firemen, F. A. Co; William Tayler, pawnbroker, Oldham-road, Manchester; and Robert Hardman, Sycamore-street, Oldham-road, Manchester.

Shop of Mr. Mackay, draper and outfitter, Great Howard-street, Liverpool. March, 1853.

"The flames had burnt through the wood and shutters when the fire-brigade arrived. Two of Phillips's Patent Fire Annihilator Machines were applied with instant effect. Water was also applied, and the fire was entirely put out in a very few minutes."—*Liverpool Journal*, March 6, 1853.

Mr Samuel Hulme's Cotton Waste Mill, Stockport, March, 1853.

"The machines acted well, and extinguished the fire quite almost immediately, with the exception of the red glow upon the cotton waste, which we put out with buckets of water."—Extract from letter of Mr Samuel Hulme.

Lecture Room, Brighton, December, 1851.

"A bottle of phosphorus, two bottles of turpentine, the contents of three spirit lamps, a bottle of potassium, and a bottle of vitriol, were overturned at the same moment by a person suddenly shifting his place near the lecture table. These substances all inflamed upon contact; and in one minute, on application of the annihilator, every symptom of flame was perfectly extinguished." Extract from letter of Mr. Montagu L. Phillips, professor of chemistry, &c.

Floorcloth Manufactory of Messrs. Story, Brother, and Co. Lancaster. Sept. 1852.

"The fire originated through the burning of the flues in one of the drying-stoves; the flames coming in contact with the goods, all was in a flame in an instant: fortunately, having three of your large machines (No. 8) ready charged close at hand, we let two of them off, and placed them inside the stove. The flame was almost instantly subdued by the two discharges, but, owing to the intense heat inside, we were unable to get to the burning embers, or a few buckets of water would have put them out, so we let two more charges off, which kept the flame from rising again till the watercisterns played upon it."—Extract from letter of Messrs. Storey, Brothers, and Co.

CHIMNEY FIRES.

1. Viscountess Keith's, 110, Piccadilly, Jan. 1852.

"I was at Lady Keith's on business, when I was told that the kitchen chimney was on fire. I volunteered my assistance; the fire was burning very fiercely indeed. I am quite sure that if it had not been put out as it was, the consequences would have been very serious. I struck the machine as directed. The effect was instantaneous and complete. . . . When the fire was out the engines arrived; the men came down into the kitchen, and appeared astonished and incredulous; and one of them remarked, *here's that fire—thing again.*"—Extracted from a letter of Mr. Geo. Rogers, 38, Piccadilly.

2. Taunton, April, 1852.

"The first on my own premises, and, I believe, before an engine could have been procured, the shop and all would have been enveloped in fire; the other was directly opposite, and, from the structure of the chimney, would have communicated with the adjoining premises. . . . The effect was instantaneous."—Extracted from a letter of Mr. Henry Fiske, Taunton.

LEEDS FIRE BRIGADE.

Certificate by the Superintendent of the Leeds Fire Brigade of the practical use of FIRE ANNIHILATOR MACHINES.—"I hereby certify that the Fire Brigade Committee of the Town Council of the Borough of Leeds, in the County of York, ordered six No. 7's of Phillips's Fire Annihilator Machines and forty-two spare charges for the use of the Fire Brigade of the borough, and the same are placed in a carriage built for the purpose in aid of the fire-engines. Twenty-two fires occurred in this town last year, at many of which the Fire Annihilator Machines were used, and in every case they were completely successful. The following are the particulars of the most important cases:—

1. 16th January, 1852, 5 15 a.m.—Called to a fire in the model shop of Messrs. Lawson, machine makers, Mabgate, two-storied building, containing models and other combustible material; been burning one hour before I arrived, roof fallen in. Water-engines had produced no apparent check on the flames; a fireman almost suffocated in an attempt to enter the building. Used six machines: in less than five minutes every particle of flame extinguished. Damage to stock and building, 150*l.*; cost of charges used, 4*l.* 4*s.*

2. 1st Feb. 1852, 10½ a.m.—Called to a fire in the hay and straw store of Mr Robert Myers, adjoining the premises of Mr. John Clark, which contained in the upper story a large quantity of gunpowder. Found place full of smoke, could not enter, used three machines, enabled to go over whole building, and to trace fire to cellar; completely full of hay and straw; could not get a machine down; flooded with water. Damage under 20*l.*; cost of charges, 2*l.* 2*s.*; without the machines must have thrown water into premises, and destroyed whole stock, which would have been serious.

3. May, 1852, 9½ p.m.—Called to a fire in a large kitchen chimney which had been burning more than half an hour, and great fears were entertained that the whole building would be destroyed, in consequence of a large volume of flame issuing from the top of the chimney. One Fire Annihilator was discharged into the bottom of the chimney, and in one minute the flames disappeared, and in five not a spark was to be seen.

4. 18th June, 1852, 11 to 3 p.m.—Called to a fire in third story of the house of Mr. Wade, adjoining warehouse of Messrs. Calman, distillers, Dock-street. Found building full of smoke, could not get near the middle of second flight of stairs; used four machines, got into the room, and extinguished the fire. Damage estimated between 50*l.* and 60*l.*; cost of charges, 2*l.* 16*s.* In precisely similar case, that at Mr. Waite's, Commercial-street; damage 400*l.* to 500*l.* principally caused by water.

5. 16th January, 1853, 9 p.m.—Called to a fireat Messrs. Musgrave, Selby, and Woods's flax-mill, Rowman-lane, which is a three story building, with a wing at one end of it. When brigade arrived, roof of wing had fallen, flames extending far above the mill. Had once ordered six Fire Annihilator machines to be discharged together at different points. The flames were instantaneously extinguished, and fire brought into a manageable compass. By application of water remainder of fire put out, with very little damage to machinery.

Although six machines were discharged, the first two were into what I supposed (at the time) to be two small windows in the basement story, but they were in reality two very great solid coal fires under the large boilers, and in less than one minute they were extinguished, and the whole of the smoke and vapour passed away by the engine chimney, so that not a particle of that vapour could possibly come into the wing of the mill, consequently all the flame and fire in the mill was extinguished by four machines. Great fears were entertained at the time that the boilers would explode, as the valves were closed, and no steam could escape.

These accidental discharge of the two machines, as above stated, I am of opinion, was the means of preventing the explosion of the boilers and the loss of many lives which must otherwise have taken place. Damage to stock, 350*l.*; to building, 400*l.*; cost of six charges, 4*l.* 4*s.*

6. January 23rd, 1853.—Called to a fire at 12½ a.m. in the shop of Mr. Thomas Child, bookseller and stationer, Guildford-street. The premises were on fire both back and front; the smoke rushed out of front door with such force that no person could enter; two Fire Annihilator machines struck at the door, and the vapour sent off by them drove back the smoke into the shop, which enabled us to take the machines inside, where they were left; a few minutes after which I went in, accompanied by Mr. Child, the occupier, when not only the whole smoke had disappeared, but the flame was effectually extinguished, and not a single spark of fire remained, although no water had been used by the brigade, which is another practical proof that the machines will, if properly applied, extinguish solid fire. Damage, 200*l.*; cost of charges, 28*s.*

From the practical experience I have had, I cannot hesitate to bear my testimony to the utility and value of the Fire Annihilators, particularly for the use of a fire brigade in aid of the engine, as by means of these flame is instantly set under, and the dense smoke absorbed or dissipated, and thereby the efforts of the firemen most materially aided, and premises and stores saved from wasteful damage by water.

WILLIAM JAMES, Superintendent of the Leeds Fire Brigade.

Police-office, Leeds, Feb. 7, 1853.

SHIPS.

Cossipore East Indiaman on her homeward voyage from Calcutta via Demerara, with 300 Chinese immigrants on board, July 1 52.—"The fire was all on deck, and confined to the house enclosing the long boat. . . . It instantly occurred to me to try the Fire Annihilator. . . . One of the crew, who was in a good position for observing it, describing the vapour as literally licking up the flames as it passed round the interior of the house. . . . I feel very grateful to the Fire Annihilator for the service it has rendered me . . . . Armed on that scale I should even feel as comfortable on the subject of fire as if the ship and all on board were constructed of asbestos."—Extract from letter of Lieut. Dundas, R.N.

Cargo of *Pollux*, Austrian barque, laden with calcined bones and animal products. Five charges on the first day enabled the men to commence discharging the cargo, and an occasional use of the instrument since kept the fire in check, whilst confidence was given to the captain and crew, and the cargo, by these means and good management, saved, with only 10 or 15 tons damaged."—*Shipping Gazette*, June 30, 1852.

City of Manchester, Steam-ship.—"The spirit by this time was gushing freely from the cask, and in an instant the room was enveloped in flames. Before the barkeeper could make his escape he was shockingly and fatally burnt; one of the stewards also was burned; but by the . . . Fire Annihilator being promptly brought into use, the flame was subdued, and this, with a small stream of water from one of the engines, entirely extinguished the fire."—*Philanthropist*, Hull, July 1. &c. fully confirmed by a letter from the owners, Messrs. Richardson, Brothers, and Co. Tower-buildings, Liverpool.

EMIGRATION.

By the Passenger Act, 1852, s. 34, it is enacted: "There shall likewise be on board each passenger ship . . . a fire engine in proper working order . . . a Fire Annihilator for extinguishing fire." The Colonial Land and Emigration Commissioners have decided to pass passenger ships carrying Fire Annihilators, and have issued the following instructions accordingly:—

SCALE showing the number of Fire Annihilators and Fire Buckets to be carried in "passenger ships" in case there be no fire-engine on board.

Registered Tonnage of Ships.	Fire Annihilators. (N.B.—Each to be of power No. 5 in the Patentee's scale, and each to be furnished with (two spare charges).	Fire Buckets. (N.B. Six to be at least double the ordinary size, fitted each with 7 yards of 14-inch rope, and made of gutta percha or leather, and 3 of canvas).
500 tons and under....	2	18
From 500 to 1,000 tons	3	24
From 1,000 to 1,500 "	4	36
Upwards of 1,500 "	5	40

"If an adequate and effective fire-engine, with proper suction-hose, be carried, then only one-half the power in Annihilators, and one-half the number of buckets, will in each case be required. It is recommended, however, that in all cases a fire-engine as well as an Annihilator should be taken, and that when the fire buckets are required for drawing up water they should be placed on a small spar, rigged as a derrick. "By order of the Board,

(Signed) "S. WALCOTT, Secretary.

"Colonial Land and Emigration Office, Park-street, Westminster, March, 1853."

Report of Jury of the Great Exhibition.

"When we take into consideration the large number of fires which, both by day and night, endanger the life and destroy the property of individuals, the importance of the invention for the production of a machine such as that which Mr. Phillips has exhibited promises to be of very considerable utility. By being prov ded with one of these, any householder is possessed of an instantaneous means of checking a fire at its commencement, long before any great destruction of life and property could be apprehended. Its advantages on a ship-board can scarcely be over-estimated, and are most obvious."

Every further information may be obtained of the Secretary of the Fire Annihilator Company, 105, Leadenhall-street, City; or of the Company's Agents.

TO BUILDERS OF EMIGRANTS' HOUSES, CARPENTERS, &c.

JOHN G. REYNOLDS, 10 Wharf, City-road Basin, London, wishes to CONTRACT with or join some one in the above line, to CARRY OUT an INVENTION, suitable for emigrants. J. G. R. has also the LEASE of a good substantial SIX-ROOMED HOUSE TO SELL, situate in Hampden-street, Harrow-road, London. This house has every convenience. Lease unexpired, ninety years.

AWARDED a PRIZE MEDAL under CLASS XIX.—TO THE CARPET TRADE. - ROYAL VICTORIA FELT CARPETING.—The Patent Woollen Cloth Company beg to call the attention that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any they have hitherto produced both in style and quality. The public can be supplied at all respectable Carpet-houses in London and the country. The Company deem it necessary to caution the public against parties who are selling an inferior description of goods as Felt Carpets, which will not bear comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.

The Company's Manufactories are at Elmwood Mills, Leeds; and Borough-road, London. Wholesale Warehouses at 8, LOVE-LANE, WOOD-STREET, CHEAPSIDE.

STATUARY.—Plaster Casts WANTED to PURCHASE of various kinds.—Address, I. H. E. Gresham Club, City.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 800 miles on railways in this country and abroad; the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on the most important trunk lines in France, to an extent of 300 miles, resulting from a close investigation of its merits recently made by some eminent French Engineers.

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 26, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained, on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

Established 1824.—Empowered by Special Act of Parliament.

ADVANTAGES.

EXTENSION OF LIMITS OF RESIDENCE.—The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira, the Cape, Australia, New Zealand, and in most parts of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit divisible in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with, at the same time, complete freedom from liability—thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000*l.* and the income exceeds 130,000*l.* per annum.

CREDIT SYSTEM.—On Policies for the whole of life, one-half of the Annual Premiums for the first five years may remain on credit, and may either be continued as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in force seven years and upwards, to the extent of nine-tenths of their value

BONUSES.—Five Bonuses have been declared; at the last in January, 1852, the sum of 131,152*l.* was added to the Policies, producing a Bonus varying with the different ages from 24*l.* to 54*l.* per cent. on the Premiums paid during the five years, or from 5*l.* to 12*l.* 10*s.* per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division of Profits; that of only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books will be closed for the next division on 30th June, 1856, therefore those who effect Policies before the 30th of June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than at most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are Indisputable except in cases of fraud.

INVALUABLE WIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for a sum on one life from 50*l.* to 10,000*l.*

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within fourteen months.

The accounts and balance-sheets are at all times open to the inspection of the assured, or of persons desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

PAPER-HANGINGS.—R. HORNE, PAPER HANGING MANUFACTURER, 41, Gracechurch-street, Offers the trade and builders and the trade to inspect his extensive stock of NEW DESIGNS in PAPER-HANGINGS, which, by the aid of powerful machinery, he is enabled to offer at the following prices, in stock quantities, for cash only, viz.:—

Stout lining paper.....	5d.	
Superior ditto	6d. and 7d.	
Bed-room papers, in great variety	8d	5d.
An excellent oak paper.....	8d	6d.
Sitting-room ditto, on blended grounds	7d. to	9d.
Hand-made marbles	9d. to 1s. 6d.	
Good satin papers	1s. 6d. to 2s. 6d.	
Flock papers.....	2s. 6d. to 2s. 6d.	
Rich gilt granites	9d. to 1s. 9d.	

Every novelty in French and English enamelled decoration always on hand; also excellent imitation of fancy woods.

N.B. Patterns sent into the country, by post, showing the style and quality of the above, on receipt of two stamps, and the goods despatched with promptitude on receipt of a remittance to the amount of the order given.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand painting, in papers for the decoration of the mansion. Borders, Pilasters, Centres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of Foreign and Continental Manufactures.

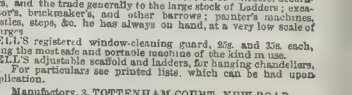
Machine Printing Works, Royal Mills, Wandsworth, Surrey; Block Printing Works, 451, Oxford-street, London.

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 23, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers..... from 4½d.	per yard.
Painted Marble, Granite, and Oak Papers .. from 6½d.	do.
Superior Dining and Drawing-room Papers from 11d.	do.
Satins and Flock..... from 2½d.	do.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decorations to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 500, OLD-STREET, where all goods can be obtained on the same terms as at the Factory.

GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 115, Whitechapel, near the Obelisk, and 500, Oxford-street.



NOISELESS RINGS.

GUTTA PERCHA CURTAIN & CORNICE RINGS.—These Rings have been much approved by the Faculty, particularly for nervous and aged patients. Owing to the peculiar properties of Gutta Percha, these rings do not make a noise when drawn along the pole or rod. The following sizes may be had, either with or without loops:—Sizes: 1 inch diameter, 1½ inch ditto, 2 inch ditto, 2½ inch ditto, 3 inch ditto, 3½ inch ditto.

TUBING, LINING FOR TANKS, ORNAMENTAL MOULDINGS, &c. manufactured by the GUTTA PERCHA COMPANY (Patentees), 18, Wharf-road, City-road, London.

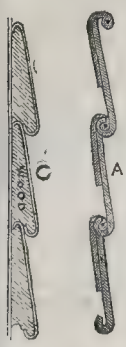
LADDERS, BARROWS, &c. for SALE or HIRE.—G. ELL invites the attention of builders, decorators, and the trade generally to the large stock of Ladders; excavators, brickmakers, and other barrows; painter's machines, trestles, steps, &c. he has always on hand, at a very low scale of charges

ELL'S registered window-cleaning guard, 2*s.*; and 3*s.* each, being the most safe and portable machines of the kind in use.

ELL'S adjustable scaffold and ladders, for hanging chandeliers, &c. For particulars see printed lists, which can be had upon application.

Manufactory, 3, TOTTENHAM-COURT, NEW-ROAD, opposite Hampstead-road.

PATENT DATED 9TH DAY OF OCTOBER, 1852.



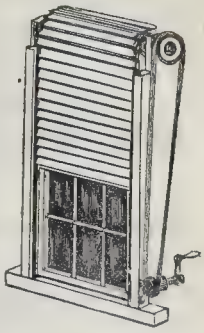
CLARK & CO.'s

NEW PATENT COMBINED IRON AND WOOD

REVOLVING SHUTTERS,

AND

IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.



The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section.
A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected together, and can be ROLLED EITHER WAY, greatly facilitating their application.
C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the laths to split and combining the lightness of wood shutters with the durability and appearance of iron.
CLARK and CO have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwellings use, thereby saving a large item in their cost the fixing; and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the wholecan be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.

IMPROVED DRAWN BRASS SASH-BARS AND STALL-BOARD PLATES.

ENGRAVING IN THE FIRST STYLE OF WORKMANSHIP.

PROSPECTUSES, ENGRAVINGS, AND TESTIMONIALS FORWARDED, ON APPLICATION TO

CLARK & CO. ENGINEERS,

PATENT SHUTTER WORKS, 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

NO. 18, CURSITOR-STREET,
CHANCERY-LANE.

SANDS and EMERY,

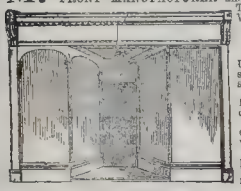


Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.



Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation.
By inclosing a postage stamp, a full List of Prices will be returned.

M. late THOMAS WARD, SASH and SHOP
FRONT MANUFACTURER and JOINER to the TRADE, 198, Upper Whitecross Street, St. Luke's.
Established 1839.

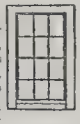


Upwards of 200 good seasoned doors in stock.
Workmanship and Materials of the best description.
Estimates given for every description of work.
By enclosing a postage stamp a full list of Prices will be returned.

CHARLES WM. WATERLOW,



Manufacturer of Sashes and Frames, and Joiner to the Trade,
121, Bunhill-row, Finsbury-square.
Well-seasoned materials, superior workmanship, lowest prices.
Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.
Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.
N.B. This establishment is worth the notice of all engaged in building.



REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 99, Regent-street, and at his Steam-works, 133, Old-street. These shutters have fully borne out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to noblemen whose mansions are fitted herewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

FISHER and MILLS (late Shop Foremen to Messrs. Lawrence and Sons), JOINERS to the TRADE, 70, York-road, Lambeth. Shop-fronts, fittings, staircases, &c. Well-seasoned materials, and superior workmanship at the lowest possible prices. A quantity of doors and sashes always in stock. By inclosing a postage-stamp, a full list of prices will be returned.

LEONARD SUGDEN, Manufacturer of Doors, Sashes, and Frames, and Joiner to the Trade, 59, Grange-road, Bermondsey, respectfully invites builders, and the trade in general, to an inspection of his STOCK of GOODS, from which they can always be supplied with every kind of joiners' work, which for superiority of workmanship, material, and low prices, will be sure to give the greatest satisfaction.
P.S. A full list of prices may be had on application.

G. CAPRON and SON, Joiners to the Trade, beg to inform Builders and others that they are enabled to supply them with Sashes and Frames, Doors, and Joiners' Work of every description, at prices that defy competition. A List of Prices may be had on application to G. C. and Son, 24, Northampton-road, Clerkenwell.

WINDOW BLINDS of every description, and superior make; WIRE WORK of all kinds, useful and ornamental; Garden Fence, Flower-stands, and Bird-cages in variety. Aviaries fitted up, &c. &c.—W. RICHARDS (late Coupland), Wire-work and Blind Manufactory, 370, Oxford-street, opposite Princess's Theatre.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 9d.; best holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

BUNNETT AND CO. ENGINEERS AND FOUNDERS,

26, LOMBARD-STREET, LONDON, AND DEPTFORD, KENT,

ORIGINAL PATENTEES OF REVOLVING IRON AND WOOD SHUTTERS

AND OF THE

NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER,

For which the PRIZE MEDAL of the GREAT EXHIBITION of 1851 was awarded.

BUNNETT and CO. are also the ORIGINAL PATENTEES and MANUFACTURERS of

DRAWN METAL SASH-BARS, FOR SHOP FRONTS, SKYLIGHTS, &c.

MOULDED BRASS STALL PLATES, INTERNAL AND EXTERNAL BRASS FITTINGS,
And Cast, Drawn, or Stamped Metal Work of every description.

BUNNETT and Co. invite comparison, and challenge competition, either in Style, Quality, or Price.

GENUINE SEYSSEL ASPHALTE.

ORSI AND ARMANI.

THE EXCLUSIVE SUPPLY OF SEYSSEL ASPHALTE (FRANGY) DIRECT FROM THE MINES.

REDUCTION IN THE PRICE FOR VARIOUS WORKS FIFTEEN PER CENT.

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WORK GUARANTEED FOR THREE YEARS.

Offices, No. 6, Guildhall, Basinghall-street, City.

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PATENT METALLIC LAVA.

A printed List of the important Works for Flooring, Roofing, Covering of Arches, &c. &c. executed from 1848 to 1852, with this Material, may be obtained at the Office.

PATENT METALLIC LAVA IS FIFTEEN PER CENT. CHEAPER

THAN

THE GENUINE SEYSSEL ASPHALTE OF MESSRS. O. AND A.

OR THIRTY PER CENT. LOWER THAN ANY OTHER MATERIAL CALLED BITUMEN OR ASPHALTE.

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METROPOLITAN MINERAL ROCK ASPHALTE COMPANY.

OFFICES .....No. 13, BEAUFORT-BUILDINGS, STRAND.

DEPOT .....NORWAY-WHARF, MILLBANK-STREET, WESTMINSTER

MANUFACTORY, ROTHERHITHE.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, &c.

In consequence of Claridge's Patent for the Mineral Rock Asphalte having expired, this Company is formed for importing and supplying the public with genuine Mineral Rock Asphalte, for Roofings, Floorings, Cementing of Brickwork, &c. &c. The Company having concluded favourable terms with the proprietors of the mines, and as their works are now in operation, they are prepared to Contract for Work to any extent. This Company's List of Prices shows a great reduction from those of any other Importer, and only a small per centage beyond those compositions termed Metallic Lava, or Bitumen.

A Guarantee is given for work executed by this Company for five years, free of any expenses. Particulars and lists of prices may be had, and samples seen, at the Offices of the Company as above.

GEO. BROUGHTON, Manager.

NOTE.—Mr. BROUGHTON, for many years with Claridge's Mineral Rock Asphalte Company, of Stangate, near Westminster Bridge, having accepted the Management of this Company's Works, the public are respectfully informed, that by favouring this Company with any orders, they may fully rely on having the Genuine Rock Asphalte as imported from the original mines; and all works will be carefully executed by workmen of long experience, and in the very best possible manner.

CHEAP, LIGHT, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT, has been extensively used and pronounced efficient, and particularly applicable for warm climates.

1st. It is a non-conductor.—2nd. It is portable, being packed in rolls, and not liable to damage in carriage.—3rd. It effects a saving of half the timber usually required.—4th. It can be easily applied by any unpractised person.—5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.—6th. Under slate, metal, or tiles, it is a most effective non-conductor.

INODOROUS FELT, for damp walls and for damp floors, under carpets and floor cloths. Price ONE PENNY per Square Foot.

CROGGON and CO.'s PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c., and
DRY HAIR FELT, for Covering Steam Boilers, Pipes, &c., preventing the radiation of Heat, saving 25 per cent. of Fuel, and deadening Sound.

Samples, testimonials, and full instructions, on application to CROGGON and CO. 2, DOWGATE-HILL, LONDON.

ASPHALTE.—GERVASE FOOTTIT, Trinidad Asphalte Works, Rotherhithe; established 1834. Every description of Flooring laid with the above durable material in the best manner. Asphalte for Railway Arches, 35s. per ton. Importer of Trinidad Asphalte.
Shipping Depôt, Devon Haytor Wharf, Rotherhithe.
G. H. CLARK, Agent.

PAVING, 2s. 9d. per SQUARE YARD.—Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN FILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, MONUMENT CHAMBERS, 14, FISH-STREET-HILL.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

THE ARCHITECTS', BUILDERS', and CIVIL ENGINEERS' DRAWING CLASSES, Conducted by THOMAS J. HILL, Architect. Offices, 19, Helmet-row, Old-street. Morning Classes, Eleven till Four; Evening Classes, Six till Nine, or Seven till Ten (Saturdays excepted).

The Architectural Department comprises the preparing Plans, Elevations, and Sections, together with the Working Drawings in every style, both Ecclesiastical and Domestic; Geometry, Perspective and Ornamental Drawing, as applied to cabinet-makers, upholsterers, and decorators; the Principles of Light and Shadow, illustrated by models; the getting up finished Drawings of Elevations and Interiors, both Ecclesiastical and Domestic.

The Civil Engineering Department comprises all descriptions of Bridges, Aqueducts, Tunnels, &c.

A Special Class for Architectural Colouring three times a week.

Terms, with detailed prospectuses, to be had on application.

A New Class will be formed on the 19th inst. for the Measuring and Valuing of Artificers' Work.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories. Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 200 feet ..... £1 16 6 } In sizes 40 by 30.
" 300 feet ..... 2 14 0 } to 43 by 31.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 28, SOHO-SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION OF Glass, now manufactured at WHOLESALE PRICES.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD STREET.

FOREIGN SHEET GLASS, packed in 200-feet Cases, 34s., 38s. and 38s. per case.

Patent Sheet Glass,
in sheets of 48 by 36, 32 by 28, per crate of 300 feet.

GLASS TILES,
½ of an inch thick,
packed in cases containing 50—32. 5s. per case.

JAMES PHILLIPS AND CO.
116, Bishopsgate-street Without.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossed and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square. Cash only.

PLATE GLASS.—What adds more to the adornment of a house than by glazing it throughout with Plate Glass? It is not only the most pleasing to the eye, but the most economical; for this reason,—the first outlay is the last. Its lovely brightness and the flattering cheerfulness it throws upon all around should be a consideration. Who would not purchase such pleasurable at a nominal price? The great reduction of late brings it within the reach of all. CANGER II, Interior Decorating Manufactory, 399, Oxford-street. Estimates free of charge.

CRYSTAL GLASS CHANDELIERS for GAS and CANDLES, of the newest and most beautiful design. Messrs. Osler having for many years directed their particular attention to the manufacture of this class of articles, with confidence solicit an inspection of their stock. Purchasers can select from a great variety of patterns, to which additions are constantly being made—44, Oxford-street, London: manufactory, Broad-street, Birmingham. Established 1807.

BRITISH and FOREIGN WINDOW-GLASS WAREHOUSE, 30, Princes-street, Leicester-square.—Established 1793.—ROBERT METTAM begs to call the attention of builders and the trade to his present low prices of glass of every description now manufactured.—Estimates and price-lists forwarded upon application as above, post free.

TO BUILDERS, PLUMBERS, HOUSE AGENTS, &c.

JAMES MILES'S BRITISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, CHURCH-STREET, SHOREDITCH, a few minutes' walk from the Eastern Counties Terminus.

J. M. respectfully calls the attention of the trade to his stock of ROUGH PLATE, which may be had of the following thickness:—¼, ⅜, ½, ⅝, ¾, and 1 inch. Also CRATES of C.C.C. 30s.; C.C. 35s.; cases 40 by 30 of 200 feet, 34s.; ditto of 300 feet, 39s.; 14 to 16 oz. glass in crates, 9½d. PER FOOT; 16 to 18 oz. in crates, 9½d. PER FOOT. Sheet lead, pipe, plumbers' brass-work, closet-pumps, basins of every description. White lead, oils, colours. Extensive assortment of PAPER-HANGING of the newest patterns always on hand, at prices from 4½d. per 12 yards. SASHES PRIMED in oil and glazed, in any quantity, with promptitude, at very low charges. The full price given for OLD LEAD, or the same taken in EXCHANGE.

TO BUILDERS, AND THE PUBLIC GENERALLY.

J. DENNIS, 1, Charles-street, St. John-street-road, Northampton-square. Sole Inventor and Maker of ADHESIVE GLASS LETTERS for shop windows, fascias, lamps, &c. &c. gold, silver, ruby, blue, green, orange, &c. &c. Builders and the Trade supplied on liberal principles.

CAUTION.—The Manufacturer of CHAPPUIS'S PATENT DAYLIGHT REFLECTORS begs to caution the public against certain parties circulating cards, wherein they falsely represent themselves as from his establishment.—16, St. Mary-axe.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 11½, Fore-street City, Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.

Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS THOMPSON, Agent.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.

The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Agnes, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Hurr and Sprung, and all other Stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bancor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulins let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others, that he continues to supply the Box-hill Ground Stone, Corshamdown, Coombedown, and Farleighdown stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS,

BATH.

(DEPOTS.)

Great Western Railway Station.... PADDINGTON.
Great Western Railway Station.... BRISTOL.
Hope-street, Mount-pleasant ..... LIVERPOOL.
Castle-fields ..... MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

BRENT MOOR GRANITE QUARRIES, SOUTH DEVON.—W. TUCKWELL begs to inform Architects, Engineers, and Contractors, that he is prepared to SUPPLY any quantity of GRANITE from the above quarries.—Apply to W. TUCKWELL, at the Depôt, Norway-Sufferance-wharf, Greenwich, where a stock for immediate use is always available.

Offices in London, No. 3, St. Martin's-place, Trafalgar-square.

CAEN and AUBIGNY STONE.—F. DUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy. Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

BOX WEATHER STONE, of best quality, SCALLETT BLOCK, &c. &c. supplied direct from the Quarries by ROBERT STRONG, Quarry Proprietor and Stone Merchant, Box, Wilts. The great durability of the Box Ground Stone, without admitting the most intense frost, renders it a desirable stone for all external building purposes. Orders to any extent immediately attended to. Depôt, Box Station, Great Western Railway where an extensive stock is always kept. Every description of Stone Work both plain and ornamental, prepared ready for fixing. Ashlar Rag-work, Walling Stones, &c. &c. always on sale. Vases in elegant variety, URNS, FOUNTAINS, CHIMNEY PIECES, &c. &c.—Box, Wilts, March 10, 1853.

THE PIMLICO SLATE-WORKS.

Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a few examples sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—30 and 40, Upper Belgrave-place.

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The Builder.

SATURDAY, APRIL 23, 1853.

WE have reason to be satisfied with the impression which is being made, not simply in the metropolis, but all over the country, by our account of London dwellings, and we may fairly anticipate improvements in consequence. Some of our readers have said to us,—"Your statements are too truthful, too minute, and they give us pain." We regret to be forced to give pain: what we have seen and what we have written have caused more grief to ourselves than to our readers; but the necessity is so great, the duty, as it seems to us, so imperative, that we cannot yet either pause in our course or change it. It is time the whole truth were known: it is time that "improvers" were made to feel strongly that when they knock down houses occupied by the poor in the neighbourhood of their "work," drive them forth, and do not provide other habitations for them, they must necessarily increase the evils of overcrowding already in operation, and are guilty of wrong-doing.

We do hope, too, to do something towards removing prejudices on the part of the lower classes, which stand in the way of amelioration, —the prejudice, for example, which would lead the occupants of a single room, ill-ventilated and over-filled, to retain the body of a deceased relative amongst the living rather than deposit it in a fitting reception-place, to wait the appointed time for burial. The feeling which prompts it is a holy one: far be it from us to depreciate it, still less to scoff; but duty must overweigh feeling: the living have a stronger claim upon us than the dead.

A startling example of the practice came before us the other day, when, opening a cupboard in a miscrable room in the neighbourhood of Gray's-inn-lane, we found, shut up with the bread and some other matters, *the body of a child*, without a coffin, but decently disposed. The child had been dead a week: on one of the shelves was its little mug, marked "Mary Ann," with some broken crockery. The man's wife had died a few weeks before, and had been kept in the same room fourteen days amidst a family of children. The opponents of legislative interference in such cases should reflect on the wide injury to health committed by this permissive poisoning, to say nothing of its effect on the character of the people. We had prepared a sketch of the closet, but its aspect was so painfully repulsive that we have withheld it. Truth is often less truth-like than fiction.

Let us leave this part of our subject and walk to *Drury-lane*. Throughout a considerable portion of Drury-lane, Wych-street, Holywell-street, and even the great thoroughfare of the Strand, there is no sewer, and, consequently, the inhabitants are obliged to submit to the infliction of cesspools under many of the houses, causing (particularly in crowded courts) the greatest damage to health. In Wych-street and Holywell-street many of the houses are of considerable antiquity, and although, in some instances, inhabited by improper characters, are not so overcrowded or so neglected (except in the matter of drainage) as to require particular notice. In Newcastle-street, and the places adjoining—Drury-court and the narrow lanes leading from it—the houses are in decent condition, and have, by means of an association formed amongst the inhabitants, been freed from many troublesome inhabitants: the same may be said of Craven-buildings, Feathers-court, White Hart-street, and others.

Nag's Head-court, formerly Wellington-court, on the eastern side of Drury-lane, is entered by a narrow passage: this court extends a considerable distance, and contains several houses which are let in single rooms to different families. These houses are the property of a jobbing builder, who has himself put them into good repair: he has also been careful not to let the rooms to such persons as would overcrowd them. The court is now well paved, and everything is in fair condition, except the drainage, which is out of his power, and is miserably bad. It was reported on as such by Mr. Walker thirteen years ago, and remains very nearly as it then was. Fever has been a frequent visitor to this part of Drury-lane, and the cholera of course found it out. There are several courts and long lanes of this description in Drury-lane, the rent of a single room in which varies from 1s. 9d. to 2s. and 2s. 6d. per week. Many of these houses and those surrounding them are occupied by persons who obtain their livelihood at Covent Garden market. In the direction of Covent Garden market, Crown-court, Rose-street, and other places in the vicinity are unhealthy and much neglected. From Long-acre to the main street of St. Giles's the lanes and courts are occupied by numbers of poor Irish, costermongers, foreigners, and persons of loose character, and, as might be expected, the houses are dirty in the extreme. Near the top of Drury-lane, on the west side, are some ancient wooden houses, now occupied as cowsheds. On the opposite side of the street, with an undertaker's shop placed most ominously at each side of the entrance, is a place called the Coal Yard: at some distance down this place, on the right hand side, is the following rudely-painted notice:—

Old Original
*Oyster, depo^*
Live and Let Live.

Having passed the oyster-shed of this cosmopolitan worthy, who has expounded the above very proper sentiment, although he could not call his oysters to prove that he follows his own teaching, we came to an archway, under which was a large collection of stable and cow-shed refuse: and having with difficulty managed to pass this miry spot, discovered a narrow place called King's Arms-yard, containing at least a dozen houses on the two sides, erected with a sort of gallery in front over stables. In this place were several cart-loads of refuse, similar to that already described. The smell and appearance of the place were shockingly bad. The daintily-dressed lady in the blue brougham now standing at the corner, scarcely guesses her proximity to so much "dirt" and distress, though the nice face looks well-disposed to pity and give aid, if aid were practicable. The rooms are much out of repair. For one, in which we found a man and his wife and five children (supported by the sale of flower papers), the rent is 2s. 6d. a week.

Within a stone's throw of this very spot the Great Plague of 1665 first broke out in London. It is distressing that, in spite of cautions and advice, though nearly 200 years have elapsed, this neighbourhood should still be allowed to be a harbour for fever and other epidemics. Dr. Sutherland, in his cholera report of 1848-49, writes,—"Suffice it to say that cholera, true to the laws by which epidemics are governed, followed the usual tract of the fevers by which Edinburgh and Leith are scourged, locating itself in the same filthy closes, occupying the same ill-ventilated and over-crowded tenements, not unfrequently carrying off its victims from



WEAVER'S ROOM, SPITALFIELDS.

the selfsame rooms which its fatal ravages nearly depopulated in the epidemic of 1832."

Fever is rife in this neighbourhood: on the Sunday before our visit, four bodies were taken from Wild's-buildings; and we heard a little girl quietly advising another child not to go into a certain passage, lest she should get the fever. Although the houses about here are dirty and ill-drained, they are in tolerably good repair. The waste of life and increase of pauperism in this neighbourhood are very great, to a great extent caused by the want of cleanliness and the ill arrangement of the dwellings. The correctness of this statement is shown by the contrast in the health of the lodgers in the model lodging-house for men in Crown-street, which has been opened for six or seven years, with that of the general neighbourhood. This place was altered to its present use by the Society for Improving the Dwellings of the Labouring Classes; and it is gratifying to find that even in this neighbourhood the benefit of well ventilated lodgings is properly appreciated. The house contains eighty-two beds, a large sitting-room or kitchen, accommodation for washing, a small library, &c.: the charge for lodging here is 4d. per night, or 2s. a week: many of the lodgers have resided here for some time, one so long as five years. The manager of the place says, that there are never fewer than seventy-five lodgers each night, and that generally all the beds are occupied. When the cholera was carrying off people on all sides, there did not occur here a single case; and scarcely any illness has happened in it since the opening of the building which required hospital care.

"From dirt comes death:" there is no mistake about it, and the oftener this assertion is repeated and the more universally it is impressed and acted on, the better for the world. That we may not seem to overlook what is really being done in the path we are pointing out, we will revert here to the meeting which was held the other day, by the Society for Building and Improving the Dwellings of the Working Classes, to lay the chief stone of a set of buildings at the back of the brewery in Broad-street, Golden-square, a miserable neighbourhood described in our first paper. These are to consist of eight double houses, each house to have accommodation for eight families. Each family will have a living room, 14 feet by 14 feet; two bed-rooms, each 14 feet by 12 feet; coal cellar, sink, and pantry. The houses are to be, to a great extent, fire-proof, having stone staircases and brick walls throughout. Each house is to have two large rooms fitted up on the basement floor as washhouses with coppers and sinks. There are proper receptacles for dust, which is removed from each set of apartments by a trunk formed in the wall: each room is ventilated by a shaft running from the bottom to the top of the house, and water and gas are to be laid into each set of apartments.*

It is an interesting sign of the times to find two young men of fashion, Lord Ingestre, who originated the society, and Sir James Fraser (both guardsmen, too, if we are not much mistaken), active in this cause.

Continuing our walk, we pass Church-lane, the remaining portion of St. Giles's Rookery; but this has been so frequently described, that it is unnecessary to enter into particulars. It is still a sad place, and is occupied by the worst characters. We would direct attention to places less known, but which in their way are equally pernicious.

When we were in the Bishopsgate district, we made an examination of the houses occupied by the weavers in Spitalfields, and gathered some information concerning them which will interest our readers, but we must reserve it for another opportunity. The distress here is very great, and although the houses are for the most part in better condition than some we have described, and the weavers a respectable class of persons, the close crowded rooms in which they work, with other local causes in operation, produce illness and shorten life. On the other side, we give a sketch of one of the rooms we entered, where the father and mother were continuing their midnight toil amidst the sleeping children spread about the apartment.

They were at work on white watered silk for wedding dresses!

In one room we found a scene which had been described by anticipation:—

"A poor worn weaver there works for his bread—
Working on, working on, far in the night;
His daughter breathes hollowly, lying a-bed,
And the wasting clay
Lets the spirit play
Over her face with a flickering light!"

"But the loom is stopped; and down by the bed
The father kneels by his dying child;
But vainly he speaks—her time is sped;
No answer there comes to his outcry wild,
For the child stares out with her glazed eyes,
Till the eyes turn back—and she silently dies!
And they call it a Fever,
Putrid or low;
But I and the weaver
Both of us know
That the fetid well-water, and steaming styes,
And the choked drains' gases, that unseen rise,
Subtle and still,
Sure and slow,
Certain to kill
With an unheard blow,
Are the fiends who poisoned that maiden's breath,
And cling to her still as she sleeps in death!"

We must end for the present, satisfied with asserting that as you lead men and women to appreciate cleanliness, light, air, and order, you make them better citizens, increase their self-respect, and elevate them in the social scale. By the miserable dwellings to which thousands in this and other great towns are condemned, we are educating them *downwards*,—an easy process, with frightful results. It cannot be too often repeated, that the health and morals of the people are regulated by their dwellings.

A JANGLE ON BELLS ARCHITECTURAL, BY A LOVER OF DAY-DREAMS.

JANGLE THE EIGHTH AND LAST.* —— &c. AND CONCLUSION.

At different times, and in different places, Pacifera paid me many other visits, besides those which I have heretofore so imperfectly recorded; yet of those visits I have nothing to relate; not but that they have left memories behind them, or that I found them unprofitable, or dull; but for three other reasons,—namely, inability, laziness, and procrastination. For it is often a most disagreeable thing, when we have experienced anything peculiarly pleasant, even to be obliged to talk about it. There are certain enjoyments which you wish to have entirely to yourself; and if, as I said before, of such things it is disagreeable to be compelled even to speak,—how much more so to be compelled to write! Again, as day-dreams are, after all, necessarily undefined, formless, and, in fact, what their name expresses, to put down in black and white even their general character is often a difficult task, and certainly an unpleasant one; for the very attempt, and the bustle ever attendant upon collecting materials for writing, the badness of the pens, the thickness of the ink, and the thousand-and-one other generally-experienced annoyances, have the effect of making you most thoroughly awake, and so dissipating, if not the very remembrance of the dream, at least all its peculiar charm of mysticism; for so fragile a thing and tender is it, that it will hardly bear handling; and yet handled it must be, and held in the light, and subjected to much examination, before it can be written about. So, indeed, I plead guilty on these grounds to procrastination and laziness, in committing to paper some record of many pleasant visits, which, for want of such record, have subsided almost entirely from my memory; yet I am comforted in this, by the recollection that Pacifera, in paying me her farewell visit, gave me pleasant words and pleasant looks, and her parting was untinged with reproach. And if she reproached me not, what care I for harsh words from any other?

It was thus that in her last visit she spoke: "Farewell! and if I tell you that I grieve to pronounce this word, believe me I do but speak the truth, and yet it must be so indeed. Seek not to know the reasons,—they are manifold, and cannot be revealed. Perhaps I wish to see how well you can proceed without my guidance; perhaps I am compelled to take this course by some power superior to my own. Well, let that be as it may, it is unimportant, after all, that you should know. But now, before I leave you, in the few minutes that yet are left me, suffer me, even at the risk of recapitulation, to direct your attention to two or three things necessary to be borne in mind and observed continually, if you desire to attain any pitch of excellence in your vocation.

Of these, the first which I would wish to inculcate, is the need of a belief in that art which you practise, believing not only that it is a good thing and worthy of your own devotion to it, but striving in your zeal to persuade the rest of mankind how noble, and how useful, and exalted it indeed is, and with what rich and excellent fruit it would repay the world, would they zealously follow it, not merely for amusement and at spare times, but continually, earnestly, and, indeed, if necessary, sacrificing much for it. Your mission is to spread abroad the knowledge of the beautiful; and though it may be far better to effect this by your works than by your words, yet if works are denied you, think not that you are cut off from usefulness: a word spoken in season is a good thing, and may perchance be heard to the end of time; therefore let nothing hinder you in your career, or put a check upon your strenuous exertions, for the more earnest you are, and the deeper your own belief in the value and excellence of beauty is, the more will men be inclined to listen to your teaching, and to abide by your words; and, on the contrary, if they suspect your love to be shallow, or based upon false grounds,—if they see the sneer of unbelief upon your face, it is not very far that they will go with you, nor very many proselytes that you need hope to gain. Nor, indeed, even with respect to yourself, can you meet with success, or attain to any height of excellence in your profession, if your faith in it is failing or weak: you must earnestly, and with your whole heart, believe not only that the pursuit of beauty is worth the devotion of a life, but you must also believe that your art is a good exponent of that beauty, and may be made a means of teaching its value to the rest of mankind, and of leading them, at least occasionally, out of themselves and the dull round of every-day life, and lifting them for a time some little way above this dreary world, and all its wretched ways of vanity, to things purer and more excellent, to that shadow of heaven, cast still in mercy, on this troubled earth.

And, coupled with your belief, you must have love, or it will be but of little value; for though it might be possible that some might believe in beauty, and accord to her, at least in some measure, the high position that she holds, simply through calm reflection and mathematical deduction,—sitting all the time by their own fireside,—yet such belief as this deserves not so much as mention by the side of the warm heart-springing creed of love,—the zealous and ardent belief of those who have received it neither by reasoning nor argument, but under the shadow of mighty trees, and on the banks of clear-running rivers,—a love that is warmed into new life by the first glad rays of the rising sun, refreshed with the balm of evening dew, or strengthened and enlarged by those wondrous scenes, when wrapped in brightest glory, and bathing all things with his effulgence, the sun sinks slowly to his appointed rest.

And this love must be, not merely enthusiastic, and spurring you ever onwards, but also it must be deep and lasting, flowing in a calm though strong current, giving you patience to bear all the reverses of fortune, and chills, slights, and neglect which may probably be cast upon you; so that, untouched and unruffled by

* The contract for the whole is 10,000*l*. The contractor is Mr Bates, the architect Mr. Chas. Lee. The site is well suited for the purpose, having four frontages to streets, and being in the midst of a very poor neighbourhood, where the example of better dwellings is hoped to be effective in promoting improvement.

* See p. 241.

all these things, you may stand firm in the midst of conflicting opinions, and holding fast by this anchor, escape the fatal shipwreck by which so many are destroyed. And if ever you feel this love decaying or growing weak,—if you fear that your heart is not so fervent in its devotion, nor your eye so single as in days gone by, search out with diligence the cause; and go to nature, that new life may be awakened in you, and that you may recover the ground that you have lost; and in doing this make no delay, for procrastination may be fatal; the death steals gradually and at first is hardly perceptible, but the more insidious the advance, the more fatal is the result; and the only way to guard against it is by keeping constant and untiring watch over yourself, not suffering anything to lull your vigilance to sleep, or to draw you off your guard.

I have said, go to Nature whenever you fear this; yet not alone then, but, indeed, at all times: take her for your guide and counsellor; seek to understand her teaching; trust in her, and permit nothing but what her laws will sanction. Let her name be ever on your lips, and her power ever present in your heart, assured that if you do not love her, to excel in art can never be your lot; the test of that matter is not in you.

Alas! how many there are to whom she is still a sealed book, even among those who profess to follow art; who study works by men of olden time, forgetting that these very men attained their height of excellence, not from studying the works of man, but by contemplating nature.

Now, once more, farewell! I go, perhaps, for ever: from a mighty kindred was I separated to hold discourse with you, and now into their ranks I again retire: I have said 'a mighty kindred,' and so they are, indeed; for men in earliest ages loved our accents, and till the end of time our sounds shall still be heard with gladness and thanksgiving. To you it is granted even now to see passing in vision before you some shadow of those with whom we have companied; of those with whom the 'yesterday' and the 'to-day' of our life have been spent: the 'to-morrow' who shall determine?"

Then, as she ceased from speaking, the room and all things in it faded from my view, so that I sat gazing into, as it seemed, a boundless space, filled with misty light, out of which there arose a confused murmur, like the distant roaring of the troubled sea; loud and plainly it might be heard at first, but presently it ceased very nearly, so that I could faintly hear the pleasant sound of distant bells tinkling with a low, soft cadence, as though evening breezes were gently wandering among and playing with them; then as a fuller burst of the delicious melody, borne along apparently by spice-laden and perfumed winds, fell upon my expectant ear, the shadows of a mighty nation passed slowly before me; kings and priests and warriors, poets, philosophers, and statesmen, met and mingled in that vast and mighty crowd; old men with hair of snow and tottering footsteps were journeying in the midst of joyous children; nor were there wanting the free and ardent looks of youth, but troops of maidens glided by with songs and dances, and youths joining in manly games, full of life and vigour; others walking quietly by themselves, dwelling in a world exclusively their own, with their every thought and feeling given to the worship of the God of Love: then would mingle in the crowd the calm, queenly faces of high-born matrons, conscious of their dignity and their deserts; and then—but how can I enumerate the whole, or tell one-half of what I saw, as that concourse passed along, some with looks of bright and ardent hope; some placid in the strength of firm reliance, and some with the sorrowful smile of those who, in full consciousness, bravely go forth to meet an inevitable fate? Thus they moved along, while all the time the bells were sweetly sounding, not in bold and stirring peals, but as at first, gently and pleasantly, and yet with all the pleasant melody, such strange sad sounds of heavy woe were commingled, that it filled me with dismay as I listened, though I could not understand it till I saw, when those shadows had all died away, a "low, large moon," whose faint light rested on countless numbers of upheaved tumuli, some far away in the quiet country, and others on the "white sea shore," where the restless waves, as they toss themselves upon this sandy barrier, are ever murmuring a *requiem* to their still inhabitants.

Again another pause, and then a distant sound arose, like that of many instruments mingled with hymns of praise; and still more softly than before, I could discern the faint and just heard sound of holy bells; and with that harmony there came a vision of things too deep and great for pen such as mine to write; but a people rose before me, dwelling in a land of milk and honey, from whose sloping vineyards arose songs of mirth and sounds of gladness; and in the midst I saw a glorious city, sought out of all the nations of the earth, and many flocking thitherward to hear and see the wisdom of the heaven-gifted man; and I saw scenes of triumph where thousands fled before the voice of one; and distant nations trembling at the very name of this strange people, whose lot seemed cast in perfect peace, as they sat each under the shade of his own vine and fig-tree; yea, so peaceful did they seem that my heart failed within me but to see the fulness of their happiness: yet as I listened, sounds of sorrow were mingling with the murmur of those golden bells, and louder and louder did the wailing yet arise, till the whole air rang with grief, and then I saw that people go astray; and I beheld the pestilence creep along their land, smiting into the dust their noblest and their fairest, yet they returned not from their evil doings, and hostile nations poured their hosts into that fertile land, but still they would not repent; and then I saw the smoke and flame of their glorious city ascend into the height of heaven, while the awful light revealed thousands of old and young, the unhappy remnant of that once-favoured people, going forth into their long captivity.

So these passed away also; yet, long after they had all disappeared I could still hear those sounds of grief, till at last they also died into silence; and then arose scene after scene: at one time crowds of worshippers would kneel before some shrine, while deep-toned bells were calling others to join in their devotion; then changing their accents to hurried, startling notes, sounding a dread alarm, their cry brought visions of cities, startled in the dead of night, from their repose; and echoing to the trumpet call, the sound of warriors arming themselves for battle, and the sad cries of maidens, parting, perhaps for ever, from those they loved; then perhaps the note would change to one dull moan, the mourning of some devastated city, in whose streets the plague had held its banquets and prolonged its orgies, till straggling weeds had shot up in the once busy market-place, and ships and boats were rotting slowly in the still harbour, undisturbed by plash of oar or voice of seaman.

Many other scenes there were: now of hot climates, where the shadows fall at noonday; then of perpetual snows, glittering in the calm moonlight; but in all, however peaceful they might for a time seem, yet in all were mingled sorrow, and wrath, and care: unlike in other things, each vision was the same in that. But, last of all, there arose a fearful and confused noise, rolling of distant thunder, and moaning of restless winds, and shattered clouds racked rapidly across the troubled sky; yet in every pause could I hear the murmur of a peal of bells, better far than any I had yet heard, and with sound of such strange power, that I strained to hear their heavenly voice again in the increasing tempest; nor did I strive in vain, for though the whirlwind had redoubled in its strength, and the thunder pealed ceaselessly, and the elements united in one swell of rage and discord, yet amongst all and above all, clearly, like messengers of heaven, pealed those wondrous bells; and then I saw the dark clouds breaking, and in the east a streak of light appeared; then as the wind gradually hushed and the thunder ceased, and slowly every wrathful cloud withdrew, louder and sweeter yet rang out those heavenly bells,—sweeter and better still continually, as slowly the sun arose on a scene upon whose blissfulness and peace mortal eyes have surely never yet rested. There was no sound of sorrow there, nor cry of pain, nor throb of grief but every tree and flower sang of peace, and birds were joining in that universal hymn, and the sky was all untroubled and serene, and the wind just played among the graceful leaves, as they sparkled in that purest sunlight; so that I could not longer bear the sweetness of the vision, but crying, "Oh! when shall all this be?" I woke, and lo! I was once more alone.

ON THE METHODS OF PAINTING UPON GLASS.

AT a meeting of the Royal Institute of British Architects on the 7th ult. Mr. Charles Winston gave a popular explanation of the methods of painting upon glass, in the course of which, after adverting to the folly of those who supposed that nothing was good in painted glass which was not treated in the style of "the ages of feythe," and perplexed themselves with the illogical conclusions that "a glass painting ought to be flat in effect, because the material of which it was composed had a flat surface,"—that "an indistinct outline argued a lax morality,"—or, that "it was wrong to represent human figures in a painted window, because light could not pass through the opaque bodies of men and women," &c.; and stating as his firm conviction, that, if even the most rudimentary instruction in the principles of art were superadded to an ordinary University education, many glass paintings, such as are now highly admired, would not be tolerated at all;—he proceeded to mention that two kinds of glass—white and coloured—were used in glass painting; and that the latter kind was coloured either throughout its entire substance, as was the case with "pot-metal" glass, each sheet of which was composed of glass tinged with some kind of colouring matter; or else was coloured on one side only, as was the case with "coated" glass, each sheet of which was composed of white glass, covered on one side with a coat of pot-metal glass. That both white, pot-metal, and coated glass, were made in the glass-houses, and sold to the glass-painters as the raw material of which glass-paintings were made,—a consideration which exposed the popular error that the colours of foreign glass-paintings were necessarily better than our own—the truth being, that the market for the raw material was open to all men alike. That glass made abroad was imported, and used by the English glass-painters, just as it was possible that English glass, of superior quality, would be exported and used by foreign glass-painters; whose superiority hitherto over their English contemporaries depended, not on the quality of the glass they were able to obtain, but on their greater artistic skill in using it. That those who were inclined to pursue the subject of glass-making farther (and that without some knowledge of glass-making, it was not easy to account for some of the conditions of glass-painting,) would find an interesting summary of the various processes in "The Reports of the Juries, Exhibition, 1851," p. 525; and that the process now usually adopted in the formation of window-glass, the cylindrical process, was that minutely described in the oldest work we possessed on the subject of glass-making, the Treatise of Theophilus, said to have been written in the tenth century, and which could not have been written later than the twelfth.

That such being the nature of the raw materials, of all or some of which every glass painting must be composed, there were three modes of proceeding open to the glass painter. That under the first mode, which was likewise the earliest, since it was exactly described in the Treatise of Theophilus, and continued exclusively in use until almost the middle of the sixteenth century, the local colouring of the picture was effected by using pieces of white and coloured glass, upon which the outlines and shadows were painted with an enamel colour called enamel brown, which was made to adhere to the glass by exposure to heat in a kiln. That this process, which might, for convenience sake, be called the Mosaic system, bore (as Mr. Winston had been informed by an eminent artist) considerable resemblance to the ancient mode of fresco painting, in which the local colours were first laid on, and the picture was afterwards

completed by the addition of shadows and outlines with a black colour.

That under the second mode, which, however, did not come into use until the latter part of the sixteenth, or the early part of the seventeenth century, white glass alone was used for the foundation of the picture, the colours, as well as the outlines and shadows of which were painted on such glass with enamel colours, and fixed by the operation of the kiln. This might be called the enamel system. And that under the third mode, which, in truth, was a combination of the two former, though introduced a little before the last, and dating as far back as the middle of the sixteenth century, the local colouring was produced, partly by the use of coloured glass, partly by the use of enamel colours. This might be called the Mosaic enamel system.

That, in addition to these modes of producing colour in a glass painting by means of pot-metal and coated glass, and of white glass coloured with enamels, there was a means of staining white glass yellow, by the application of an oxide of silver, and exposure to heat; a process which might be traced back as early as the commencement of the fourteenth century, and which process was, to that extent, common alike to the Mosaic, enamel, and Mosaic enamel systems of glass painting.

That the chief practical difference between the Mosaic and the enamel systems of glass painting lay in this,—that the pictures produced by the Mosaic system were far more brilliant and powerful in colour than those produced by the enamel method; whilst the means of applying colour with the brush, under the enamel method, enabled pictorial effects to be produced, under that system, more delicate in their nature than could be obtained under the other system, in which more than one colour could only be displayed, on one and the same piece of glass, either by staining yellow part of a piece of white or coloured glass, or else by abrading the coloured surface of part of a piece of coated glass, and leaving the exposed white glass plain, or staining it, wholly or in part, yellow.

That such being the merits and demerits of the rival systems, which of the two was the preferable one could only be determined by a reference to the purposes for which painted glass was ordinarily employed.

That seeing that the employment of opaque metal work in a glass painting might be considered as one of the conditions of this branch of art, and that enamel glass paintings never had the depth or *juiciness* of oil paintings, nor the brilliancy of Mosaic glass paintings,—it appeared that the Mosaic system of glass painting was, on the whole, best suited for large works. That this was proved even by the examination of paintings executed according to the Mosaic enamel method, in which there was a diminution of power or brilliancy in proportion as enamel colouring was substituted for coloured glass, or was employed as a wash to heighten its effect. That the beautiful work by Bertini, in the Great Exhibition, "Dante and his Thoughts," might be cited in support,—that this work, if seen in the ordinary position of a painted window, instead of being viewed from a darkened apartment, would have looked dull in comparison with old windows executed under the mosaic system, as those in the Chapel of the Miraculous Sacrament at Brussels. That instead of endeavouring to imitate oil paintings which were unsuitable in glass, it seemed best on the whole for artists to adopt that system of glass painting, under which, as in the mosaic system, the most vivid effects of colour that human art was capable of could be produced, and in which the necessary lead lines might be made conducive to the effect of the picture instead of detracting from it; and to design a glass painting with the object and intention of executing it according to a system, which afforded the artist very limited means of representation as compared with oil or water-colour painting, and which was incapable at the very best of producing any great atmospheric effect; and above all, with the intention of affecting the most sudden and decided contrasts of light and shade, since, by this means, the leads might be most easily concealed from the spectator, and pass unnoticed in the general crispness of the picture. That the peculiar conditions of glass painting seemed, on the whole, to have been hitherto most completely complied with in the windows of the Chapel of the Miraculous Sacrament, in Brussels Cathedral, and in the windows of the choir of Lichfield Cathedral, which were imported from Belgium and were nearly contemporary with the Brussels windows,—the whole of the windows in question having been painted between 1534 and 1547.

That Mr. Winston was aware that in so strongly advocating the adoption of the Mosaic system of glass painting in preference to all other, and regarding the Brussels and Lichfield windows as showing the utmost limit to which pictorial effect in a glass painting could be carried, he was acting in opposition to the practice of such men as Capronnier of Brussels, Bertini of Milan, and that crowd of German artists who had already done so much to elevate glass painting to a niche amongst the fine arts. But that it should be remembered that these artists were, in all probability, driven into the practice of laying down all their high lights with enamel colour, and so destroying the vividness of the works by the necessity of correcting, as much as possible, the crudity and rawness of modern glass by every expedient in their power. And that, perhaps, they would return to a more complete compliance with the practice of the ancient artists, if they possessed the same excellent material that they did.

ON THE CONSTRUCTION OF MODERN DWELLING-HOUSES.

SITTING-ROOMS IN THE BASEMENT.

It is every day becoming more common to see houses for the middle classes built upon a certain plan, the characteristic feature of which is this,—that the chief sitting-room is below ground. For some time past, my attention has been daily arrested by observing the injurious influence which these under-ground sitting-rooms exert upon the health of their inhabitants, and the benefit which such persons have experienced when I have induced them to move into the higher apartments of their houses. Seeing this evil plan of house-building decidedly on the increase, I cannot longer refrain from calling attention to the subject; and I request that you will permit me, through your columns, to ask those gentlemen who are concerned in designing and building these dwellings, what advantages they can bring forward, as consequent upon the arrangement I have mentioned, which will at all bear comparison with the disadvantages I am now about to enumerate.

The lowest stories of a house are precisely those in which carbonic-acid gas is most likely to linger.

They are in the immediate neighbourhood of the cellarage, where this gas generally exists in unhealthy proportions, and whence, therefore, it is generally proceeding.

The sewerage of a building is concentrated at its lowest part, and any gases which escape, from imperfection in this respect, will be more abundant and less diluted by diffusion with the atmosphere, the nearer their source is approached.

The free admission of sunlight is of the greatest importance to the healthfulness of an apartment; and, owing to the difficulty of choosing the aspect of houses about towns, it is seldom that sunlight enough can penetrate their chambers; but when, to unfavourable aspect and the shadows of neighbouring buildings, is added, an area wall, or a well-like garden in front of the windows, how many rays are refused admission which would otherwise have found their way.

The difficulty of procuring efficient ventilation, always occurring as a cause of disease in towns, is made far more perplexing by imbedding a room in the earth and surrounding it with a bank or wall. This interference with ventilation seriously aggravates the evils already mentioned, for it is familiar to all that even the ponderous carbonic acid gas may be gradually dissipated by diffusion with the atmosphere, if this be admitted in unlimited quantity and every opportunity afforded for its escape when contaminated.

If any part of a house be damp, it will generally be that which is nearest the foundation. Damp, therefore, is a frequent, although not a necessary, attendant in underground rooms.

I will not now add farther details, for fear of occupying too much of your valuable space. Your medical readers will recognise in the deficient supply of sunlight,—the imperfect ventilation,—the damp,—and the presence of injurious gases in abnormal proportions,—a combination of many of the conditions most powerful in producing the scrofulous constitution. When, therefore, it is considered that the apartments I have described are those in which the wives and children of the middle classes spend the larger portion of their lives, I think I need hardly say another word. But, when the gentlemen to whom I have referred have done me the honour of complying with my request, and have stated the advantages which these houses present, I shall have much pleasure in submitting to them some other questions of importance to the public health in connection with the construction of modern dwelling-houses.

H. D.

LONDON AND WESTMINSTER BANK.

BLOOMSBURY BRANCH.

The directors, having resolved to build an entirely new banking-house in Holborn, of a size and character commensurate with the extensive business conducted there, under the able management of Mr. Ewings, requested a certain number of architects, residing in the district and keeping accounts at that branch, to send in designs. No restriction was placed on the competitors, except that the designs were to be sent in at a stipulated period, but in other respects, each candidate was left to the guidance of his own judgment and taste, to send in such a design as he thought most suitable for the purpose required.

The selection has fallen upon Mr. Henry Baker, of Upper Gower-street, who is appointed to carry out the work; whilst the directors were so gratified with the pains taken by the other competitors (Mr. S. Angell, Mr. H. E. Kendall, jun. Mr. Smith, Mr. T. H. Wyatt, and Messrs. Smith and Thurston), some of whom sent in two or three designs, that each was requested to accept an honorarium of thirty guineas, although the sole prize held out was the professional superintendence of the new building. The directors are entitled to praise for liberality.

DEWSBURY WORKHOUSE COMPETITION.

The competition for the Dewsbury Union Workhouse was decided by the board of guardians on Wednesday, the 13th inst. in favour of the plans of Messrs. Lockwood and Mawson. Mr. Oates, of York, obtained the second premium, 20*l.*; and Mr. Mallinson, of Dewsbury, the third, 10*l.*

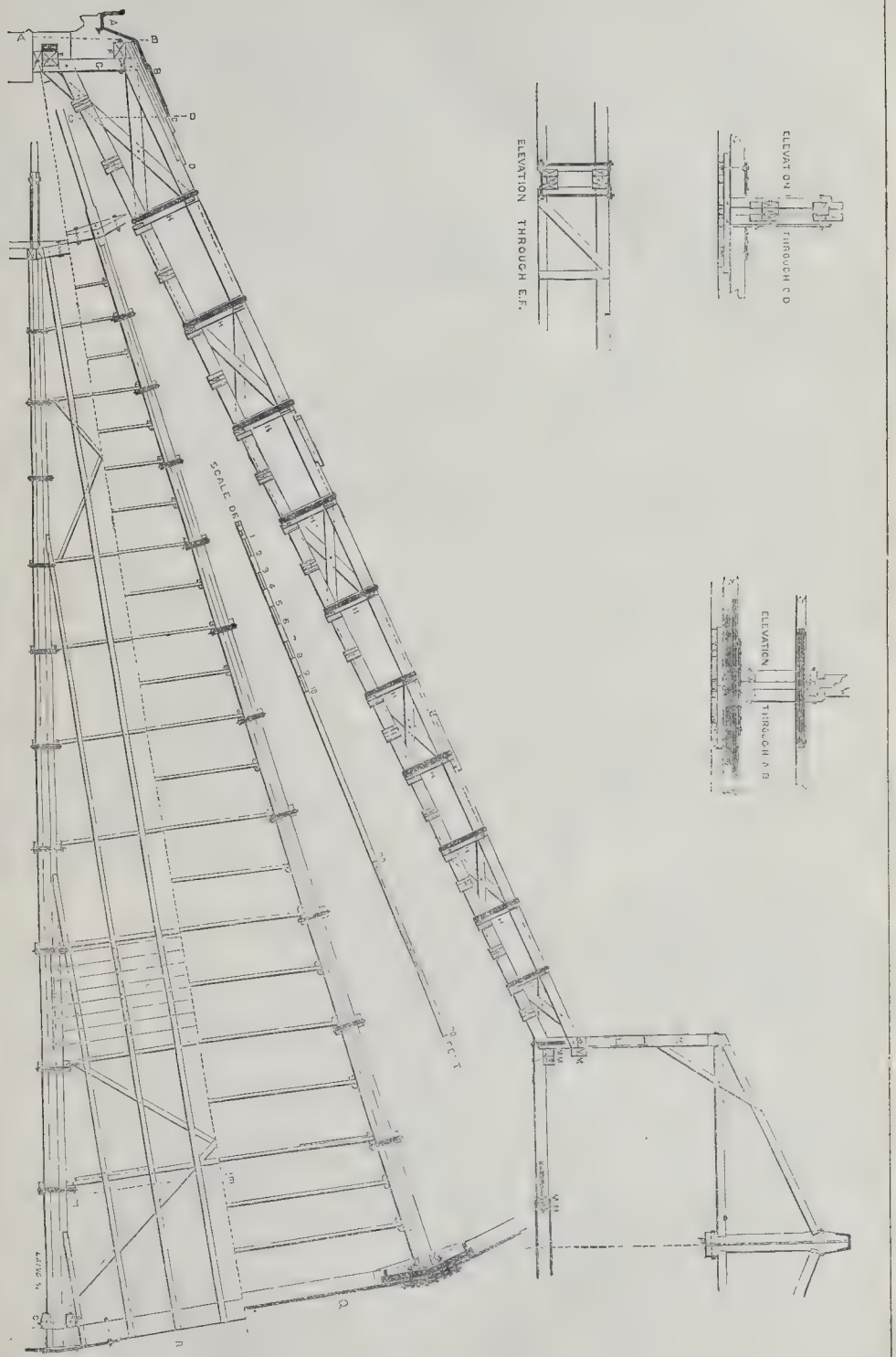
The selected design is in the Italian style of architecture, and will be built from the stone in the neighbourhood. It will accommodate 310 inmates, and the estimated cost is 5,000*l.*

THE ROOF OF THE NAPOLEON CIRCUS, PARIS.

In redemption of our promise, we now give the details of the roof designed by M. Hittorff* for the Napoleon Circus. The span may be called 130 feet, without horizontal tie. We give the side of one of the main girders, or framed rafters, and the plan of one division of the roof, above and below, with elevations at different parts.

The scantlings adopted were determined by careful calculations, which the result has justified. The gutter (A) is lined with lead; the covering of the roof (B) is of zinc. With the exception of the plates E, F, I, the uprights G, H, the St. Andrew's crosses, the circles M, M, and the post P, which are of oak, the rest of the roof is wholly of fir.

* Illustrations of the building will be found, pp. 104, 133, and 152.



ROOF OF THE NAPOLEON CIRCUS, PARIS.

THE LATE MR. WM. A. NICHOLSON, ARCHITECT.

WE regret to have to announce the death, on the 8th inst. of Mr. William Adams Nicholson, architect, of Lincoln, Fellow of the Royal Institute of British Architects.

Mr. Nicholson's health had been for some time impaired by his close application to business. On Friday evening, though seriously indisposed, he left home, accompanied by Mrs. Nicholson, to keep a professional appointment. Having at Boston retired early, he was suddenly seized with symptoms of an alarming nature; and, notwithstanding medical efforts, he gradually sank, and died about midnight.

Mr. Nicholson's loss will be widely regretted. Deservedly high in reputation as an architect, he was instrumental in adorning his own and the neighbouring counties with many important buildings, both public and private. In Ecclesiastical architecture he leaves the church of Glandford Brigg, those of Wragby and Kirmond on the estate of Mr. C. Turnor, and several others. Among the mansions built by him are Worsbro' Hall, Yorkshire; the Castle of Bayon's Manor (the seat of the Right Hon. C. T. D'Eyncourt); and Elkington Hall, near Louth. The estates of General Reeve, Sir John Wyldbore Smith, Bart. Mr. C. Turnor, Mr. C. Chaplin, &c. give evidence of his skill in farm-buildings; and as respects cottage architecture, we may mention the village of Blankney, which has been almost rebuilt under his superintendence.

The ancient city in which he dwelt owes much to Mr. Nicholson's taste and love of his art. He was among the first to call attention to the need of improvement in street architecture, and the town possesses numerous edifices of his which are creditable to his skill.

Mr. Nicholson's work at the church of St. Peter, at Gowts, which he did not live to complete, is spoken of as a faithful restoration. Several of the local institutions, such as the Lincolnshire Literary Society, the Topographical and Archæological societies, lose in him a member to whose suggestions and contributions they are indebted.

Mr. Nicholson was a native of Southwell, and had been settled in Lincoln since 1828. He was twice married, and leaves no issue. He was a pupil of the late Mr. Papworth, whose sister-in-law was his first wife.

The estimation in which he was held in the parish where he resided, that of Saint Swithin, is shown by the circumstance that his brother parishioners have requested leave "to testify their respect for his name and character by erecting a suitable monument to so good a man."

JOHN GIBSON, THE SCULPTOR.

THE jealousies existing amongst artists offer a fruitful and never-failing source of comment. But to consider fairly this subject, does this petty feeling exist to a greater extent amongst the professors of the polite arts than amongst other classes of the community? I think not. The artist, owing to the nature of his pursuits, is rather a conspicuous person; his merits and failings are brought prominently before the world's eye. The fact of the saying, "*Two of a trade can never agree*," having become a hackneyed truism is a proof that this truly pitiable state of feeling is sadly characteristic of poor human nature. But a most agreeable relief is occasionally afforded to this sombre view of the scene of life; and artists as well as others are found who delight in the performance of noble and disinterested acts. Allow me to cite an instance:—

When the King of Bavaria—the statue-loving monarch—honoured Mr. Gibson, the sculptor, with a visit to his studio in Rome in 1830, his majesty, previously to taking his leave, very courteously inquired of Mr. Gibson whether there was any service he might render him: the sculptor replied that he had one favour to ask, viz. that his majesty would accompany him to the neighbouring studio of Wyatt, the sculptor. The king, evidently touched by the generosity of the request, eagerly assented; and Mr. Gibson had the satisfaction of introducing his friend and *rival*, Mr. Wyatt, to the royal lover of sculpture. But that which gives value to this trait is, that it is in strict accordance with the whole tenour of Mr. Gibson's life. Enthusiasm, magnanimity, and courage the most undaunted, combined with great placidity of temper, are leading features in the character of this truly English sculptor, who is, moreover, an honourable man; hence it is that he is respected and beloved by all who know him: the Romans cherish him, and it would be a heart-breaking day to them that in which "Signor Giovanni" bade them farewell. England may not have her ambassadors or ministers plenipotentiary at Rome, but so long as she is represented at the capital of the arts by artists of so sound a character as is that of our great sculptor, her reputation is safe.

It may be permitted to remind your readers that Mr. Gibson is the sculptor to whom Lord John Russell has, with great discernment, confided the execution of the Government monument of our greatly lamented statesman, Sir Robert Peel, a choice which there is reason to believe has met with unqualified approval in a very high quarter. ROMA.

FREE LIBRARY OF LONDON.

IN my last communication, reluctance to engross any considerable portion of the columns of this journal prevented me from offering any practical suggestion upon the best means of establishing free libraries in London, whose creation will increase the intellectual vigour of the empire, and remove from the legislature, or learned bodies which receive Treasury grants and books from authors, a continuation of the reproach that neither law nor enlightenment induced them to shorten the distance between the producing classes and profitable and pleasant relaxation after hours of toil.

Without mourning over the paucity of libraries in this country, when contrasted with the continent, the thirty public libraries in Great Britain, and their probable aggregate of two million volumes,—with the honourable exception of the British Museum, Sion College, and the Guildhall Library, easy of access to those who obtain the necessary reference,—remain as unapproachable as Solomon's sealed fountains, or so clogged with restrictions that the wearied enthusiast after knowledge turns from them in despair. The five libraries of Dublin share the same stigma. The "Silent Sister" is the most exclusive daughter Learning ever owned; her tall folios, her fat quartos, her Celtic manuscript, are alone for her gownsmen. But why single her out when every other college has so largely shared in the sin of literate inhumanity, from whose intolerance arose the amended Copyright Act, which deprived four Scotch universities and the King's Inns Library, Dublin, of privileges more valuable than the lieu of money established instead? They all forget Bacon's homely adage, "gold, unless it be spread, is like muck:" information is the same. Wealth or wisdom is useful only in extent of its diffusion.

How much longer shall we prolong that state of society which permits the homes of the working class to remain unbrightened by poetry, unadvised by history, or uncheered by those amusing fictions which gradually lead minds to meditate upon higher—I may add, holier—things.

Munich has seventeen public libraries, into every one of which strangers unquestioned may enter, peruse, and depart in peace. Of these institutions the most celebrated are lending-libraries. Statistics preach where Sermon does not lift its voice. These are its words. In London there are in round numbers 500,000 volumes accessible to the public, or about an average of twenty-two volumes to every 100 inhabitants. Dublin, with all its deficiences, has fifty-nine. In Paris the proportion is 160 volumes to every 100 inhabitants; in Berlin, 182; in Florence, 317; in Copenhagen, 467; in Dresden, 490; in Munich, 780: so that Paris is six times better provided than London; Berlin, seven times; Florence, thirteen times; Copenhagen, nineteen times; Dresden, twenty times; and Munich, thirty-one times.

The difference is too striking to be dwelt upon without regret, accompanied by a hope that the same spirit which actuated Richard de Bury to purchase volumes from the Abbot of St. Albans (the stereotype press then was grey-goose quill and monkish fingers), for twice their weight in silver, may be actively, but more economically at work in this city now; and that the Committee of Inquiry originating from the Corporation of the City of London, may induce the Royal Commissions to coalesce with them in their labours of domestic literature.

It is a very significant fact, and well worthy the investigation of those who explore past events by existing effects, to know that old London proper, whose civic body has been too often set down as inimical to the progress of the age, at the time distant Vauxhall was improved by the munificent application of city funds, is the only portion of the metropolis, with the exception of Bloomsbury, which can be said to be supplied with libraries at all near the wants of its population. What says the Select Committee on Public Libraries, in 1849:—

"Is there any public library in Marylebone?
None at all.
Is there any public library in Finsbury?
No.
Is there any public library in Southwark?
None at all.
Is there any public library in Pimlico?
None at all."

The Corporation of London can approach the legislature, not with fragmentary evidence of the past, upon which to look with fear, but with proud confidence of having fulfilled their part in having protected and preserved a love of letters amid the stern realities of mercantile life,—not for their own private use alone, but for the public good. JOHN GRAEME.

PROVINCIAL NEWS.

Cambridge.—The committee for the extension of parish burial-grounds in this city have contracted with Messrs. Bell and Son to carry out the new design by Mr. Scott, architect, for the chapel, approved of in November last. The following tenders were given:—

Mr. Myers	£2,477	10	0
Messrs. Quinsee and Attack	1,905	0	0
Messrs. Peck and Son	1,900	0	0
Messrs. Sissons and Robinson	1,900	0	0
Messrs. Bell and Son	1,811	0	0

The lowest considerably exceeded Mr. Scott's estimate,—a circumstance attributable to the late rise in the value of materials. Messrs. Bell's tender has been lowered to 1,700*l.* with a further reduction to 1,600*l.* in case the erection of a portion of the turret should be deferred.

Ramsey.—At Ramsey, in Hants, a county police-station and lock-up are about to be erected. The following were the tenders for the erection:—

Mason	£679	0	0
Bennett	550	0	0
Phillips	550	0	0
Lunn	525	0	0
Mills	470	0	0
Bateman	399	0	0

The quantities were supplied by the architect, Mr. George Allen, of St. Ives.

Eastbury, Up-Lambourn.—The new church dedicated to St. James was consecrated on Tuesday in last week. It is of a Plain Gothic character, from a design by Mr. G. E. Street, of Oxford, architect of the diocese. It is built on a piece of land given by Colonel Foster, of Bath. The builders were Messrs. Knapp, of Lambourn; and the wood-work of roof, seats, &c. was by Messrs. Wilkins, also of Lambourn.

Ashford.—The opening of new schools at the New Town, Ashford, took place on 3rd inst. They have been erected by the South-Eastern Railway Company, for the children of their workmen and servants, and are in the Elizabethan style, built of Kentish ragstone. They are divided into boys', girls', and infants' school-rooms, and second-class rooms. The boys' and infants' schools are thrown into one, and will be used for worship till a church is erected, which is shortly anticipated. The two rooms will accommodate 300 persons. The population of the New Town is about 2,000.

Southampton.—It is in contemplation to make at Southampton two additional new docks, to occupy 11 acres of ground, and a new graving

dock, capable of holding vessels of 5,000 tonnage. A public meeting was lately held on the subject, and there is no doubt, it is thought, that the object will be carried into full effect.

Portland.—The breakwater-work is progressing. The distance from the shore already attained is said to be 2,970 feet, the ninety-ninth bay having been laid down, the distance between each bay being 30 feet. The breadth of the breakwater is 120 feet. The fortification on the Vern is being rapidly proceeded with by convicts. A new wing has been completed for the further reception of convicts, the number already being 925, and another new wing is in contemplation. A new quarry, called "Chain," at the southern extremity of the island, has been opened for supplying the breakwater with stone.

Tormarton.—The ancient church of Tormarton has been restored, and was re-opened on 7th inst. The tower and outside walls alone have been allowed to remain; and these have been repaired. The windows have been all restored; and in the chancel a new window has been placed. A new timber roof has been placed over the nave, aisle, and chancel. The floors have been relaid, and the whole area re-seated with low open benches. More than double the former accommodation has thus been secured, and more than two-thirds are free. A new south porch and a vestry on the north side of the chancel have been built. The chancel floor is paved with Minton's encaustic tiles. A painted east window, and another bearing the royal arms, between the tower and the west porch, are the work of Mr. Miller, of London. During the progress of the works, the discovery has been made of a Hagioscope, or rather a passage, uniting the chancel and south aisle; and also of two niches in the east wall of the chancel, now filled with the tables of the Decalogue. The architect under whose directions the works have been executed, is Mr. T. H. Wyatt, the diocesan architect of the diocese of Salisbury. The builder is Mr. Edmund Millar, of Seagry, who has lately repaired or built several churches in this neighbourhood. There are two other churches in the parish, one of which, at Acton Turville; the bell-turret of which has long been an object of interest to the antiquarian, is in most ruinous condition. The contract for restoring it, and for building an additional aisle, was entered into, some months ago, by the rector: the roof and north wall will be removed next week. Besides this, the enlargement of one school-room, and the construction of another, at Tormarton, are in progress, a third school-room at Acton Turville is designed, and a fourth at West Littleton. The erection also of a curate's residence is required both at Acton Turville and West Littleton.

Bala.—A site for a new church to be erected here, on a plan to be prepared by Mr. Ferrey, has been selected on an eminence in this damp district, with a subsoil of dry gravel, on the road to Festiniog. The site was to be first ascertained before the plan was prepared.

Birmingham.—At length it appears to be finally decided that the tower and spire of the ancient parish church of St. Martin are to be at once repaired. As to the restoration of the body of the church, the rector seems to have given it up in despair, as a work too great for the present generation of Birminghamites, and has left it as a legacy "to their children." A churchman, writing to *Aris's Gazette*, says:—"The meaning of this, sir, is, that the great town of Birmingham, the 'midland metropolis' of this wealthy country, cannot be induced to contribute the sum of 10,000*l.* for the purpose of restoring the parish church of Birmingham, and that one of the oldest and most interesting churches in the kingdom. And yet 10,000*l.* is almost a trifle compared with the large sums given, during the last ten years, for a similar purpose in places which cannot be compared with Birmingham in wealth and influence. In these days you can scarcely pass through a county town, or even towns of still less importance, without meeting with a church restored at a far greater cost than the sum asked for by the rector of St. Martin's. Stafford and Ellesmere, to take instances from the two next counties, are only two out of innumerable examples of churches lately restored with a magnificence which may almost vie with our old cathedrals. I forget the exact expense, but I do not think the cost of the two was covered by 50,000*l.* Yet it is only after considerable delay and repeated solicitations, and with the prospect of a frightful catastrophe, that some 3,000*l.* or 4,000*l.* are forthcoming to render St. Martin's, I do not say a fit place, in some degree, for the worship of the Most High, but *safe* for its congregation to enter." Besides the examples adduced, the writer also instances Leeds, "a town very similar to Birmingham in its trade and general circumstances, but inferior in population and importance. In ten years Dr. Hook has been enabled to restore the parish church at an expense of 28,000*l.* and to erect ten new churches, some at a cost of not less than 15,000*l.* or 20,000*l.* During the same space of time, accommodation has been provided for 7,500 children. To this may be added, that two fresh churches are now in course of erection."—The work of demolishing the old tower and spire, preparatory to their restoration, is to be immediately commenced. On Friday in last week, a meeting of the committee was held to decide upon the tenders sent in. There were eight tenders received, viz.:—

	Spire.	Tower.	Total.
Mr. Cresswell	£3,098	£1,449	£5,447
Mr. Davis	3,450	1,870	5,320
Mr. Barnsley	3,300	1,975	5,275
Mr. Pashby	3,400	1,860	5,260
Mr. Smith	3,412	1,776	5,189
Messrs. Hardwick and Son	3,320	1,810	5,130
Mr. Briggs	3,416	1,690	5,105
Messrs. Branson and Gwyther	3,210	1,780	4,990

There is a considerable difference between even the lowest tender and the estimate of the architect. He estimated the spire at 2,000*l.* the tower at 1,100*l.*; and scaffolding, &c. at 450*l.* more, making 3,550*l.* The tender of Messrs. Branson and Gwyther was unanimously accepted. There is still a considerable deficiency in the subscriptions.——Mr. Thomas Clark, of Furnival's Inn, hydraulic engineer, is busy at Birmingham, according to the local *Journal*, in boring Artesian wells. The corporation, the workhouse authorities, and others, have thus, it is said, got an abundance of water, which Professor Brande states to be of very superior quality.

Coventry.—Preparations are in progress by the contractor, Mr. Murgatroyd, for commencing the arterial sewer of this city.

Wolverhampton.—The model-lodging-house scheme lately resolved on is shortly to be announced by prospectus. It is proposed to raise 10,000*l.* by 5*l.* shares. Since the meeting, authority has been given by Lord Talbot and others to increase, if needed, their number of shares to a defined maximum. No doubt is entertained that the whole number of shares will quickly be subscribed for.

Macclesfield.—Several sites for a park have been surveyed, and estimates of the cost in each case made. It is proposed that the park shall comprise an area of upwards of 20 acres. The estimated cost for the whole is 4,350*l.*; to meet which the committee have obtained by subscription 1,100*l.* With regard to the public library, the only obstacle to its establishment is said to be the failure in obtaining suitable rooms for the purpose.

Buglawton, near Congleton.—St. John's Church has been decorated by the completion of its chancel-window, by Messrs. Powell and Son, of London. The window previously contained a copy in glass of Rubens's "Descent from the Cross." There being a want of uniformity in the general aspect of the window, it was resolved, with the donor's permission, to have the whole re-arranged. The "Descent" was retained as a medallion, and in the opposite compartment of the window (which is one of Norman form, of two lights and an upper semicircular compartment) is introduced a medallion of similar size and form, containing a copy of the "Entombment," by Tintoretto. In the upper compartment is represented the "Ascension," also from Rubens, in the centre of a circle of azure. The filling up consists of a scroll and diamond work, surrounded by a border of blue, white, and gold coloured foliage on a ground of ruby.

Glasgow.—A motion in the estimates proposed by Mr. Wilson, the secretary to the Treasury, for 2,764*l.* for the improvement of Glasgow cathedral, speaks of "Sundry works, required on the fabric, in consequence of the removal of the galleries by the local authorities; renewing the roofs, and substituting lead instead of slate for the covering of the same; reinstating the screen at the entrance of the choir, and for additional glazed screen above ditto; rebuilding the parapet walls, and for other contingent works." The magistrates and council, according to the local *Gazette*, are prepared, at the expense of the corporation, to reseat the cathedral in a manner worthy of its renovated character. To facilitate this, Mr. Mathieson, the architect of the Board of Works for Scotland, has prepared plans, which are now in the hands of the Board of Works for their approval or alteration.

CONSUMPTION, AS AFFECTED BY OCCUPATIONS AND WORKROOMS.

IT is a singular circumstance, which we have nowhere seen specially, or, at least, popularly noticed, but which we happened, incidentally, to ascertain from certain old medical works, that two centuries since consumption was *not* THE ruling scourge of this country which it now is. The terror of our forefathers at that time and previously was the scorbutic not the scrofulous order of diseases; and, that scurvy ever was a scourge so powerful may well be admitted to be probable, when we remember that of this class of diseases was the awful LEPROSY, which once prevailed so much in this country that hospitals for its victims were far more common then than consumptive hospitals are even now.

So comparatively mild, or so comparatively few, were the cases of consumption in the seventeenth century when contrasted with those of scurvy, that we find medical writers of that period ranking the scorbutic at the head of the list of diseases, where consumption now stands, and noticing these as pre-eminently the giant evil to be dealt with, while consumption is passed over below without the slightest remark.

Amongst those modern causes, whatever they may mainly or in general be, to which the increase of consumption in the present age must be attributed, there cannot be a doubt that the vast increase of manufactures, trades, and indoor employment in general, in ill-ventilated workshops, and the overcrowding of private dwellings, also incidental to the same features in our stirring era, must be ranked as most materially contributive to the dread calendar of the ravages of pthisis and its kindred evils. Our labouring classes are especially liable to consumption. The violation of every sanitary law, of which employers, as a class, are guilty, whether by omission or commission, whether by crowding their workshops without extending their area and ventilating their atmosphere, or by building them originally too small and close, throws a heavy responsibility on their shoulders, as, virtually, wholesale slayers of their fellow men. It is not an absolute necessity of industrial employment that there should be so tremendous a wear and tear of *lungs* connected with it, as well as of nerve and sinew. As remarked by Dr. Cotton, the assistant physician to the Hospital for Consumption and Diseases of the Chest at Brompton, in a valuable work on Consumption recently published*—

"It is the impure air, the confinement, the unnatural posture, the deficiency of light, together with the mental and physical depression to which they are subjected, which render our labouring classes so prone to phthisis. . . . . It is lamentable, but true, that the wild beast, in his captivity, leads a life which offers a contrast to his natural habits scarcely greater than does the artisan who labours from sunrise to sunset in his gloomy workshop, or the female domestic in her London kitchen. The forgotten responsibilities of employers make them, unwittingly perhaps, but scarcely on that account less culpably, the disseminators of disease. How many work-rooms of our metropolis remain a disgrace to every feeling of humanity! In numbers of them, even on the sunniest day, the cheering light of heaven scarcely finds an entrance, and the atmosphere, deprived, by respiration and combustion, of every vivifying principle, is hardly ever changed. Thousands of the youth of

* "The Nature, Symptoms, and Treatment of Consumption: being the Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London. By Richard Payne Cotton, M.D. Member of the Royal College of Physicians, London &c. Churchill, Princes Street, Soho, London. 1853."

both sexes annually leave their country homes to become the occupants of these dismal abodes, oftentimes for as much as fourteen or sixteen hours daily; and after a few months, or it may be a few years' service, unequalled in its moral and physical consequences even by the most rigid system of slavery, terminate their career, a prey to phthisis, and, perhaps, also bequeath it to another generation. If we look into the so-called *improvements* of our metropolis, it is evident that they are too generally accomplished at the cost of health and even of life to the poorer classes, by driving them, year after year, closer and closer together, and compelling them to ply their trades, and rear their families, further away from the happy influences of sunshine and pure air,—two gifts of Providence sadly monopolised by the wealthy, although obviously intended to be equally and freely enjoyed."

Painful as such considerations are, they at least afford us this consolation, that the causes of consumption are not all beyond human reach, or irremediable. We hope to live to see the time when employers in general will recognise not only the right and title of their working people to be healthfully accommodated in their workshops, but the advantage to themselves in faithfully fulfilling their duty in that respect, as well as in regard to hours of labour. That a workman will labour more vigorously and more profitably to his employer in a large, well ventilated, and well lighted workshop than in a small, close, dark one, there cannot be a doubt: in place of being a painful task to all, the day's work will in general be cheerfully as well as vigorously done; for the influence of light and air on the animal spirits is as decided as it is on the animal strength. The day, we hope, is not very far distant when thus, and by other remedial measures, consumption will be dethroned as scurvy has been. Indeed, as, in the former case doubtlessly, a change for the better in the way of living—as in the addition of wholesome fresh vegetable food of various kinds to the more exclusive use of animal food and salted provisions,—may have greatly helped to deprive the scurvy of its terrors; so another change in the way of living—as in the accession of pure air, light, and other sanative agencies, inclusive of thorough drainage, the prevention of intramural graveyards, and substantial food purchased with substantial wages—may ere long aid greatly in depriving the fell successor of the scurvy of *its* terrors.

Dr. Cotton, in the book which has given rise to these remarks, has made some important additions to our knowledge of the disorder: the large experience which his position gives him entitles his opinion to the fullest consideration and respect.

TREATMENT OF COMPETING ARCHITECTS IN IRELAND.

Seeing it noticed some time since in the *Builder* that the Limerick Market Trustees had advertised for tenders for the proposed new markets, according to the plans of Mr. Wm. Atkins, architect; and, furthermore, that previous to the decision being made this gentleman came forward and pledged himself that he would procure a respectable contractor to execute the works for 12,000*l.*; I now beg to hand you the estimates of the parties tendering, that the public may see how widely different the result has proved:—*

Fogarty and Son, Limerick...	£29,705	0	0
Burgess and Son, ditto	24,051	16	5
Carroll, Dublin	23,500	0	0
Ryan and Son, Carlow	23,845	19	8
Duggan and McClean	22,559	8	3
Dalton and Shaw	21,163	0	0
Wallace and Son.....	16,266	0	0

Now, I have full authority in asserting that the premium of 75*l.* was awarded in this case on the understanding that the expenditure was to be limited to the stipulated sum (12,000*l.*) and at the same time the required amount of accommodation to be provided. I am also well aware that other competitors, relying upon the instructions issued by the trustees, limited their ideas to suit the proposed outlay. How long is this treatment to continue? Are architects to be the foot-balls for committees? On a very recent occasion, another Limerick building committee incurred deserved censure and opprobrium through your pages. They advertised a premium of 30*l.* for the *best* set of designs for a R.C. church, and after having detained five or six sets for several months (acting most uncourteously to the interested parties), the worthy parish priest decided that none of the plans were the *best*, and consequently would not award the premium at all. In England this would be called a *bull*, in Ireland we call it a *do*. I may also draw your attention to the Killarney Junction Railway Company: they advertised *one* premium of 50*l.* for the best set of designs for a railway hotel, on no account to cost more than 6,000*l.* Several plans were received, and out of the lot two furnished by young Dublin architects were selected for final consideration. The secretary requested guarantees as to the outlay, they were given by two parties of undoubted respectability, and yet this fair-dealing committee changed their minds and awarded two premiums of 50*l.* each to Messrs. Atkins and Brash. The expenditure will be about 20,000*l.* instead of 6,000*l.*

Lynx.

* The quantities were furnished by Mr. Gribbon.

ARRANGEMENT OF FARM BUILDINGS.

At the usual monthly meeting of the London Farmers' Club, at Blackfriars, on Monday week, the subject for discussion was "The Construction of Farm Buildings, the best mode of Housing and Feeding Cattle, and the Prevention of Waste in Manure."

Mr. Cheffins explained the plan adopted by Mr. Bradshaw, of Knowle, at Cranley, near Guildford, for which, however, he did not claim much novelty or originality. We here condense the description, as given, in its main particulars:—

"The plan is essentially practical; it is not even the production of a professional man. Mr. Bradshaw is his own architect, and will be his own clerk of works and contractor. There are three sets of old farm buildings,—two of which Mr. Bradshaw is about to remove to the site of the third, and there construct out of the old materials of the whole, the homestead as shown on the plan produced. The plan consists, generally, of three yards, which are inclosed and divided by the different buildings. It occupies a space of about 330 feet by rather more than 100 feet. The barn is 80 feet long by 20 feet wide. It is two stories in height; the upper one being the threshing-floor, with threshing-machine, chaff-cutter, corn and bean-mill, and other mechanical appliances, to be driven by an eight-horse power steam-engine, placed conveniently to supply all the motive power required in the homestead. A granary will adjoin the barn, on a level with the upper floor. Right and left of the threshing-floor, but on the level of the ground, are two smaller barns, each 30 feet by 20, one for wheat-straw and the other for barley and oat-straw, both communicating with cattle-sheds, stables, piggeries, and stock-yards. The stables are opposite the barn on the north side of the central yard; they will be well lighted from the roof, well ventilated, and thoroughly drained. Between the stables, but under same roof, is the entrance from waggon-yard, but separated by close gates. Two ranges of buildings, each 80 feet by 18 feet, extend between the barn and stables, and enclose the central or feeding-yard. The animals will stand on boards, and the space behind, with gangway and passages outside, will be asphalted, with drains to manure-tank. These buildings will be entirely closed, with every provision for light and air. We now come to the manure-tank, that most important feature in modern farming, the receptacle as well as source of nearly all the produce on a farm. It will occupy the centre of the middle yard, and will be 60 feet long, 20 feet wide, and 9 feet deep—*i. e.* 6 feet in the ground and 3 feet out. It will be bricked and cemented, or asphalted to level of ground. A stout kerb or brick arches will support the open flooring and pens of the piggeries, which will be covered by a light slated roof on oak or iron pillars. These pens are intended for fatting and store pigs, and their dung will drop into the tank through the spaces of the flooring. Pigeons will also be encouraged to build under the roof over the piggeries. The drains from the stables, the slaughter-house, and the beast-houses, will run into the tank, and the dung from the stables and cow and bullock-sheds will be daily brought into and spread over it. The tank will be emptied with carts, by an inclined plane or slope at the north end, through the entrance to the waggon yard, which will be covered over with moveable planks when not in use. The yard at the north end of the homestead will be about 60 feet by 50 feet. It will be entirely enclosed by buildings, comprising, successively, a slaughter-house, nag stable, or loose box; workshops for carpenters, smiths, and wheelwrights; stowage for guano and other artificial manures; men's room, tool-house and office or counting-house, with sheds for six waggons and carts, and standings for the larger implements. These sheds will be enclosed with open gates, 4 or 5 feet high. This yard is intended to be the principal entrance to the homestead. The south yards are principally intended for young stock, or at times for sheep."

Briefly, added the speaker, the plan may be thus characterized:—"We have an elevated site, a sheltered aspect, good roads and plenty of water. The buildings are divided into three distinct portions: to the northern yard are confined all the operations connected with the actual cultivation of the land and the general management of the farm; the central yard and buildings may be termed the manufactory of beef and pork; and in the capacious manure-tank we see the spring and source of future crops. The threshing-floor and barn-kitchen (a most appropriate and significant term), by the active agency of steam, provide for the due preparation of all the produce of the farm—each sort to its separate use, either for market or stock-feeding; while the southern yards are, as it were, a nursery for rearing and bringing forward young stock."

After describing the system of management and cropping, &c. Mr. Cheffins concluded his remarks, and a discussion ensued, in which several members agreed in the importance of such an arrangement of buildings as would enable the farmer from his residence to command a view of all his premises, an advantage not afforded by the plan described. The prudence of having the piggeries above the tank, and open beneath to its influences, was questioned. Mr. Hobbs produced a model of a covered homestall, now in extensive use on Lord Somers's estate, and in the arrangement of which, Mr. Day, of Worcester, architect, had taken part. This plan would appear in the journal of the Agricultural Society. It could be carried out at a cost 10 to 12 per cent. less than the ordinary arrangements. The effect of slates in covered homestalls, in rendering them close and hot in summer and cold in winter, was complained of. The merits of pugging and thatching beneath were considered. Rats harboured in thatch. Mr. Jackson explained a model of another covered homestead. The discussion, of which a pretty full report appears in the *Mark Lane Express*, was concluded by the voting of a resolution to the effect:—"That after the variety of systems advocated this evening, the Club will not undertake to recommend any one in particular; the great point being to adapt the buildings to the occupation they may be erected on—soil, climate, and situation, being carefully considered."

THE BISHOP'S PALACE, LIEGE, RESTORED.

All who have read "Quentin Durward," one of the most charming of Sir Walter Scott's romances, know something of the Bishop's Palace at Liege, in Belgium, and the majority of our readers have probably seen it for themselves. It was built by Erard de la Marck, in 1533, and is now known as the Court of the Palais de Justice. The façade was restored a short time since under the superintendence of M. Delsaux, and on an opposite page we now give a view of one of the sides. The arcade has a striking effect; the pillars which form it are each carved differently.

The University of Kiel Holstein, have conferred *(honoris causâ)* the degree of Doctor of Philosophy on Professor Donaldson, architect, in recognition of his researches and publications.

Foundations—Sea-clay.—Some time ago it was stated in the *Builder* that the site of the houses in Glasgow was usually covered with asphaltum, or some substance of this nature. I should be glad to learn what the substance used is—gas tar, mineral tar, or otherwise,—at what stage of the proceedings it is done,—and whether any inconvenience is felt from the smell on first occupying the house. Is it safe to use for the insides of walls that have to be plastered, bricks made from clay soil recovered from the sea?—

W. R. C.



THE BISHOP'S PALACE, LIEGE, RESTORED.

RESTORATION OF DONCASTER CHURCH.

The committee nominated by a recent public meeting to take certain steps towards the restoration of Doncaster Church, have appointed Mr. G. G. Scott, the architect. Mr. Scott says, in his report to them,—"It often happens that a church which, from its dimensions, the amount of its obstructive masses, and other adverse symptoms, appears most unpromising, turns out, when restored and correctly arranged, to be very far from presenting the inconveniences which were anticipated: keeping out of view the notion that if we are to preserve the fabric unaltered, we must use none of its parts differently from their first intention,—a practice which would compel the disuse of chancel, aisles, chapels, transepts, &c. merely because in olden times they had been accustomed to be appropriated to altogether different uses,—thus, in refitting our churches, we must have our own ritual and our own necessities in view; and while we make correct ecclesiastical arrangement our leading object, we must not be prevented by a morbid feeling for antiquity from applying to existing uses those parts whose original intention has become obsolete."

THE GRAVEYARD QUESTION.

The City Sewers Commission have advertised for 100 acres of ground on the north side of the Thames, as a place of sepulture for the City; but they hope to have a grant from Government of a portion of Epping Forest, for which they have applied.——The burial board of St. Pancras have purchased 87 acres at Finchley at 200*l.* an acre, for a parish cemetry.——Notices have been given by the Home Secretary that, on and after 5th May, the undermentioned places of interment will be closed:—St. Margaret's, Lothbury; St. Christopher le Stocks; St. Bartholomew, 'Change; St. Edmund the King with Nicolas Acons; All-hallows the Great; Allhallows the Less; St. Lawrence; St. Mary Magdalen; and St. Mary Haggerstone, in the parish of St. Leonard's, Shoreditch.——In the *Atlas* of last week is an article on the "Wholesale poisoning in consecrated ground," in which the writer forcibly complains that while the clergy expatiate on the mysterious ways of Providence in shortening life, they do not inculcate the necessity of obeying God's physical laws, and the sin of infringing them, as in such cases as that of the burial of the dead in the midst of the living, to which, in many instances, and not to any mysterious ways of Providence, are to be attributed the dangerous illnesses for the mitigation of which they often pray in the very churches in and around which the poisonous vapours were breathed, which produced the illnesses wrongly attributed to Providence. Mr. G. A. Walker is again patriotically circulating notes of warning. We think the writer in the *Atlas*, in still speaking of "the slow rate we are progressing" at, neither notes nor does justice, as he should do, to the vigour with which our new Home Secretary, Lord Palmerston, is putting down the "wholesale poisoning" of which we all complain.——A strongly-worded petition, signed by 760 of the principal inhabitants living in the immediate locality of the burial-ground attached to St. James's Chapel, Hampstead-road, has been laid before Lord Palmerston by a deputation consisting of Mr. G. Cruickshank, Mr. Ivimy, Mr. U. Justice, Mr. W. Sandby, Mr. Quick, Mr. Elliott, and Mr. G. P. Nicholls, who explained to his lordship that the petition had been drawn up and signed without any public excitement being aroused on the subject, but simply by those who felt themselves and their families to be great sufferers from the abominable state of the ground, and that they had rather understated the facts in showing its filthy condition. The deputation were most courteously received by his lordship, who said they had made out one of the strongest cases that had been urged against any burial-ground, and stated that he would appoint Dr. Sutherland to make a report upon the condition of the ground in question, and on receiving it, and finding the statements of the petitioners to be correct, he would obtain an order from the Privy Council to close it forthwith.

GAS FITTINGS IN CHURCHES.

Attention has lately been frequently and painfully attracted to the dangers and annoyances resulting to the public from the false spirit of economy which at present regulates the construction of our houses, chapels, &c. Some of the more glaring of these—as the inefficient strength of girders, &c.—may possibly correct themselves, but there are others, attended with slow but certain injury to health, which seem likely to pass unnoticed, since they do not involve immediate risk of life and limb.

The specific evil I would now point out is the extreme inefficiency of the gas-fittings in the greater number of our lately-built churches and chapels.

With the noisome atmosphere experienced in these buildings, and its distressing and debilitating effects, we are all familiar; while, at the same time, we know that in our private houses and elsewhere we enjoy a powerful and pleasing light from gas without any of these inconveniences.

I believe the spirit of competition, pursued beyond its legitimate limits, to be the secret of this anomaly, while I am certain this principle of cutting down the artificer's tender to the lowest possible amount cannot be defended on the grounds of equity or even of expediency. The hundreds of thousands of our fellow townsmen whom the cupidity of contractors exposes for a couple of hours each Sunday evening to the deleterious effects of a poisonous atmosphere would, I am sure, be happy to ward off the distressing ordeal by a payment, in the first instance, augmented so as to enable the gasfitter to put up fair and creditable work, and thus to confine to its proper place, and economise for its legitimate illuminating purpose, the vapour which is at present wasted, to the detriment of both purse and health. W. W. A.

THE ENCYCLOPÆDIA BRITANNICA AND ARCHITECTURE.

Very great promises are made for the new edition of the "Encyclopædia Britannica," for "all the articles will be brought up to the present advanced state of knowledge;" and attention is expressly drawn to some of the more important ones in the two first letters of the alphabet, and the names of the writers are given as pledges of their ability. Nevertheless, rather strange to say, there is no mention of the article "Architecture," although it is certainly one that will require so many additions to "bring it up to the present advanced state" of information concerning it, which has of late years so greatly accumulated, that it will prove a task of no small labour to reduce the whole into a lucid and equally comprehensive and satisfactory treatise. Whatever his ability in other respects may be, it will be exceedingly difficult to find any one person gifted with the requisite impartiality,—one so totally free from all prejudice, either *for* or *against*, as to be able to estimate the several styles of the art æsthetically, carefully pointing out the merits and defects of each, and which is, upon the whole, the most suitable at the present day, and also the most manageable. Those who study architecture, be it professionally or otherwise, are apt to be so prepossessed in favour of some one particular style as to show themselves more or less intolerant of almost every other; the consequence of which is, that almost every style is, in its turn, as unduly extolled by some as it is unduly depreciated by others.

In an Encyclopædia making more than ordinary pretensions, some pains ought to be taken to give a tolerably satisfactory account of what has been done in architecture both in this country and on the continent since the commencement of the century. There have certainly been great activity and productiveness; and not a few important monumental structures have been reared, to pass over which without notice would be to lag greatly behind the *courant du jour*: Architecture obtains far more attention now than it did five-and-twenty years ago; therefore those who take any interest in it will hardly be satisfied unless the "Britannica" enlarges greatly upon what has hitherto been said in that and similar publications.

One thing which would be eminently serviceable in a work of the kind, and a novelty also, is a clear and full explanation of all the several conventional modes of describing geometrically by means of plans, &c. which ought to be adequately illustrated by drawings and diagrams. Superfluous as it may be thought to do so, it would serve to clear away at the outset what appears to be now a difficulty and a stumbling-block to the many, and to prejudice them against what appears to them a dry, formal, and technical study, merely because they do not, and will not take the pains to understand that which once understood not only removes all difficulty, but becomes a source of varied and never-failing interest. Although not required by the professional student, the elementary explanation here suggested is surely a *desideratum* in a work intended for general readers; and its not having been supplied before, becomes an additional reason for its now being supplied as efficiently as possible. Z.

NEW PATENTS.

Protection allowed.

A. Carosio—Electro-magnetic apparatus for motive power, light, and heat.

R. Walker—Working and increasing safety of railways.

S. Newton—Self-action friction-break for railway carriages.

R. Heath—Railway breaks and signals.

J. Pym—Permanent way.

J. Hadden—Motive power.

L. Faulkner—Motive power.

Patents sealed.

S. Green, Princes-street, Lambeth—Joining earthenware tubes and pipes.

J. H. Johnson, 47, Lincoln's-inn Fields, and Glasgow—Aerial navigation, and in the machinery or apparatus connected therewith. (A communication.)

C. Cowper, 22, Southampton-buildings—Manufacture of oxide of zinc or zinc white. (A communication.)

J. Lochhead, Kennington, and R. Passenger, Union-street, Southwark—Manufacture of glass and other vitrified substances; and in ornamenting and annealing same.

P. A. Pius, Paris, and 4, South-street, Finsbury—Improved chain or cable, &c.

J. Nasmyth, Stafford-stret, Bond-street—an improved mode of utilizing running waters;—Mode of obtaining and applying motive power.

R. Walker, Glasgow—Construction of portable houses and other erections.

L. F. Vaudelin, Upper Charlotte-street, Fitzroy-square—Apparatus for retarding and stopping railway carriages.

F. J. Bramwell, Millwall, and I. Baggs, Liverpool-street—Steam machinery used for driving piles, hammering, stamping, and crushing.

W. B. and G. S. Whitton, Princes-street, Lambeth—Manufacture of sewer and other pipes.

G. G. Mackay, Grangemouth, near Falkirk—Construction of drain pipes.

Design registered.

J. C. Gunn, 6, Picardy-place, Edinburgh, improved collar for connecting pipes.

CHARGING FOR MODELLING WITHOUT DESIGNS.

Herbert v. *Bennett.*—This was an action in Marylebone County Court, to recover 3*l.* 10*s.* for cornice moulds. The plaintiff stated that he received orders from Mr. Isaac Bird, surveyor to the defendant, to prepare some cornices for two rooms. The order was given in presence of defendant, who did not object to pay for the cornices and castings, but refused to pay for the moulds.

By Mr. Herring.—Had not supplied any other person with the same patterns. Did not tell Mr. Bird or defendant he would charge for modelling. Did not model the cornices from any drawing of Mr. Bird's. It is customary in their trade to charge for modelling without having drawings from architects. Has an immense stock of moulds. Mr. Bird said the castings would do very well. The first set of cornices suited, but for the second room it required them much larger. Did not tell defendant or his surveyor that he would have to make new moulds for the second room. It is customary for surveyors to settle their bills.

Mr. Herring said, unless ornament-makers had to make moulds from drawings it was not customary to charge for modelling. Tradesmen in plaintiff's business were expected to always have on hand a stock of moulds for castings, and it would be a positive robbery to make each person purchasing castings to pay for modelling; they had as much right to charge purchasers for designing. He called Mr. J. Bird, surveyor, who stated that the cornices were not modelled purposely for defendant; that he did not supply any drawings; and that it was not customary to charge for modelling, unless architects gave a design for the moulders to work from. He could have lent plaintiff fifty or sixty casts which would have done. He expected to pay for casting and fixing. When he gave drawings he should consider it very wrong for an ornament-maker to make a cast from it for other persons. He was positive he never gave any instruction for a model.

By plaintiff.—There was some alteration in the second set of castings. They were required to be larger than the first set.

Mr. Hughes, plasterer, was called to support defendant's case; he, however, stated that he could not see how a casting could be reduced or enlarged without making a new model.

The Judge said, upon the first set of castings there did not appear any grounds for charging for a model, but by defendant's own witness, there did seem a necessity to make a fresh moulding. He should therefore only allow for the second moulding, which was charged 2*l*. Verdict for plaintiff for 2*l*. and costs.

VALUE OF LAND AT NEW KINGSTON OR SURBITON.

JOSIAH WILKINSON v. CHELSEA WATER COMPANY.

At the beginning of the year 1852, Mr. Josiah Wilkinson purchased, of the late Mr. Raphael, an estate extending from New Kingston to the river Thames, consisting of fifty acres of land, with a mansion thereon, for the sum of 20,000*l*. being about 350*l*. per acre, exclusive of the mansion.

At the end of the year 1852, Mr. Wilkinson commenced laying out roads for building purposes, when the Chelsea Water Company gave notice of their intention to take 2a. 3r. 26p. of this land for their new works and pipe track, viz. 1a. 2r. 15p. of marsh land next the Thames, 1a. 0r. 13p. towards and to be thrown into (by agreement to widen) the road; and 38 perches across a meadow: in the latter instance there was severance, but not with the others.

For this 2a. 3r. 26p. Mr. Wilkinson sent in a claim of 9,622*l*. which amount the company declined to give. After some negociation the question was referred to the arbitration of two surveyors, Mr. Wilkinson, of the Poultry, for the claimant; Mr. Willshire for the company: and these gentlemen appointed Mr. John Shaw their umpire.

To support the claim Mr. Wood and two builders from Kingston were called, as also Professor Donaldson: the latter gentleman valued the compensation at 8,820*l*. viz. for the land next the Thames 4,800*l*. for the land to be thrown into the road 3,420*l*. for the 38 perches, including severance, 600*l*. or about 3,028*l*. per acre.

On the part of the Company Mr. C. Lee gave evidence that he valued the whole at 1,932*l*. viz. for the land next the Thames 880*l*. for the land to be thrown into the road 650*l*. and for the 38 perches, including severance, 400*l*. Mr. Philip Hardwick and Mr. John Clutton gave similar evidence.

Mr. Shaw awarded 2,135*l*. or about 733*l*. per acre.

Miscellanea.

PIECE WORK.—A police case has been decided at Westminster by Mr Arnold, in which a workman, employed by Mr. James Cooper, of Knightsbridge, cabinetmaker, left his employment in the midst of a job which he had undertaken to do for a specific sum, namely 3*l*. 10s. and of which sum he had got 2*l*. 16s. 6½d. on account. He had previously been on day work, but at his own request was put upon piece work, and a wardrobe, the job in question, given him. He was charged under the statute for abandoning his employment and neglecting to fulfil his contract. Mr. Arnold decided that where no specific time was agreed on for the completion of the job, and in a case such as this, where, in fact, there was no contract to serve clearly proved, he had no power to adjudicate. In order to be a contract within the meaning of the penal statute, the relation of master and servant must strictly exist; but here there was no period fixed at which the work should be completed, no particular hours which the workman was bound to observe, not one of the ingredients necessary to make out that the defendant was the servant of another; but it was shown that defendant's was the mere undertaking to do a certain amount of work at an indefinite period, for a certain sum. There must be a contract of service, not the mere contract to perform a certain piece of work at a given price, to give him a power to deal summarily with a workman. The summons was accordingly dismissed, but complainant had a remedy at the County Court.

THE GLASS TRADE.—A meeting of the window-glass manufacturers of the United Kingdom was held recently in Newcastle, according to the *Gateshead Observer*, to consider the expediency of an advance of prices, in consequence of the continued increase in cost of materials. It was determined, for the present, to continue at the old rates, although from the increased cost of production the trade had become unremunerative. It would seem, adds our authority, that any increase in the present prices of window-glass would cause the market to be supplied from the Continent.

THE LABOUR QUESTION.—The movement for advance of wages still extends, and other meetings and strikes have taken place besides those already noted, as in Bath, Bristol, Bridgewater, Haverfordwest, Kidderminster, Manchester, &c. At Bath, the carpenters and joiners are agitating for an increase of 6d. a day in their wages, and a considerable majority of the masters are reported to be ready to accede to the request, as have the master cabinet-makers, and employers in various other trades. The "Strike Committee of Carpenters and Joiners," at Bristol, have sent delegates to Haverfordwest to excite the workmen there to demand a rise of wages, and the navvies in that quarter have not only demanded a rise of 3d. a day and refused to work, but have proceeded to intimidate others inclined to do so. The ring-leaders in this unlawful course were brought up before the magistrates. The Bridgewater brickmakers have struck work. The Kidderminster bricklayers, carpenters, and labourers, have turned out,—the bricklayers for 3s. a week, and the carpenters for 2s. of increase. The Winchester carpenters and joiners are discussing the subject of wages. Most of the Manchester plasterers have succeeded in getting a rise from about 26s. a week to about 28s. The masons seek a rise from 5s. and 5s. 6d. to 6s. and upwards a day. The joiners and bricklayers are agitating an advance also. Master builders having contracts find themselves awkwardly placed by this state of things, and several of the largest of them have declined to tender for new contracts until wages have assumed a more settled shape. The sawyers of Sunderland who are on strike have had 30s. per week; but a great body of them worked by the piece, and the advance of the piece price required is as follows:—for cutting yellow pine, present price 2s. 4d.—2s. 6d. required; English oak, present price 3s. 6d.—4s. required; mahogany, elm, birch, and teak, present price 3s. 9d.—4s. required; African oak, present price 4s. 9d.—5s. 3d. required; iron-wood, present price 5s.—6s. 6d. required; red pine, white wood, and Memel, present price 2s. 9d.—3s. required—for 100 superficial feet, and one solid cut upon the whole. This addition will add from 2s. 6d. to 3s. 6d. to each sawyer's weekly wages.

A TUBULAR LIFE-BOAT RAFT.—An invention has been patented by Mr. George Frederick Parratt, of the Treasury, for the conversion of boats of any description into life-rafts, capable of holding a greatly-increased number of persons, while incapable of being upset. The raft-apparatus consists of a beam, to be bolted in the middle, midships, and turned along the length of the boat while not in use as a raft, together with two inflated india-rubber tubes at each side of the boat, which, independent of the setting of the raft-apparatus, will convert the boat into a sort of life-boat, itself difficult to capsize; and finally, a netting-apparatus. When the boat is so fitted up, it can be converted into a life-raft in three or four minutes by running the beam across the boat, when it spreads like two arms to about the full breadth of the boat additional on each side; and tackle run through each extremity hauls out the buoyant tubes and netting, so as to form a sort of oval raft, into which many persons may leap from a ship's side without injury, and which, together with the boat itself, will enable them to keep above water till other succour can reach them, or till the boat be rowed or steered ashore, which it can be either with oars or sails, even while the raft-apparatus is extended. A trial was made of this invention at Mr. Cubitt's pier, Pimlico, lately, and, in the opinion of all the nautical men present, the success of the experiment is said to have been in every respect complete, even to the filling of the boat with water, when the gunwale stood, nevertheless, 11 inches above the water-line. The eight boats now usually carried by large passenger-steamers would be capable, it is estimated, as life-rafts, of holding above water 800 persons, instead of 270, as at present, and without fear of upsetting. The invention, however, also comprises a boat specially formed with water-tight lockers for provisions, and other advantages in its use with the raft-apparatus.

SMOKE CONSUMPTION.—A plan which is said to be simple and inexpensive is reported by the *Bradford Observer* to be in operation at the Britannia mills in that neighbourhood, and described as consisting in the admission of a stream of cold air between the bridges at the end of the boiler, and at the same time of a jet of steam over the fire-box. The dense thick volume of black smoke is said to be quickly reduced to an almost imperceptible stream of light smoke the moment the apparatus is put into use, while there is no loss of heat, but it is rather greatly increased, and the steam is constantly kept to the requisite temperature. The application of the apparatus, it is added, will not cost more than 3*l*. a boiler, wherever applied. The artisans in employment at the Britannia Mills who have the merit of applying this scheme are said to be Joshua Turner and Isaac Jefferson.

NORTHUMBERLAND DOCKS.—The Commissioners of the River Tyne are about to commence forthwith the construction of these important Docks. They are intended to enable collier vessels to take in their cargoes afloat, instead of being subjected, as at present, to the inconvenience of the rise and fall of the tide. The specification and working drawings have been prepared by Mr. Plews, C.E. of London. There will be two entrances, one 70 feet and the other 52 feet wide, with a tidal entrance basin. The floating-dock will contain an area of about 50 acres, and when in operation will, no doubt, be of the greatest benefit to the important and extensive trade which is carried on in the shipment of coals in the River Tyne. These docks will be situated about six miles below Newcastle, on the north bank of the river, at a place called Hay-hole, and are expected to be completed in about three years.

LEASES OF SMALL PLOTS FOR COTTAGES AND GARDENS.—A correspondent, Mr. Charles Paul, complains that, although the expense of leases has been so much reduced by the Legislature, and the duty taken off bricks, the poor man seems to derive no benefit from these well-intended measures; and he thinks that landowners in many districts would find it much to their advantage were they to deal their land out in acre, or even half or quarter acre, plots, for cottages and gardens, while much benefit would arise to the working classes from the opportunity of spending their leisure hours in gardening, keeping fowls, &c. on their bit of ground, instead of spending these hours in the beershop. The Legislature, in this as in some other instances, seem to have been in advance of the public desire or opinion, which still remains to be formed, both on the part of those who are to supply the demand, and of those who are to demand the supply. Nevertheless, some progress is being made towards the end in view, and we are ever and anon assisting towards its accomplishment. Our correspondent's own complaint is evidence, so far, that the requisite demand at least is forthcoming.

PORCH AT SOUTH OCKENDON CHURCH, ESSEX.—The two hamlets of North and South Ockendon are situated in the county of Essex, about six miles from Romford, and the same distance from Grays Thurrock. The church at South Ockendon, which has an interesting north door of the Norman period, is a small edifice, boasting of a round tower at the western end, a nave, north aisle, chancel, and a chapel north of chancel. One or two of the original open seats remain at the west end of the north aisle; but neglect and ill usage have all but destroyed them. In the chapel, the walls of which are covered with wet green mould, is a large tomb, once finely coloured, but now in a very bad state. Under the tie-beams of the nave are some curious corbels, evidently of Elizabethan date, but at the present time covered with whitewash. The whole of the church, both internally and externally, including the Norman doorway, is in a very dilapidated condition. At the neighbouring church of North Ockendon are two very good brasses. This also possesses a Norman door, though far inferior to the above. The details of the church generally (Early Perpendicular) are good, and in a tolerable state of preservation. Altogether, the neighbourhood is rich in Norman detail, including Rainham, Wennington, Grays, and Stifford, and is well worthy of the inspection of the antiquary, being easily accessible by steam-boat to Grays, or by the Eastern Counties Railway to Romford.—L. AND J.

THE ARCHITECTURAL SOCIETIES of Oxfordshire, Bedfordshire, Buckinghamshire, and Northamptonshire, have agreed to hold a joint meeting at Banbury, on Tuesday, May 24th, when papers will be read, and excursions made on the following day to places of archæological interest in the neighbourhood. The Bishop of Oxford is expected to take the chair.

SOUTHAMPTON NEW DOCK.—The Dock Company have just let the contract for a new graving dock, 500 feet long, 88 feet wide, with 80 feet gates, and 34 feet deep, to Messrs. George Baker and Co. the work to be completed by March 1854. There were twelve tenders, ranging from 39,500*l*. to 62,000*l*.

THE WHITTINGTON STONE AGAIN.—I trust I am not trespassing too much in noticing the remarks of Mr. Charles Foster, on my complaint of the state of the stone now standing at the foot of Highgate-hill, and which, in my *ignorance*, I supposed was the one on which the hero sat, not knowing that the "ancient" stone had undergone such vicissitudes as Mr. Foster represents, nor of its conversion into a *pinnacle*, a question of taste and propriety I leave to your judgment. It is fair to presume that the modern stone was placed there for a purpose, which is defeated by the inscription becoming year by year illegible; and as it must be the duty of *somebody* to recut it, and I do not know who that somebody is, I have ventured to call attention to it through your columns, in order to prevent it following its predecessor, and becoming another *pinnacle*, or something worse. P. P.

NEW MULTIPLYING MOTION.—Messrs. Callen and Ripley have lately taken out a patent for a new multiplying motion. Their invention consists of a circular grooved disc and a double crank. The grooves which are formed in the face of the disc are varied according to the multiple required. The crank-pins are mounted with friction wheels, and as the disc rotates these wheels roll along the grooves and thus give a multiplied motion to the cranks. Mr. W. Bull, to whom the invention was submitted, reports that "The crank-pins describe equal spaces in equal units of time, therefore the power and speed transmitted are perfectly uniform at every point in the rotation. From the fewness and simplicity of the parts the loss in friction as compared with that of cog-wheels is reduced about 6-horse power in every hundred. The space required by this motion is much less than by spur-gearing, while the cost is only about one-sixth. This motion saves power by diminished friction, produces no noise, and is not liable to accident." Independent of the danger, and power lost, by the use of cog-wheels, the noise arising from their use has always been objectionable, especially when applied to the screw propellers of steam vessels, in all of which cases the application of this invention, if it bear out the statement made, will be of great value, as it will, too, to the screw ships of the navy, where, from the small space required, this motion can be easily fitted below the water-line and clear of shotway.

THE BRITISH MUSEUM was on Easter-Monday visited by 26,537 persons, being an increase of 7,000 on the number of last year. Notwithstanding the great influx of visitors, the greatest order and regularity were observed.

BUILDING GROUND AT MELBOURNE.—A ground-plot, forming the corner allotment of Queen-street and Little Flinders-street, and measuring 60 feet by 99, is reported by the *Melbourne Herald* to have been lately sold for 6,000*l.*

NUMBER OF PERSONS EMPLOYED ON RAILWAYS.—It appears from a return just issued, that the number of persons employed on railways in England and Wales at the end of June, 1852, on 5,433¾ miles open for traffic, having 1,790 stations, was 55,331: for the corresponding period of 1851, on 5,200 miles, having 1,669 stations, the number was 51,979 persons, showing an increase of 3,352 persons, 233 miles, and 171 stations. The number of persons employed on railways in Scotland at the above date on 961⅔ miles of railway open for traffic, having 311 stations, was 8,271; and in June, 1851, on 960⅔ miles, having 304 stations, 8,107, showing an increase of 164 persons and 7 stations. The number of persons employed on railways open for traffic in Ireland at the end of June, 1852, on 680⅔ miles of railway, having 152 stations, was 3,999; and at the same period in 1851, on 537½ miles, and 134 stations, 3,477, showing an increase of 522 persons, 43 miles, and 18 stations. The total number of persons employed on 7,075⅔ miles of railway open for traffic in the United Kingdom, having 2,253 stations, was 67,601; and in June, 1851, on 6,698⅔ miles of railway, and 2,107 stations, was 63,563, showing an increase of 377½ miles in the length open, 146 in the number of stations, and 4,038 in number of persons employed.

A MONUMENT TO DR. JENNER is to be put up. The statue is to be a colossal bronze figure, to be erected in the metropolis. The model has been designed, we believe, by Mr. Calder Marshall.

THE WOOD MARKET is said to be in an excited state, in consequence of the telegraphic account received from Cronstadt of the entire stock of deals lying there having been burnt. The quantity destroyed is estimated at 80 to 100 cargoes, valued at 80,000*l.* "An advance of 1*l.* 10s. per std. hun. has taken place in Hull market, several transactions having taken place at an advance."

THE PROPOSED WELLINGTON MONUMENT IN GUILDHALL, LONDON.—The Court of Common Council have resolved that the designs for the monument in honour of the late Duke of Wellington, to be erected in the Guildhall, and which a committee recommended should be limited for competition to six artists, the unsuccessful ones to receive one hundred guineas each, shall, on the contrary, be open for general competition by British artists, at a cost of 5,000*l.* with power, however, to the committee to expend five hundred guineas in rewarding five of the unsuccessful candidates as they may think proper.

KILKENNY ARCHÆOLOGICAL SOCIETY.—At a recent meeting of this society, Mr. R. Hitchcock read a paper on the round towers of the county of Kerry, a report of which appears in the *Kilkenny Moderator* of 30th ult.

PROPOSED ERECTION OF FIFTY-EIGHT NEW CHURCHES IN LONDON DIOCESE.—Her Majesty's commissioners have recommended the erection of fifty-eight new churches in the diocese of London; and most, if not all, of these will be commenced as speedily as circumstances will admit.

A BIRD'S-EYE VIEW OF BOSTON, U.S.—"Seen from the monument on Bunker-hill," says an Englishwoman who recently visited America, "Boston looks like a large spider dropped into the water, struggling for the land, in order that it may spin its web and fulfil its destiny. Boston appears to the greatest advantage seen from the bay, surrounded by a *chevaux de frize* of vessels of every variety. The city then seems to rise gradually from the water, till its summit is crowned by the gilded cone of the State House, the seat of the legislature of Massachusetts, the best situated and the handsomest building in the town. In its vicinity are the residences of the aristocracy, a short distance from Washington-street, which is the Regent-street of this metropolis. The shops, or 'stores,' are overflowing with goods, and seem well supplied with customers, the greatest proportion of whom consist of well-dressed, delicate-looking ladies. Leading out of this street is State-street, devoted to bankers and business. With a few exceptions the streets are narrow and crooked, and with the high brick houses remind one of the old world, with this pleasing difference, that *here* there are neither drunkards, beggars, nor bad smells. Perhaps seventeen miles of sewerage, and an almost inexhaustable supply of the purest water, may account for the absence of the last-named evil. Charitable institutions, temperance societies, better wages, and better education, may in some degree account for the absence of the two former.

PRESERVATION OF WOODS AND METALS FROM DECAY.—The composition specified in Machabee's patent is formed by melting together three 1-5th parts of vegetable tar, one part of mineral tar, one-sixth part of resin turpentine of *Pinus Larix*, one-third part of wax, one-sixth part of white grease, with or without the addition of one-third part of Roman cement, and a similar quantity of hydraulic lime in fine and sifted powder. The mineral ingredients are added to the others when in a boiling state, but are only required in those cases in which the material to be coated with the composition of mastic is to be exposed to the action of heat. The composition is applicable to wood, metal, brickwork, &c. the surfaces of which must be well cleaned prior to its application, which may be effected by means of a brush, whilst in a heated state, and any number of coats may be employed. When the composition is used for covering the inner surfaces of walls, a coating of plaster is applied over the mastic.—*Pharmaceutical Journal.*

THE SCHOOLS AND THE ROYAL SCOTTISH ACADEMY EXHIBITION.—The Council of the Royal Scottish Academy, with the view of making the exhibition more directly instrumental in the cause of general education, have made such arrangements as will enable the pupils of schools, accompanied by their respective masters, to make three or four visits to the galleries during the season, at hours when the general public are excluded.

TENDERS

The following tenders for the new London and Westminster Branch Bank, Holborn, have been received. Quantities supplied.

Haward and Nixon	£8,847
Cubitt	8,840
J. and C. P. Anson	8,680
Locke and Nesham	8,558
Pollock and Co.	8,180
G. Myers	7,676

TO CORRESPONDENTS.

"Vanbrugh" ("Numismator") asks, "Where the most authentic portrait of Sir John Vanbrugh, the architect, is to be found, where he was buried, and whether any monument has been erected to his memory?", "Colour" (we are often asked for "the composition for colouring external walls which will last longest, and resist the weather best"), "J. M. N.," "Q.," "W. H.," "X," "F. P." will appear), "R. R." (next week), "G. B." (many thanks), "Lady L." (ditto), "Archdeacon L. F.," "J. K.," "M. and M." (will appear: we shall be glad to see some of the drawings mentioned.), "W. S.," "J. T." (next week), "H. F. B." (thanks), "T. E.," "H. D.," "T. P. W.," "R. B.," "J. J. S." "H. P. B." "S. S." "J. S." "H. M." "Sigma," "T. H. R." "W. A." (we are unable to find room, at all events, at present), "H. D." Liverpool (the arrangement suggested is not new, and is being practised in London at this moment). If our correspondent "A Joiner," were to see the number of applications that are received in answer to the advertisements he alludes to, he would not be surprised, nor so angry as he appears to be, at not receiving replies to his letters.

"*Books and Addresses*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

TO BUILDERS AND CONTRACTORS, &c.

PARTIES in the above Line are respectfully informed that an OFFICE has been OPENED for the SUPPLY of FIRST-RATE MECHANICS (Carpenters, Joiners, Bricklayers, &c.) at the National Coffee-house, 1, Little Turnstile, Holborn, where all applications for men, addressed to W. RICHARDSON, shall receive immediate attention.

TO PARENTS AND GUARDIANS.

ARCHITECTURE.—Italy.—An Architect, who has some works going on in Italy, is desirous of taking a PUPIL who might be ARTICLED for a term of years, and who would have the unusual advantage of study abroad, as he would accompany the advertiser on a trip he will make in the course of the present year. A Pupil, for the trip only, might also be taken on advantageous terms. The most satisfactory references will be given.—For further particulars, address ARCHITECT, care of Mr. Norchi, 18, King William-street, Strand.

TO PARENTS AND GUARDIANS.

A LAND SURVEYOR and CIVIL ENGINEER resident in a large town in a central part of England, who is now engaged in instructive and very extensive works, is desirous to take a young gentleman as a PUPIL.—Further particulars may be known by addressing N. C. Z. at George Salmon, esq., 6, South-square, Gray's-inn, London.

TO DRAUGHTSMEN.

AN ARCHITECT and SURVEYOR is in want of a good and expeditious DRAUGHTSMAN, who has a good knowledge of construction and of buildings generally.—Apply by letter only, with every particular, to Mr. WAGSTAFF, Highbury-lodge, Islington.

TO ARCHITECTS AND CIVIL ENGINEERS' ASSISTANTS.

AN ARCHITECT and CIVIL ENGINEER, is in want of ASSISTANTS.—Apply, stating age, amount of salary required, and every particular, to Z. K. A. Office of the "Builder," 1, York-street, Covent-garden.

AN opportunity now offers for a Young Man, of from 16 to 18 years of age, obtaining a thorough BUSINESS KNOWLEDGE in the office of a highly respectable SAW MILL Proprietor, where he would have ample opportunity of learning the English and Foreign Timber Trades; and when of age, the prospect of a share in the business. A premium of 150*l.* required, and liberal wages will be given. Apply, in the first instance, to Mr. MAY, Surveyor, 90, Leadenhall-street, City.

TO ARCHITECTS AND SURVEYORS.

AN important OPENING now occurs in a cathedral city for an Architect and Surveyor desirous of PURCHASING an EXTENSIVE PRACTICE, lately vacated by the decease of a gentleman, whose professional talent had secured him the confidence of a large and increasing connection. Any professional gentleman of talent and capital may receive further particulars by communicating with A. Z. Warren's Library, London-street, Fitzroy-square.

AN ARCHITECT and SURVEYOR in the City is in WANT of ASSISTANCE. Address by letter, stating references, qualifications, and salary expected, to A. B. 25, Moorgate-street. A Pupil also required.

TO CARPENTERS.

WANTED, a WORKING SHOP FOREMAN, to superintend about eight or ten men. He must be a thoroughly active and intelligent man, competent to set out work in a first-rate manner; must have an excellent character from his last situation. One who has been used to shop-front work will be preferred.—Apply, stating wages expected, and where last employed, to A. B. at 80, Chancery-lane.

WANTED immediately, by an Architect in the country, an ASSISTANT, who is a good draughtsman and accustomed to the general duties of an office. To state qualifications and amount of salary required. Also wanted an Articled Pupil for a term of three or four years.—Address, J. G. care of Mr. James, No. 3, Francis-street, Hagley-road, Birmingham.

WANTED immediately, by an Engineer and Surveyor to a Local Board of Health, an intelligent and active young man as CLERK of WORKS; he must write well and be thoroughly conversant with the theory and practice of levelling to the greatest accuracy will be required. A person who has filled a similar situation would be preferred.—Applications by letter only, post-paid, containing references and stating the weekly salary required, to be made to Mr. PENTON, Chelmsford, Essex.

WANTED, by a Builder, on a permanent engagement, a thoroughly practical and competent CLERK of WORKS, or GENERAL FOREMAN, who has been accustomed to designing and superintending the erection and finishing of first-rate dwelling-houses, and measuring different works. Unexceptionable references required.—Address, post-paid, stating age, full particulars, salary, and by whom last employed, Y. Z. care of Mr. Were, No. 33, North Audley-street, Grosvenor-square.

TO JOINERS AND CARPENTERS.

WANTED, as FOREMAN, a first-rate Joiner, accustomed to Architectural and Cooked Work; also able to take out Quantities, and make Working Drawings. As it will be a confidential situation, he must be a man of steady habits and good character, who will strictly maintain his position. Apply to WHITE, PARLBY, and WHITELAW, 4, Bathbone-place, London.

WANTED, by an Architect in the Country, a properly qualified ASSISTANT.—Apply by letter, stating terms, age, and last engagement, to G. G. Office of "The Builder," 1, York-street, Covent-garden.

TO LAND SURVEYORS.

WANTED, by an Architect, a CLERK, who thoroughly understands Land Surveying and Levelling. A gentleman with a knowledge of the valuation of standing timber will be preferred.—Address, stating terms, to X Y. Carpenter's Library, St. Albans-place, Edgeware-road.

WANTED, a DRAUGHTSMAN, who is fully competent to get up working and other drawings, prepare bills of quantities, &c. and generally conversant with the routine of an architect's office. Apply, stating particulars, to Messrs. MILLS and MURGATROYD, Architects, Manchester.

TO CARPENTERS AND JOINERS.

WANTED, in the Country, a SHOP and GENERAL FOREMAN. Should be a good joiner, as he will be required to work at the bench; also to take charge of the timber-yard, and have the superintendence of about a dozen joiners. He should be able to "set out" work from drawings furnished to him. A steady and trustworthy man will find this a good opportunity for securing a permanent situation. Apply by letter, to X Y. Z. Post-office, Wrexham, Denbighshire, stating age, references, and salary required. Also, three or four good bench Hands will meet with permanent employment by applying as above.

WANTED, a SITUATION, as FOREMAN of BRICKLAYERS, by a person who has just completed a building in the City.—Address, F. G. No. 17, Tunbridge terrace St. Andrew's-road, Newington.

WANTED, a SITUATION as CLERK of WORKS, OUT DOOR or GENERAL FOREMAN, in town or country. Address, W. S. 33, Sloane-street, Chelsea.

TO COUNTRY BUILDERS AND OTHERS.

WANTED, by the Advertiser, a SITUATION as SHOP FOREMAN, or to take charge of the out-door department only.—Address, S. S. 22, Duke-street, Lincoln's-inn-fields.

WANTED, by a Young Man, CONSTANT EMPLOYMENT as LEAD-WORK GLAZIER and PAINTER. Can make himself useful at the Plumbing Business if required.—Address L. C. care of S. MULLINS, Princes Coffee House, 93, Prince's-road, Lambeth.

TO BUILDERS, &c.

WANTED, by a Young Man, 22 years of age, who has had some years experience in a Builder's Office as general Clerk and Book Keeper, a similar SITUATION. A small salary will suffice.—Address, A. B. 60, Allerton-street, East-road, City-road.

TO BUILDERS, &c.

THE Advertiser, an experienced Man, 35 years of age, is in want of a SITUATION as SHOP or GENERAL FOREMAN. Respectable reference given.—Direct, A. Z. Office of "The Builder," 1, York street, Covent-garden.

TO BUILDERS.

THE Parents of a Youth 17 Years, of age, are desirous of placing him as PUPIL with a Builder of good Practice, where he may obtain a thorough knowledge of the business in its various branches. Address, stating premium, and full particulars, to E. A. D. Post-office, Chelmsford.

A YOUNG MAN of respectability is desirous of an ENGAGEMENT in the office of a Builder in town; he is well acquainted with the duties of the office, and has a thorough practical knowledge of the business. Salary not much object; and can produce good testimonials.—Address, T. B. Mr. Edgehill's, 395, High street, Borough.

TO PLUMBERS, PAINTERS, BUILDERS, &c.

THE Advertiser, a practical man, who has had the entire management of an extensive business, wishes to meet with a similar SITUATION as FOREMAN, &c. No objection to the country. Satisfactory references will be given.—Address, A. B. No. 1, Cushion-court, Old Broad-street.

TO BUILDERS, &c.

A YOUNG MAN, aged 24, is in want of a SITUATION as CLERK in a Builder's Office, and would not object to filling up any vacant time by working at the bench, or otherwise.—Address, W. A. B. 25, Freeling-street, Caledonian-road.

A GENTLEMAN who wishes a change of climate, and who has had considerable professional practice in landscape gardening and garden architecture is desirous of DISPOSING of his PLANS and SPECIFICATIONS, &c.; his furniture, as also a short lease of his house and office, may be had. Letters from principals, with respectable references, will be attended to. Address, J. P. at C. Sawyer and Son's, Newspaper Agents, 7, St. Michael's-alley, Cornhill, London, will be attended to.

TO ARCHITECTS, &c.

THE Advertiser, of twenty years' experience, is a good, quick draughtsman of acknowledged taste and ability, possessing a thorough practical knowledge of every department of the profession—specifications, quantities, and estimates; the last two years he has been engaged on some of the most extensive works in the metropolis—desires a RE-ENGAGEMENT.—P. Q. R. Office of "The Builder," 1, York-street, Covent-garden.

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WANTED, by an active Young Man, a SITUATION, in town or country, as CLERK or FOREMAN. Can measure and make out estimates for new works, general repairs, &c.—Direct G. J. 24 Earl-street, Finsbury.

A YOUTH, in his 17th year, who has served two years in the office of an Architect and Surveyor, is desirous of a similar SITUATION.—Address, A. B. 15, Chandos-street, Strand.

BUILDING LAND at CROYDON.—Some very desirable LAND TO BE LET, on lease, close to the Railway Station, for the erection of third-rate houses, that are much in request in the neighbourhood. Money advanced, if required. For plans and particulars, apply to Mr. ARTHUR TAYLOR, Architect and Surveyor, 18A, Basinghall-street.

BUILDING LAND at TOTTENHAM.—Money advanced. A few remaining PLOTS TO BE LET, on lease, with a frontage in West Green-lane; the houses that have been erected on this estate command very remunerative rentals, the situation being unexceptionable. For plans and particulars, apply to Mr. ARTHUR TAYLOR, Architect and Surveyor, 18A, Basinghall-street.

BUILDING LAND.—QUEEN ANNE'S PARK, STROUD GREEN, HORNSEY.—The roads and sewers being now complete, several Plots may be had on Lease for Building Purposes at moderate terms; the situation is very elevated, and commands the most extensive and beautiful prospects to be found within five miles of the metropolis.—For terms and particulars apply to Mr. ARTHUR TAYLOR, Architect and Surveyor, 18A, Basinghall-street.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views.—Money advanced, and bricks may be had, delivered on the site of the intended building, at 30s. per thousand.—For particulars, apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

TOLLINGTON PARK.—VALUABLE FREEHOLD BUILDING GROUND TO BE LET on LEASE for 99 years, at low ground-rents, suitable for the erection of second and third rate houses. Omnibus communication from the City and West end every five minutes. Money advanced.—For particulars, apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

FREEHOLD BUILDING GROUND, of a first-class character.—TO BE LET, a very attractive PIECE of superior LAND, advantageously situate within three miles of the Post-office, with a considerable frontage to the high road, and most admirably adapted for erecting detached or semi-detached villas, which are much needed and constantly sought after. The respectable and healthy character of the locality, and its proximity to the metropolis, make it a very desirable situation.—For particulars apply to Mr. HERBERT PRICKETT, Surveyor and Estate Agent, 15, Chancery-lane, and 23, Paddington-green.

BUILDING LAND.—TO BE LET, on Building Leases, on the usual terms, either the whole or part of a PIECE of LAND, containing 3 a. 1 r. 27 p. lying between King Edward's-road, on which it has a frontage of 500 feet, and the Victoria park canal, Hackney, near the Eastern-road, with a carriage-way into the Victoria-park-road. Advances not exceeding 50 per cent.—For particulars, apply to Messrs. PRICKETT and SON, Surveyors, 34, Southampton-buildings, Holborn.

EAST HAM, ESSEX.—TO BE LET or SOLD, TWO PIECES of very superior MARSH LAND, containing together SIXTEEN ACRES, on which is erected a substantial Six Roomed House, with stabling and other extensive buildings recently erected; the land is very sound and dry, and is well adapted for market gardening, building, and brickmaking, there being an abundant supply of very excellent brick earth underneath the whole. It adjoins the high road leading from the Barking road to Woolwich-ferry, within less than a mile of the river, where any commodity may be shipped or landed free of charge, and is situated near the proposed site of the Victoria Docks; the railway connected therewith runs through part of the property. The two marshes will be disposed of either together or separately.—For particulars apply to Mr. THOMAS EVANS, Land Agent, 9, Brunswick-street, Barnsbury-road, Islington.

BARNES, SURREY.—TO BE LET, on Building Leases, a considerable extent of the frontage next the High-road, leading from Hammersmith Suspension bridge to Barnes.—For particulars apply at the Offices of Messrs. WIGG, POWNALL, and WIGG, 7, Bedford-row.

TO BUILDERS AND OTHERS.

HAMPSTEAD. — BELSISE-PARK. — TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot in or London, approached from the Finchley road, near the Swiss Cottage, and from the Hampstead road through the well-known avenue of stately elms, and bounded on the north by Belsise-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr. C. J. RICHARDSON, Architect and Surveyor, 3, Keppell street, Russell-square.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston: term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 25, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate.

THE MARQUESS of NORTHAMPTON'S ESTATE, CANONBURY.—BUILDING LAND TO BE LET, for semi-detached Villa Residences, in this highly-favoured locality, on the banks of the New River. For long terms, at moderate ground-rents, land tax redeemed. Money advanced, if required. Apply at Mr. JAMES WAGSTAFF'S Offices, Highbury Lodge, Islington.

BUILDING LAND TO LET, and a large quantity of OLD BRICKS for SALE, the ground situate in Bethnal-green-road, Pimlico, near to Eccleston-square, for about twenty fourteen-roomed houses, offering first-rate advantages, property of the kind being in great request in the neighbourhood. —For particulars, apply to Mr. G. HUGHTON, Mineral Rock Asphalte Company's Office, 13, Beaufort-buildings, Strand.

CORNER of CANNON-STREET and KING WILLIAM-STREET.—To Public Companies, Bankers, and others.—TO BE LET, in the new building in this excellent situation, a range of first-class premises, consisting of a ground-floor of 2,300 square feet clear, with the frontage of 100 feet; excellent light, and every convenience; quite distinct from the upper part, which is first-class offices, some of them still to let, and fire-proof.—Apply, between the hours of eleven and two, to Mr. W. H. DAWSON, Abchurch-yard, City.

TEDDINGTON, near Bushey-park and Hampton Court.—FREEHOLD.—Several valuable PLOTS of GROUND TO BE LET, on Lease, or TO BE SOLD.—Address, A. B. 24, Gates-street, Poplar.

TO BE LET, adjoining the West Drayton Station, on the Great Western Railway, about 13 miles from London, several PLOTS of BUILDING LAND, some of which abut on the Grand Junction Canal, land-tax redeemed. To MANUFACTURERS and OTHERS.—TO BE LET, on Building Leases, several PLOTS of LAND, with extensive frontage on the Grand Junction Canal, near the West Drayton Station, on the Great Western Railway, about 13 miles from London.—For particulars, inquire of Mr. CORBETT, West Drayton.

SPACIOUS PREMISES TO BE LET in HUNGERFORD MARKET, containing a large room or theatre, suitable for exhibitions, &c. with light and commodious bazaars compactly therewith suitable for the depot of manufactured or agricultural implements, and all kinds of manufactured or other goods works of art, &c.; or the premises are capable of being adapted for a variety of other purposes.—Apply to Mr. KILPIN, Secretary, Hungerford-market Office, 9, Villiers-street, Strand.

WHARFS ON THE ADELPHI.—TO BE LET, for a term, or by the year, together or separately, TWO WHARFS, each having a house, counting-house, stores, and stabling, one with frontage for 15 barges, and the other for 25 barges; each having a dry dock.—Rent moderate.—Possession immediate.—Ref rence for further particulars to be made to Mr. CHARLES PALMER, Swan with Two Necks General Railway Office, Gresham-street.

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WANTED to PURCHASE, a PLOT of FREEHOLD LAND, from a quarter to half an acre in extent, situate within three miles of the General Post-office, suitable for the erection of almshouses. Good drainage and a supply of water are indispensable.—Terms and particulars to be furnished to Mr. SAMUEL ANGEL, 18, Gower-street, Bedford-square.

FREEHOLD LAND for SALE in one lot, or in lots of not less than ten acres, each close to a railway station, five miles from London. The land has several thousand feet of frontage to the high road.—Apply to Mr. KING THOMAS, Architect, 4, Goldsmith-street, Gough-square. A Brickfield to Let also.

TO CAPITALISTS, BUILDERS, AND OTHERS.

WESTON-SUPER-MARE, SOMERSET.—The only FRONTAGE LAND to the SEA remaining unbuilt upon in the town.—TO BE SOLD, the Fee Simple and inheritance of and in HALL those several PLOTS of FREEHOLD LAND (in one or more lots), as now marked out for building on an intended NEW SQUARE FRONTING OPEN ON THE WEST SIDE TO THE ESPLANADE AND THE SEA, OVER WHICH THERE IS AN UNINTERRUPTED VIEW. The square is intended to be 200 feet from north to south, and 300 feet from east to west, and to communicate on the east side with a handsome NEW STREET, about 40 feet wide and between 400 and 500 feet long. The valuable property is bounded on the south by Recent-street, and on the north by the Hotel-field, and contains altogether nearly four acres of the finest building land. "The finest Build ne Stone at 1s 8d. per ton; Lias Lime 6s. per 100 bushels; best Building Brick 21s. per Thousand, all delivered. The finest Building Sand on the spot, gratis. Timber, Bath Stone, &c. by Sea and Rail into the place, free from all Town and other Dues." These lots may be purchased or held on ground-rents at the option of the purchasers.—Plans and further particulars may be had of the proprietor, B. GUY PHILLIPS, Esq. West-n-super-Mare.

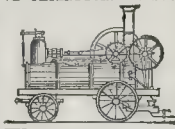
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FOR SALE, at Ely, near Cardiff, Glamorganshire, a large STOCK of dry ENGLISH OAK, ASH, and ELM PLANKS and BOARDS of different lengths, and from half an inch to six inches in thickness. Also, several Sets of Wheel Stocks and Spokes, together with a considerable quantity of sawed or half inch coffin boards. The above timber is well seasoned, being from nine to nine years' stock, and will be found suitable for implements of husbandry, carriages, furniture, and building purposes, and will be sold in such lots as purchasers may require. Also, TO BE LET, and entered upon on the 1st of May next, the whole of the commodious Premises, consisting of a spacious workshop, show-room, smithy, pent-house, timber-yard, saw-pit, and dwelling-house, with about 9 yards of Ely Station, on the South Wales Railway, where goods may be easily viewed and conveyed to any part of the kingdom. The above premises are well calculated for carrying on an extensive business in either of the above trades, and may be seen on application to the Executor, Mr. SAMUEL EDWARDS.—Ely, April 20, 1853.

FREEHOLD GROUND, BARNET.—TO BE SOLD, by PRIVATE CONTRACT, between 12 and 13 acres of valuable BUILDING GROUND, having a long frontage to the turnpike-road from Whetstone to High Barnet, and within three quarters of a mile of the East Barnet station, on the Great Northern Railway. This land is beautifully situated, with a warm and cheerful aspect, commanding fine views, and well adapted for all building purposes its proximity to the railway station and to the towns of High Barnet and Whetstone, and its easy distance by turnpike-road to all parts of the metropolis, render it worthy the attention of Building Societies as well as for private speculation.—For particulars apply at the Office of Mr. THYNNE, 11, Great George-street, Westminster.

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WARNER'S PATENT CAST-IRON PUMPS, for the use of FARMS, COTTAGES, MANURE TANKS, AND SHALLOW WELLS.

Patent Pump	£1 15 0
Patent Pump, with 12 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

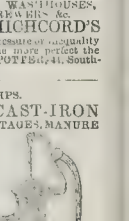
To emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and cheapest pump hitherto introduced.

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Every description of Machinery for raising Water, Fire Engines, &c.

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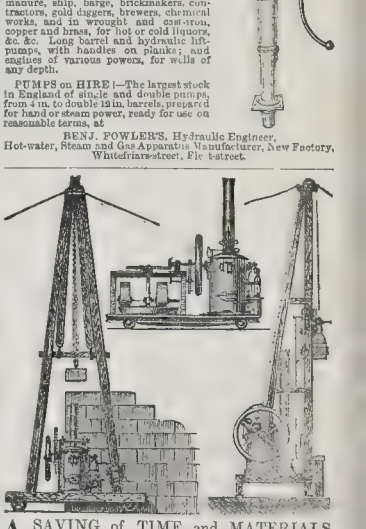
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A SAVING of TIME and MATERIALS with solidity of Building.

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TESTIMONIAL

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir.—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERNETHY.

AWARDED a PRIZE MEDAL under CLASS XIX.—TO THE CARPET TRADE.—ROYAL VICTORIA FELT CARPETING.—The Patent Woollen Cloth Company beg to inform the Trade that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any that have hitherto produced, both in style and variety. The public can be supplied at all respectable Carpet-houses in London and the country. The Company deems it necessary to caution the public against parties who are selling an inferior description of goods as Felted Carpet, which will not bear comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.

The Company's Manufactories are at Elmwood Mills, Leeds; and Borough-road, London. Wholesale Warehouses at 8, LOVE-LANE, WOOD-STREET, CHEAPSIDE.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the materials used in its manufacture, or to produce it an imperfect mode of product on, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark—In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. T. H. MORLEY and CO.; and by the Company's Grinding Agents, In London, Messrs. CHARLES DEVAUX and CO., wholesale agents, 62, King William-street, City: Mr. CHARLES JACK, wholesale and retail agent, 8, Tottenham-court, New-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO. of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO., Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 13, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT.—The PERMANENT WHITE of the Ancients, by its costliness hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of the latter with seven gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in fact, as well as more desirable on every other consideration. To a contractor for extensive works tak n at competition prices this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.

For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT is found superior to every other paint known, and equally adapted for all climates.

A circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Docks).

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. From this fact it is reasonable to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority in body; by which term the power of covering surface well and extensively is understood among Painters. This superiority of body, however was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this respect beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of course being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Painting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

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HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE, Sole Manufacturers in the United Kingdom,

Now supply this innoxious substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock Rotherhithe).

In 14 lb. Kegs, and upwards, from the Depôts of their respective Agents:—

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ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent men, of its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard-street, London.

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THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactur d at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufa turing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cem nts, English and French Plaster, &c.

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ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the addition al advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be ob tained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

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Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of this cement without any increase in price.

Engineers and architects are requested to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. now call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerabl cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 61, King-street, Liverpool.

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PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured only at R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, as also at his Wharfs in London, 6, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

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GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Blue Slate, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

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Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is sold and in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The incombustible and valuable qualities of Roman Cement are superseded by the use of this improved manufacture.

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EXTENSION OF LIMITS OF RESIDENCE. The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira, the Cape, Australia, New Zealand, and in most parts of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit distributable in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with, at the same time, complete freedom from liability to the contingencies to these office all the advantages of both systems.

The Assurance Fund already invested amounts to 350,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM. On Policies for the whole of life, one-half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES.—Five Bonuses have been declared; at the last in January, 1852, the sum of 131,192l. was added to the Policies, producing a Bonus varying with the different ages from 2l. 5s. per cent. on the Premiums paid during the five years, to 6l. to 12l. 10s. per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one years Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1855; thereafter those who effect Policies before the 30th June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES. The accrued future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than those of most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are indisputable except in cases of fraud.

INVALID LIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within fourteen months.

The accounts and balance-sheets are at all times open to the inspection of the assured, or of persons desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.

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FIRE-BRICKS, PATENT GLAZED STONEWARE DRAIN PIPES, CLOSET PANS, ORNAMENTAL TRUSSES, BRACKETS, MODILLIONS, PEDESTALS, VASES, &c.;

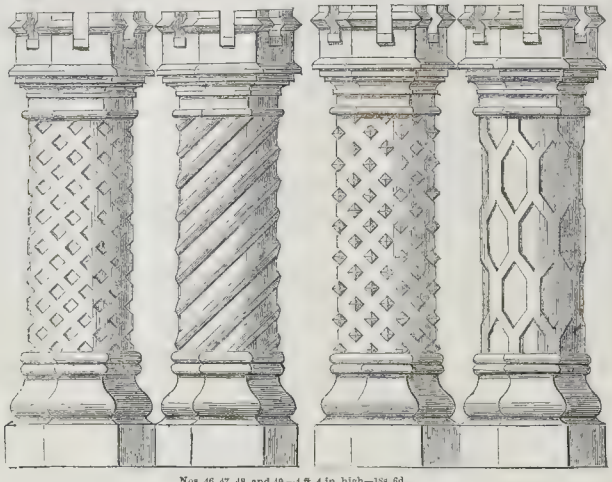
ALSO OF

TERRA COTTA CHIMNEY-TOPS,

In upwards of One Hundred Patterns, of various dimensions and of first-rate design, a few of which are given below,—scale half an inch to a foot.



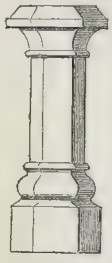
No. 67.—Wind-guard. 3 ft. 6 in.—10s.



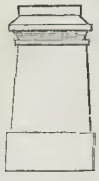
Nos. 46, 47, 48, and 49.—4 ft. 4 in. high—18s. 6d.
" " 6 ft. 0 in. " 25s. 0d.
" " 9 ft. 0 in. " 60s 0d.



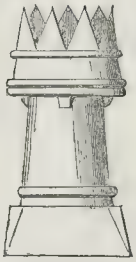
No. 65.—3 ft. 6 in.—7s.6d.



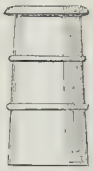
No. 38.—3 ft. n.— 8s. 0d.
4 ft. n.—10s. 6d.



No. 18.—Oblong or Square.
2 ft. 3 in.—2s. 2d.
2 ft. 6 in. 2s. 6d.
3 ft. 9 in.—4s. 0d.



No. 24.—Wind-guard.
3 ft. 6 in.—5s.



No. 3.—2 ft. 0 in.—1s. 6d.
2 ft. 6 in.—2s. 0d.



No. 11.—2 ft. 6 in.—3s. 6d.
2 ft. 10 in.—5s. 0d.
3 ft. 8 in.—8s. 0d.



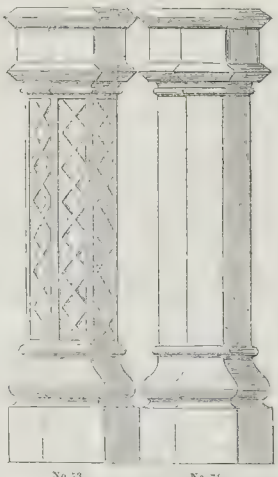
No. 13.—3 ft. 1 in.
4s. 6d.



No. 66.—Plain or Wind-guar
3 ft. 10 in.—10s. 6d.
4 ft. 2 in. 12s. 6d.
4 ft. 8 in.—15s. 0d.



No. 76 (round).—1 ft. 10 in. high—2s. 6d.

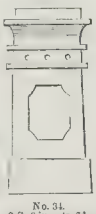




No. 75 (square).—1 ft. 10 in.—2s. 6d.



No. 50.—4 ft. 3 in.—15s.
6 ft. 6 in.—20s.



No. 34.
2 ft. 9 in.—4s. 6d.



No. 12
2 ft. 9 in.—4s.

No. 73
6 ft.—20s.

No. 74
6 ft.—25s.



No. 21
Oblong or Square
2 ft. 0 in. 2s 0d.
3 ft. 10 2s 6d.
4 ft. 6 in. 3s 6d.



No. 4.
2 ft. 8 in.—3s. 6d.



No. 70.
4 ft. 3 in.—15s.

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LONDON..... No. 14, York Chambers, George-street, Adelphi; No. 16, Bath-place, New-road; St. Ann's Wharf, Limehouse.
BIRMINGHAM.. No. 7, Ensy-row; also King Alfred-street, adjoining Bingley-hall, and Lawley-street.
BRISTOL ..... No. 14, Nelson-street.
LIVERPOOL .... No. 9, Russell-street, and Shipping Wharf, Leeds-street.
MANCHESTER.. No. 43, Travis-street, and 23, 24, and 25, Birmingham-street, London-road.
HULL..... No. 2, Humber-street, and Wellington-street.
BRADFORD..... Houghton-lane, Manchester-road.
LEEDS ..... Wellington-street, adjoining the Midland Station, and Shipping Wharf, Victoria Works, Hunslet.

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The Builder.

SATURDAY, APRIL 30, 1853.

THE general meeting of the Art-Union of London was held on the 26th, in the Theatre Royal, Lyceum, when the Right Hon. Lord Monteagle took the chair; and Mr. Geo. Godwin, F.R.S. Hon. Sec. read the following

REPORT.

The Council of the Art-Union of London have to report to the members that the subscriptions in this, *the seventeenth*, year of the society's operations, amount to the sum of 13,348*l.* 13s.; and they can state with certainty that the total would have been much larger if the principal engraving for the year, "The Surrender of Calais," had been completed at the time arranged, so that impressions might have been issued when the subscriptions were received. It is due to themselves to state, that the engraver was bound to finish this plate by the year 1850, and that it did not reach the Council until last month, he having had it in his hands five years instead of two. The Council strive to make those arrangements which will best serve the interests of the Corporation and advance its objects; but, unless aided by the adherence and health of the artists to whom commissions are intrusted, they cannot insure the desired result. The engraving in question is now at the printer's, and impressions will be distributed at the earliest possible moment. The impressions of the ruled engraving, "Christ led to Crucifixion," will be issued at the same time. "The Piper," after Mr. F. Goodall, A.R.A. is completed; and "Richard Cœur de Lion," after Mr. Cross, is very nearly so. Each subscriber for the ensuing year will receive impressions of these two plates. The Council have in their hands a finished plate by Mr. Willmore, from the picture, "Wind against Tide: Tilbury Fort;" by Mr. Clarkson Stansfield, R.A. the appropriation of which has not yet been determined on. They have also a plate, by the same engraver, from the picture, "A Water Party," by Mr. J. J. Chalon, R.A. Many of the drawings intended to form a volume illustrative of "Childe Harold," have been engraved; and others are in progress. A picture by Mr. Frith, A.R.A. "Scene from the Bourgeois Gentilhomme," has been placed in the hands of Mr. Maguire, to be produced in lithography. In continuation of the medallic series, Mr. B. Wyon has been commissioned to produce a medal commemorative of Vanbrugh, the architect of Blenheim; and Mr. Carter, to execute a medal of Sir Thomas Lawrence.

The tazzas in iron, allotted at the last general meeting, have been forwarded to those who were entitled to them. It has been determined that members who pay a subscription for ten years in advance may receive a tazza, as a bonus, in lieu, if preferred, of a silver medal, to which, under an existing arrangement, they would be entitled. It has been further determined to reproduce the tazza in coloured Wedgewood ware.

The works of art selected by the prizeholders last year, 144 in number, were exhibited in the Suffolk-street Gallery, by the kind permission of the Society of British Artists, and were visited by a very large number of persons, including, for a time, the general public without any restriction, and, as usual, without the occurrence of the slightest accident or impropriety. The English public have shown most conclusively that there are no grounds whatever to justify their exclusion from public monuments and works of fine art, and experience leads to the conviction that it is the duty of all who desire the moral, intellectual, or industrial advancement of the country to increase the facilities of admission to such works, and to make the public eye familiar with objects of beauty and taste. What good example does in morals, familiarity with fine works will do in art. The eye accustomed to beautiful forms and harmonious colours will not be satisfied with that which is inferior. Those who know the beautiful and true will neither voluntarily desert their standard nor be imposed on by pretenders.

Some changes have been made in the Council, in accordance with the bye-laws. The Right Hon. the Earl of Arundel and Surrey, and the Right Hon. Lord Londesborough, heretofore ordinary members of Council, have been elected vice-presidents. The Right Hon. Lord Chief-Justice Jervis has ceased to be a member of the Council; and they have been deprived by death of the services of Richard Morris, esq. one of the earliest members of the Corporation, whose loss they much deplore. The vacancies have been filled by the election of Edmund Antrobus, esq. John Britton, esq. W. Carpenter, esq. (of the British Museum), and Major-Gen. Sir W. Herries.

The list of local honorary secretaries has been increased by additions in various parts of the world, and strengthens the social chain which is gradually binding the nations. Amongst the most interesting returns from abroad may be mentioned the receipt of 149 subscriptions from the gold-diggers of Australia. We may be excused for anticipating good effects on the society there from this occurrence, and for imagining the gratification which our engravings may give. "The Merry-making" will serve to remind the far-distant toilers of the leafy country of their birth, and the harmless enjoyments of their forefathers; while the "Surrender of Calais" will recall a brilliant passage in English history, and teach, as well the loveliness of mercy as the value of bravery and resolution.

The information which reaches the Council from the honorary secretaries abroad is sometimes less satisfactory than curious; as, for example, when they are told as a reason for the comparative smallness of the list of subscribers from Berbice, that in a population of 27,000, only 1,533 persons can read and write. It would seem to be premature to say the schoolmaster is abroad.

From Boston, in the United States, through Mr. Dennet, we have received, as usual, a large number of subscribers.

In the department of sculpture the Council, anxious to obtain a memorial of the late great commander, the Duke of Wellington, offered a premium of 150*l.* for the best plaster model, in low relief, illustrative of an event in his military life, intending to issue an engraved representation of it to each subscriber. Several models were submitted, but unfortunately there was not one in accordance with the terms of the advertisement which was sufficiently good to justify the award of the premium. Two of the models, in high relief, had great merit, and the Council have since purchased one of these, "The Duke's Entry into Madrid," by Mr. Jefferson, and propose to reproduce it in bronze for distribution.

It is scarcely possible now to find persons wholly unacquainted with the objects and proceedings of the Art-Union, so extensive have been its announcements and issues; but many are ignorant of the extent of its operations, and would be surprised to hear that through its direct medium at least 170,000*l.* have been expended for the encouragement of art and artists. The prizeholders have spent upwards of 90,000*l.* in the purchase of pictures; the Council above 40,000*l.* on these and other works of art. For pictures purchased from the Royal Academy alone more than 34,000*l.* have been paid. Engravers have received from the society 18,000*l.*

The reserved fund now amounts to 5,223*l.* 9s. 4d.

The following is a statement of the receipts and expenditure for the present year:—

Amount subscribed		£13,348	13 0
Set apart for pictures and other prizes	£8,001 0 0		
Cost of engravings	2,548 8 1		
Printing and other expenses, with reserve of 2½ per cent.	2,799 4 11		
		£13,348	13 0

The accounts have been audited by two members of the general body of subscribers,—Mr. Jerwood and Mr. Wroughton (to whom thanks are offered), and three members of the Finance Committee.

The sum set apart for prizes, to be selected by the prizeholders themselves, will be thus allotted, viz.:—

		Each.
25	works of the value of	£10
20	,,	15
30	,,	20
28	,,	25
28	,,	40
12	,,	50
15	,,	60
12	,,	80
5	,,	100
2	,,	150
1	,,	200

To these may be added:—

5 bronzes, "Satan Dismayed;"
10 bronzes, "Boy at a Stream;"
30 tazzas in iron;
50 Parian statuettes, "Solitude;"
50 porcelain statuettes, "The Dancing Girl Reposing."
500 impressions of "The Crucifixion."

The total sum appropriated to the purchase and production of works of art, including the cost of the engraving, is 10,549*l.* 8s. 1d.

The bronzes, Parian statuettes, and tazzas will be allotted to the first 145 names drawn consecutively, at the close of the general distribution. The engravings of "The Crucifixion" will be allotted to the names standing one-hundredth in the list preceding and succeeding that of each of the first 250 prizeholders determined as above stated; with the proviso that a prize has not fallen to that number to-day, in that case the prize will pass to the next succeeding name. Notice will be sent to those entitled to the statuettes, tazzas, and prints, in the course of two or three days. The other prizeholders will be informed of the result by to-night's post.

The Council announced in their last report that they had addressed a communication to the Council of the Royal Academy, setting forth that it was very desirable to obtain for the principal prizeholders admission to the private view of this Exhibition, and soliciting that a card should be sent for that purpose to every holder of a prize of 40*l.* and upwards. The Council pointed out, what must have been evident, that they had no other motive in making this application than a desire that the funds subscribed through the Corporation for the advancement of the fine arts, and the benefit of artists, should be expended in the manner best calculated to advance those important objects. The Council now report with regret that the application was not successful. In reply, the secretary, Mr. J. P. Knight, said, he was "requested by the President and Council to state, that the regulations of the Royal Academy do not admit of their complying with the recommendation of the Council of the London Art-Union."

The Council view with great gratification the endeavours which are being made to increase the means of artistical education throughout the kingdom. In a financial point of view, improvement in the artistic features of our manufactures is of the utmost consequence to the country. Excellence in this respect has given France the market of the world in several departments of industrial skill. To obtain a real improvement, the whole people must be educated to a certain extent in art. So long as they remain uninstructed in this respect, so long the worst patterns and forms will be preferred, and of course, therefore, produced. Manufacturers cannot afford to fight against public taste. They might improve it, but they would probably be ruined in the struggle. Artistic education has come to be considered by intelligent minds an object of great national solicitude; and a system of instruction is now fructifying in England, from which very advantageous results may be expected. The establishment of elementary drawing-schools has been prosecuted vigorously throughout the country,—a most important step,—and other causes are in operation which may be looked to hopefully. The bequests of Mr. Vernon, Sir Francis Chantrey, and Mr. Turner, will materially affect the extent and character of our public collections, and the inquiry which is being instituted as to the best means of rendering our National Gallery most effective for its pur-

pose, ought to lead to important improvements in its scope and arrangement. The establishment of museums and galleries throughout the provinces is much to be desired,—not merely for the general improvement, but for the special advancement of the particular manufactural operations carried on in the different towns. There is an Act of Parliament enabling town councils to establish public museums, and in many instances instructive collections of casts and pictures might be made with very little difficulty. There is so much public spirit in the kingdom, that, if fitting receptacles were provided, and a proper appreciation of such gifts shown, donations of works of art would be constantly made to the public. The trustees of the National Gallery are forced to refuse, from time to time, many offered donations for want of space.

It is to be hoped that before long we shall find a public gallery in every town, elementary drawing-schools in every village, and a draughtsman in every house. The extension and classification of the National Gallery, so that it may illustrate the whole history of art, is much to be desired. Having first accumulated, we should now separate and classify.

The idea of forming a more complete museum of fine arts, embracing architecture, sculpture, and painting, in close connection with schools for general industrial training, has been mooted by the Royal Commissioners of the Great Exhibition. Without desiring to intrude any opinion on the subject, the Council may point with gratification to the circumstance as evidencing a determination in the highest and most influential quarters to advance the artistical education of the country, and to provide additional means of instructive and elevating recreation. As a nation we are still young in art. For the founder of our school we cannot go farther back than Sir Joshua Reynolds; and our National Gallery was not commenced until 1823. We have had great painters since Reynolds, and the English school, in some departments, stands at the present moment the first. In the highest department of art, the ideal, fewer successful efforts are made than might be desired; mainly, perhaps, because there are fewer appreciators and purchasers for such works than for those of a less elevated character. The Westminster Hall exhibitions showed the germ of power in this respect, which only needed proper nurture to be worthily developed. Society should remember that those who produce works which win to thought, nourish high feelings, refine and ennoble, are benefactors to mankind, and should receive, not merely encouragement and aid, but honour and reward. Our church does not offer any assistance to art; the state does little more; but in the middle classes, amongst the great contractors and merchants of our time, we have picture-buyers more numerous and more munificent than were ever found in this kingdom. If the aid which they can offer be directed into the right channels, the English school of art cannot fail to advance.

On various occasions your Council have ventured to suggest that our great corporations should devote some of their wealth to the decoration of their halls with works of fine art,—"That they should enlist the powers of art to teach as well as adorn, and so aid in developing them."

The Corporation of London have taken an important step in this direction, and have commissioned six leading sculptors to produce statues in marble from the English poets for the adornment of the Mansion House. It is to be hoped that this good example will speedily be followed in other quarters.

The Council have probably said enough to show that a consideration for art is spreading on all sides, and that the prospect is encouraging. To the production of this state of opinion the Art-Union of London has mainly contributed, and on this ground alone, if there were no other, is entitled to your strenuous support.

George Godwin, } Hon. Secs.
Lewis Pocock, }

The Chairman.—Ladies and Gentlemen,—It becomes my duty, which I am glad to say, for your sake as well as my own, will be a short and easy one, to move that the report which you have just heard read by Mr. Godwin be adopted as the report of the society. I am sure there is no one among you who has given their attention to that document, who must not have followed, with instruction as well as gratification, the very material, as well as interesting questions which it propounds, elucidates, and in many instances, I may say, confirms and demonstrates. Among these there is one question which it slightly touches upon, but which, on an occasion like this, always deserves to be adverted to;—the history of our own establishment is in itself worthy of observation. This, I think, is now our seventeenth year; but to those to whose exertions you owe your success,—to whose perseverance, under good report and under evil report, you owe the position in which you are now placed;—to them it is a source of deep interest, not only in respect to your own society, but to all kindred ones, to recollect the circumstances under which your society was founded,—to recollect the difficulties against which you had to contend,—to recollect the calumnies with which you were assailed—to recollect that your field of battle was not only in the Press, where, it is true, we had very few opponents, but that you were threatened with that worst of all battlefields that can well be conceived—the courts of law. I speak with all possible respect for a learned friend of mine who sits near me, and to whom you all owe very much; but I do feel that to the danger of that battle-field to which I have referred, even Waterloo itself, with all its blood and glories, seems less a field impressed with danger and with horror. Ladies and gentlemen, we fought our battle, and we succeeded; but why have we succeeded? Because the principle for which we contended was true and just; because, being just, it was simple and intelligible, and appreciated by the English people; because it was not, as has been suggested, dependent upon any attempt to delude, to excite, to give an undue activity to a fictitious love for art, but rather to give an encouragement and a direction to that love of art which, I will venture to say, whatever some of our foreign detractors contend to the contrary, is as inherent in the British people as it is in any modern people of the civilized world. Ladies and gentlemen, this is happily a fact;—I deny its being a boast;—I affirm that it is a mere statement of fact, and as a proof of that fact (I do not use a laboured argument) I appeal to one name, and upon that single name, as compared with all the artists of Europe combined—upon that comparison I stake the result. I say that that champion for England in art—that name which ought always to be pronounced with reverence, and by those who knew him (of whom I was one) with affection as well as reverence, is the name of Flaxman. Let me see amongst our foreign rivals any man who, in the great powers of invention, and in the purity of taste which led to the production of works that will live as long as our religion continues to be cherished, and which have been multiplied to an extent which cannot be rivalled by any one else—let me see when and how and where the glory and dignity of Flaxman can be surpassed.

Mr. Alderman Wilson, in seconding the motion, said, after having been a member of the council now for a period of seventeen years,—being indeed one of the first council of the society, you may suppose how gratifying it is to me to find that the corporation of the city of London are at last beginning to turn their attention to the fine arts. I hope, ladies and gentlemen, it is but a beginning, and that it will go on to a large amount in the end. I can assure you there is plenty of room in the Mansion House for works of art of all sorts; not only sculpture, but paintings; and I know of no building of such an extent that has so few works of art in it at present as the Mansion House: therefore, it is exceedingly gratifying that there is a good prospect now that the movement which has at last commenced will succeed, and go on to a very large outlay.

The motion was carried unanimously.

Mr. Fahey proposed the thanks of the meeting to the council for their services during the past year. He had witnessed the zeal and assiduity of the Council for a great many years, and could bear testimony to their great exertions, and the valuable results.

Mr. Watts seconded the resolution, which was also carried unanimously.

Mr. Serjeant Thompson proposed the thanks of the meeting to the honorary secretaries for their services in promoting the objects of the society. The noble president, he said, had adverted to the many difficulties which at one period almost prevented the society from proceeding at all. Among other things, he had alluded, very good humouredly, to Westminster Hall; and certainly the members of his profession were occasionally bound to do many things contrary to their own wishes and desires; as in cases where the public were associated for a good and important purpose, and found themselves fettered by the laws made by our ancestors. But even in these cases there was a remedy, in the Houses of Lords and Commons, whereby such evils could be corrected; and by means of that remedy the Art-Union of London had been enabled to hold their present meeting, which they could not otherwise have done. Much had been said of the high prices realised for works of art after those who produced them were no more; but it was a source of satisfaction to the members of this society that their subscriptions were applied to the benefit of the artist and his family during his life; and it was further gratifying to find that, by the operations of the society, the taste of the public was improving yearly.

Mr. T. C. Harrison having seconded the resolution, it was carried, with applause.

Mr. Godwin expressed his obligations to the meeting for the way in which his name had been received. The only reward which Mr. Pocock and himself had ever aspired to for any time and exertions which they had given to the society, was the thanks of the members and the success of the society; and in both these points they had fortunately succeeded. It must be evident to every one that art stood now in a very different position to that which it occupied when the Art-Union was founded. It was scarcely possible now to enter into any society or to sit at any table without meeting intelligent persons loving art, and speaking of it. The Council well deserved the thanks of the members; not only were they very zealous, but he believed they were the only body who met weekly all the year round, in season and out of season, to carry on the business of the association. Neither did the Council confine their attention to matters of ordinary routine; for, in order that the society might be well represented in America, and to show to that country their desire for association and intercourse, the Council had forwarded a copy of the statue of the "Dancing Girl Reposing," to the Exhibition at New York; whilst to the Exhibition in Dublin, copies of the society's bronzes and statuettes were likewise sent. The Art-Union would be adequately represented also in the Crystal Palace now creating; and if that building should be carried out as the directors said it would be, he believed it would do more to spread a knowledge of art in England than any other undertaking that had been attempted. Without going to Khorsabad, the public would there see a restoration of its palaces; without braving the burning sands, they might study the sublime monuments of Egypt; they might examine a house in Pompeii, and the finest works of ancient art, without going to Greece or Italy; casts of all the finest mediæval works would be there collected; and he was perfectly satisfied that the effect upon society, and upon English art especially, would be very great. He would not then dwell upon that subject, as the meeting had other business to do. He would, however, take the opportunity of mentioning the name of the assistant secretary, Mr. T. S. Watson, who had discharged his duties this year, as he always did, with great zeal, perseverance, and ability; and in conclusion he would move as a resolution, "That the best thanks of the institution be presented to Mr. Charles Mathews, for the liberal manner in which he had granted the use of that theatre for the purposes of the meeting." The members had before heard him say how readily and kindly Mr. Mathews had always yielded to their request; and this had been the case on the present occasion. It was quite evident that his kindness was not "Used Up;" he did not say of the society, "There's nothing in it;" he thought there was a great deal in it, and at once gave his consent, and the members were therefore very much indebted to him.

Mr. Pocock seconded the motion. He had had many opportunities of observing the kindness of Mr. Mathews, and of everybody connected with the theatre. For the honour the meeting had done him in acknowledging his humble services, he begged to express his thanks and gratification.

The motion having been carried,

The Chairman withdrew.

Mr. Serjeant Thompson then took the chair, and the distribution of the prizes having been made, other votes of thanks were passed, and the meeting dispersed.

The following is the official

LIST OF PRIZEHOLDERS.

Entitled to a Work of Art of the Value of Two Hundred Pounds.

Lygon, Hon. F. Grosvenor-place.

Entitled each to a Work of Art of the Value of One Hundred and Fifty Pounds.

Haynes, B. Ewell.
Wilson, H. Bury St. Edmunds.

Entitled each to a Work of Art of the Value of One Hundred Pounds.

Allon, Rev. H. Canonbury
Long, C. Euston-square station
Richmond, W. A Kensington
Snee, Miss M. Islington
Yarrell, W. Ryder-street.

Entitled each to a Work of Art of the Value of Eighty Pounds.

Balch, W. Y. Boston, U.S.
Biddulph, W. Shadwell
Brandard, E. P. Islington
Edwards, G. C. Mincing-lane
Hardman, Miss A. Bolton
Harris, F. Abingdon
Maudsley, T. H. Lambeth
Moore, Dr. J. Van Diemen's Land
Norton, Jno. King-street, St. James's
Swindell, C. E. Stourbridge
Turner, G. jun. Torquay
Walker, G. Manchester.

Entitled each to a Work of Art of the Value of Sixty Pounds.

Barstow, C. H. Spofforth
Forrester, Mrs. Belfast
Harman, J. H. Philadelphia
Hardinge, S. T. Hobart Town
Hinks, C. Brompton
Hooper, —, Bideford
Knight, G. Scarbro'
Low, J. Norbreck
Ramsey, Rev. S. T. Newmarket
Shearman, R. H. Buffalo, N.Y.
Smirke, S. Berkeley-square
Thompson and Son, Dalkeith
Walker, T. Keppel-street
Woolcott, Mrs. Bedford-st.
Yates, J. A. Bryanstone-square.

Entitled each to a Work of Art of the Value of Fifty Pounds.

Arnold, G. Edenbridge
Carter, J. Bacup
Dalton, H. G. Demerara
Fell, W. A. Finsbury
Goodfellow, B. Manchester
Horsley, W. Alfreton
Hughes, —, Wordsley
Jarratt, W. Greenwich
Lindsley, J. C. Boston, U.S.
Logan, A. M. King William-street
West, C. H. Lahore
White, H. H. Lincoln's-inn.

Entitled each to a Work of Art of the Value of Forty Pounds.

Acworth, Mrs. Chelmsford
Allen, J. F. 60, Cornhill
Beale, H. R. Bedford-row
Beaver, W. Pentonville
Carr, J. Sheffield
Cowen, J. Woolwich
Dale, G. Chichester
Douglas, R. Dunfermline
Everett, Rev. T. Riddesden
Goddard, Geo. Kendal
Hartshorn, Mrs. Worcester
Hirst, W. Derby
Keir, T. Falkirk
Lee, H. C. Springfield
Lloyd, C. Coventry-street
Long, G. W. Kingsland
Mitchell, R. Liverpool
Money, D. J. East Indies
Morrell, Mrs. Woodham Mortimer
Parker, F. Liverpool
Peeling, J. Cambridge
Penny, E. Bradford
Rickards, S. Acton
Rogers, B. L. and W. Bank, Lothbury
Sherrard, T. Bloomsbury
Tucker, W. H. High Holborn
Windsor, Rev. F. B. Hobart Town
Wren
White, W. Cirencester.

Entitled each to a Work of Art of the Value of Twenty-five Pounds.

Alexander, A. Madras
Anderson, E. Lincoln's-Inn
Bear, J. P. Port Philip
Bispham, S. A. Philadelphia
Brown, Geo. Brompton-l.
Buckingham, S. Stanhope-lodge
Clarke, R. Ludlow
Colnaghi, D. Pall-Mall East
Cruttenden, W. C. Stockport
Cunliff, Rev. G. Wrexham
Draper, Justice, Toronto
Forbes, J. Paisley
Harvey, Mrs. Stafford
Hill, Mrs. M. Sussex-street
Lamb, Jas. Queen-st. City
Lancaster, Rev. T. B. Clifton
Lucas, Miss, Chester
Marsden, S. Cambridge
Morley, H. Birmingham
Pyke, J. W. Westbourne-grove
Reading, R. G. Warwick
Swanston, W. jun. Newcastle
Taylor, G. Commercial-road
Thornton, F. Museum-street
Tuke, —, Manchester
Wadmore, James, Upper Clapton
Walker, T. 31, Keppel-street
Westley, W. 24, Regent-st.

Entitled each to a Work of Art of the Value of Twenty Pounds.

Adams, Rev. G. Farndon
Ansty, Rev. A. Salisbury
Blacker, Rev. R. S. C. Pontefract
Boucneau, A. Warren-st.
Boulting, J. 16, Union-st.
Bowen, J. Shrewsbury
Bradshaw, J. Nottingham
Bright, E. Leamington
Brown, C. Lower Tooting
Cape, J. Grenada
Clark, W. jun. Southwark-bridge-road
Chamberlaine, C. Barnsley
Cole, R. Upper Norton-st.
Cumming, P. P. per Smith and Elder
Dunn, R. C. Port Philip
Dyke, D. S. Denmark-hill
Galsworthy, W. H. Portman-square
Hall, R. Cork
Hornbuy, T. Chelsea
Jones, R. Canterbury
Lawrence, H. Jamaica
Mahon, Rev. G. W. Woburn
Morse and Gridley, Springfield, U.S.
Obbard, J. Denmarkhill
Ogden, R. L. Manchester
Ousey, R. Ashton
Rhodes, G. Manchester
Takeley, J. Lambeth
Von Dadelszen, Mrs. Blackheath
Walker, Mrs. Chester.

Entitled each to a Work of Art of the Value of Fifteen Pounds.

Adams, H. Boston, Lincoln
Ash, G. Great Marlborough-street
Ball, Miss, Merthyr
Common, A. Darlington
Croll, A. A. Poplar
Danford, F. Wisbeach
Davies, E. S. Sligo
Fowles, R. Ginster Hall
Graham, W. Ecclefechan
Gaskoin, J. Clarges-street
Heyward, Dr. Boston, U.S.
Jopling, R. T. Brompton
Kennedy, S. H. New Orleans
Lewis, Mrs. Albany-street
Maynard, T. C. Durham
"Mexican," — Devon-house, Bristol
Muzio, J. Highbury
Price, W. Albion-grove
Rose, T. J. Warwick
Sentis, A. Glasgow.

Entitled each to a Work of Art of the Value of Ten Pounds.

Breach, R. Steyning
Birley, W. Preston
Crotty, Master, Carlow
Drinkald, J. J. Newmarket
Duggin, T. B. Berbice
Evans, Lieut. H. per W. Shacker
Flood, F. H. King-st. Soho
Freeman, F. T. Upper Berkeley-street
Gibson, W. R. Manchester
Gordon, Lieut. 9th Lancers
Groves, C. New Bond-street
Macleod, G. M. St. Lucia
McBean, A. Leghorn
Maudsley, H. Lambeth
Naish, J. F. Midhurst
Neald, A. C. R. Cheltenham
Pilkington, G. Haslingden
Philip, J. Cape Town
Richardson, Rev. H. Leek
Service, W. jun. Glasgow
Shadworth, W. Durham
Trotter, T. Lydney
Twiss, J. Northchurch
Watkins, J. Parliament-st.
Wilson, W. Blackfriars-road

Entitled each to a Group in Bronze, "Satan Dismayed."

Chapman, R. Sheffield
Glover, Mrs. Glasgow
Hughes, M. Maidstone
Joyce, J. Philadelphia
Wood, A. C. New Amsterdam.

Entitled each to a Bronze Statuette, "A Boy at a Stream."

Barlow, J. Manchester
Bishop, J. C. Sherborne
Bromehead, Rev. A. Chesterfield
Brown, Mrs. B. St. John's-wood
Coleridge, Rev. E. Eton
Cox, G. Stoke Newington
Gibbs, D. W. Grenada
Higginson, J. M. Mauritius
Ledsom, J. Birmingham
Richards, T. Boston, U.S.

Entitled each to a Tazza in Iron modelled from a Greek Design.

Brooks, A. Pall-mall
Burton, W. S. 39, Oxford st.
Cambridge, F. Downham
Cotton, C. Lynn
Cruttwell, Mrs. Bath
Daniel, E. J. Banbury
Dowling, S. Dublin
Drewett, W. Turnham-green-road
Drinkwater, B. B. Liverpool
Freeling, W. B. New Orleans
Hayward, N. G. Edmonton
Houlton, A. Bruton-street
Johnson, J. 36, Old Broad-street
Liveragee, H. Selby
Kimber, Miss, Great Tew
Madara, L. C. Philadelphia
Monsell, J. E. Cheltenham
Montgomery, Dr. Penzance
Morris, C. S. Ely
Morris, Rev. Dr. Ch. Ch. Coll. Oxford
Nutter, N. Wanstead
Peckover, A. Wisbeach
Poulter, R. Fakenham
Snow, Mrs. Kensington-crescent
Smith, A. Stroud
Stillwell, E. S. Barnsbury-park
Stopford, R. Cork
Sutherland, R. Birmingham
Wall, T. S. Edgware-road
Wesson, Jas. Bristol.

Entitled each to a Parian Statuette of "Solitude."

Aird, W. Grenada
Augarde, H. S. Copthall-ct.
Ashcroft, W. Liverpool
Bailey, W. Little Earl-street
Barnes, J. Old Brentford
Barrow, E. Ramsgate
Bennet, J. Cornhill
Bromley, Mrs. S. Bath
Bassh, E. Porto Cabello
Buswell, H. Lutterworth
Casley, J. Guildford-street
Carlisle, H. W. Brewer-st.
Chalk, T. Worcester
Colebrook, E. Calcutta
Coltard, E. Upper Thames-street
Dark, E. Leeds
Dixon, R. Lambeth
Donaldson, W. L. Southampton-street
Fairfoot, Miss, Doughty-st.
Fisher, J. Walworth-road
Fox, Miss D. Plymouth
Guerin, E. F. Guernsey
Harrison, M. Woolwich
Hartley, E. Chipping Norton
Heywood, F. D. Lower Thames-street
Hersey, B. Peckham
Heath, S. Dunchurch
Hodges, W. jun. Reading
Howton, Miss
Hunt, J. L. Martham
Jack, W. Airdrie
Jennings, F. W. Leek
Johnstone, Mrs. Edinburgh
Jones, R. Union-street
Kennedy, D. H. Aberdeen
Kent, G. Little Moorfields
Lilly, W. Droitwich
Mannering, G. Ramsgate
Neal, E. Jersey
Nicholson, James, Oxford-terrace
Pike, G. Alnwick
Roper, W. J. Hampstead
Rugg, R. Stepney
Stacey, Rev. T. Cardiff
Thompson, G. Oxford
Trimings, J. Oldbury
Walker, L. Stockport
Wardman, H. Leeds
Wasielo, R. M. Camden-town
Wood, S. Craig's-court.

Entitled each to a Porcelain Statuette, "The Dancing Girl reposing."

Ackerman, R. jun. Regent-street
Adams, S. Ware
Allaway, J. Ross
Allen, G. J. Dulwich
Balfour, J. Dunfermline
Bates, W. G. Hemming's-row
Bathurst, C. Rochester
Beasley, Mrs. Chapel Bampton
Beck, P. Shrewsbury
Blew, J. jun. Stourbridge
Brown, W. Paisley
Clark, J. Glasgow
Clayton, Mrs. Adlington
Dolman, R. Greenwich
Ellen, J. B. Devises
Fairlie, Mrs. Col. Kilnarnock
Findlay, W. L. New York
Forrest, Mrs. H. R. Manchester
Fuller, R. Chichester
Groom, T. Whitchurch
Gurney, J. Abingdon-street
Hardwick, E. Kidderminster
Harwood, W. Mitcham
Herring, W. jun. Chertsey
Howden, J. W. Coventry
Jaggars, H. Haverstock-hill
Lane, J. M. Lichfield
Le Couteur, Col. Jersey
Limby, H. Watling-street
Mackintosh, L. J. Kennington-road
Martin, Mrs. J. Berkeley-sq.
Martin, W. Manchester-sq.
Midgeley, W. Selby
Moore, W. Leatherhead
Munday, Mrs. Wolverhampton
Murray, Geo. Douglas
Pace, E. H. Pershore
Richards, S. Leeds
Roape, L. Great St. Helen's
Rowland, Geo. Richmond
Singleton, J. Howden
Skelton, R. Kendal
Society of Artists, Clipstone-street
Taylor, Gen. Bagshot
Tyler, W. W. Deptford
Veness, W. V. Holloway
Walter, Maj. Parliament-st.
Warren, G. H. Gloucester-st.
Washington, G. Boston
Willes, Mrs. Abchurch-villa

THE OLD SOCIETY OF PAINTERS IN WATER COLOURS.

NOTWITHSTANDING the absence of Cattermole and John Lewis, the present exhibition of the old Water Colour Society, consisting of 309 pictures, is equal in general merit to that of any previous year, and has been bought up with an avidity quite startling. It was as much as the keeper could do to run backwards and forwards and stick in the little blue tickets which tell would-be buyers that they are too late, and give such increased value to the picture in the eyes of the looker-on. The picture of the greatest pretensions, and we should not be far wrong if we said the greatest merit, is (77) by Mr. John Gilbert, "Richard II. resigns his Crown to Bolingbroke," when Shakspeare makes him say,—

"Give me that glass, and therein will I read."

It is an elaborate and thoughtful composition, rich in colour. Throwing our eyes back on the almost countless illustrations produced by Mr. Gilbert during the year, it is difficult to understand when he found time for so large a work as this. Mr. Copley Fielding is not so forcible as usual, but has, of course, many charming pictures. Mr. T. M. Richardson's landscapes stand amongst the first in importance: we may especially mention (111) "Glen Shee, from the Devil's Elbow," and (185) "The Deer Stalkers, Glen Nevis:" the figures are admirably put in. Bentley is very strong: see, for example (72), "Dunluce Castle, Ireland" (full of poetry), and (191) "Elizabeth Castle, Jersey." But he has a rival very close to him in one less known, S. P. Jackson, whose "Wreck on the Coast, near the Mumbles" (6), and "Aberystwith from the Sea" (145), are remarkably clever and pleasing drawings. Carl Haag has increased his reputation by (181) "Remains of the Temple of Jupiter Tonans," (270) "A Tyrolese Peasant Girl," and some others. John Callow on the water, and William Callow amongst old buildings, have some good specimens of their art. The "Outward Bound at Gravesend" (37), and "The Town and Castle of Hastings, from the Rocks" (120), both by the former, may be mentioned.

Mr. Brauwhite has a wonderful "Winter Morning" (198), wherein he shows that he can manage ice with water as well as oil. Mr. Jenkins has a pretty pair, "The English Side of the Channel" (214), and "The French Side" (223); nor should his "*Prenez Garde*" be overlooked. "The Interior of the Church at Trèves" (2), by J. Burgess, jun.; "Stokesay Castle" (7), D. Cox, jun.; "The Tomb of Edward the Black Prince, Canterbury Cathedral" (104), by W. C. Smith; "Mill at Morenish" (118), by George Fripp; Rivicre's "Bit of Blarney" (110), and "A Little Botheration" (121); and W. Goodall's "Half-way Home," are all noticeable.

Hunt, D. Cox, V. Bartholomew, and some others exhibit stereotypes of former triumphs.

THE NEW SOCIETY OF PAINTERS IN WATER COLOURS.

HERE, too, we have a very satisfactory collection, consisting of 365 pictures, or one for each day in the year. Mr. Haghe, Mr. Henry Warren, Mr. Edward Corbould, and Mr. Absolon, hold the chief places in it as figure painters: Mr. Davidson, Mr. Vacher, Mr. Bennett, Mr. McKewan, Mr. Cook, amongst the landscape painters.

Mr. Warren's large picture, "The Walk to Emmaus" (236) is a fine work, though the drapery is less satisfactory than the heads. There is much beauty in his smaller pictures, "Danger" (300), an Indian girl asleep in the neighbourhood of a serpent, and No. 68, "An Augsburg Peasant Girl." Mr. Haghe's "Happy Trio" is remarkable for force and colour. The blue of the man's dress scarcely harmonizes with the rest of the picture: the table-cover and curtains are rare pieces of manipulation. "The Magic Mirror" (279), by Edward Corbould, is a little too black, and the sofa of the female figure more real than spectral: it is nevertheless an excessively clever picture. (101) "The Decision by the Flower" is less admirable: the legs have scarcely the right relationship to the bodies. Mr. Absolon is superior to himself in the present collection. "The Nun" (219) is particularly good in colour. Mr. Bennett is more cold and gloomy than usual: (73) "Sherwood Forest" is a very pretty specimen of his skill. (113) "The Peat Moss," by Robert Carrick, is very truthful; and the same artist has a smaller drawing on the screen. (124) "The Fatal Statue," by W. H. Kearney, is a good subject; more praiseworthy in design than execution. (242) "Durham," by McKewan, is a charming picture. "The Singers," by E. H. Wehnert, makes us regret the absence of larger works by this artist. The water in (131), "Belgian Galliott running out of the Scheldt," by T. S. Robins, is admirable; and we must mention with approbation "La Toilette" (140), by Rochard; "Snowdon" (146), by T. Lindsay; "Summer," by Edmund Warren; "Pike of Stickele" (191), by Jas. Fahey; "The Loiterers" (264), by W. Lee; &c. Mr. Bouvier is not up to the mark of his companions.

LIVERPOOL ARCHITECTURAL SOCIETY.—At the last meeting of this society, the evening was wholly devoted to the discussion of a plan for the improvement of the town, previously brought forward.

ON THE CYCLOPEAN WALLS OF GREECE, AND THE ROCK-WALLS OF SCHLESWIG-HOLSTEIN.*

Since the commencement of the present century, both archæologists and architects have directed their attention to the considerable remains which exist, in places, of the old walls of Greek and Italian cities, and are sometimes called Cyclopean, sometimes Pelasgic, at others Hellenic, but are generally distinguished by the first-mentioned name. Petit Radel,† especially invited attention to the study of those massive constructions in Italy, which had been almost entirely neglected, although they had existed for centuries, and made them the subject of scientific research. Dodwell‡ and Gell§ joined him, having found the same construction in most of the cities of Greece, and the former published a collection of 131, and the latter of 47 specimens of such walls. More recently the Archæological Institute of Rome has, from time to time, farther advanced the knowledge of this kind of construction, remains of which are to be found, as has been observed, spread over the whole of Greece and a great portion of Italy. Its antiquity reaches to the earliest time of Grecian fabulous history. For the last two thousand years and upwards, however, it has not been employed either in the walls or the houses of cities nor in other buildings, and it is only owing to the extraordinary stability of their construction that such numerous remains exist, spite of the devastation of time and earthquakes, and the violence of man. And if in the present day the fortification-walls of Verona have been constructed in this style, we must regard it as the result of a renewed acquaintance with those ancient walls, which science has brought about.

While, however, this mode of construction was forgotten on the shores of the Mediterranean, a very similar one has been employed in Northern Germany and in our Duchies, although very imperfect and without that development of which the simplest art is capable. In fact, our rock-walls are so nearly allied to the Cyclopean walls, that their frequent use at the present time justifies a farther consideration of the subject.

Passing by learned researches as to whether the Cyclops actually erected the first walls of this kind, those still standing at Tiryns, for Prœtus, who lived five generations before Hercules, and those of Mycenæ for Perseus, we designate by the general name Cyclopean Wall, a wall constructed of stones not exactly unhewn or uncleft, but not dressed or made even, mostly polygonal and straight-sided, seldom right-angled, and placed, without mortar or other connecting material, in layers differing more or less from a true horizontal position.

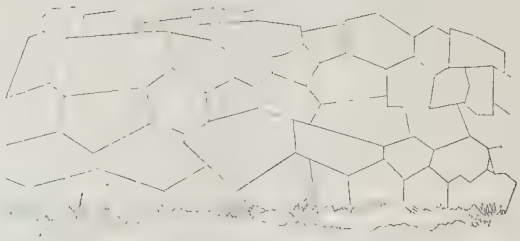
The magnitude of the blocks, their irregular form, the absence of a special binding material, the various exactness of the jointing, and the position of the stones in the construction of the whole wall, occasioned by their fitting into each other, constitute the actual peculiarity of this kind of building. These three divisions, however, the blocks, the joining, and bedding, stand in the most intimate relation to each other, and to the material itself. If there are quarries in the neighbourhood, which afford the material in layers; then, generally, the blocks will have a four-sided shape, with upper and under sides parallel, and the height of those taken from the same layer will be tolerably equal. With such blocks a wall will necessarily be built with beds nearly approaching to the horizontal line; as, for example, the piece of the substruction of the Via Appia. Similar walls are to be seen all over Greece, but the horizontal lines are mostly carried out with much less strictness.

Should, on the contrary, the nearest material consist of irregular blocks, without a determined side line, then the natural endeavour to form as accurate a connection as may be, and a solid wall with the least trouble and at the least expense, gives rise, in a way, to the contrary extreme—the greatest irregularity of the layers, and the greatest deviation from the horizontal disposition; and in this instance, that which is most to the purpose appears also most pleasing. As in blocks with two parallel sides and equal height, the greatest possible horizontality, equality of size and shape, and symmetry of the vertical joints over the middle of the horizontal line, constitute the greatest beauty, and every deviation from the horizontal or perpendicular line hurts the eye; so the beauty of a polygonal wall consists in the greatest possible interruption of the horizontal beds, and in avoiding all continuity and parallel direction of the lines. The more that joint strikes on angle, and angle on joint, the more beautiful is the wall. Examples of the kind are the piece of work from Mycenæ, from Bovianum, and from the Via Appia, between Terracina and Fondi. It would seem that so *very irregular* a piece of construction must be very easily destructible, and yet all these walls are from 2,000 to 3,000 years old, some perhaps much older. At first sight we might suppose that taking away only one stone would occasion the downfall of a great portion of the wall, but the contrary is the case. For the most part, not only single stones, but often a number of adjacent ones, could be taken out of the wall without the superjacent ones moving from their place. For notwithstanding its great irregularity, there is a tendency in this construction to the formation of an arch arising from the many-sidedness and consequent wedge shape of the stones, which the skill of the builder, no doubt, assisted. In the wall of Mycenæ or Bovianum, for instance, there is scarcely one stone which is supported only by its immediate underlayer; almost every one is at the same time part of an arch, or even of several. In the example from Bovianum the foundation-stone could be moved without danger of disturbing the stones resting or abutting on it. Even single stones with *parallel* vertical sides are held by the pressing weight of the adjoining stones, as stone lies on stone without any connecting material likely itself to become loose, and the unevennesses on the sides take hold of each other. For, the want of mortar, instead of making the connection weaker, strengthens it by allowing the numerous indents in the straight or rough sides to come in immediate contact.

For the rest, the value of the wall does not consist in the circumstance that single stones can be omitted, but that every stone fulfils its part in the construction in more ways than one, so that the services of a stone wanting are always made good by the others. Indeed, there can be no such thing as actually taking a stone out, since each in some degree lies under the pressure of the whole wall. A stone in a finished polygonal wall could only be got out by destruction. Where such is not to be feared, it is not necessary that each arch should reach to the ground or be continued in every point by means of only one stone. It is not less firm, if its basis is set on two or three stones acting in connection, provided these have again an equally firm bed.

The objection may perhaps be made, that this kind of construction is attended with great loss of time and expense; that in the construction with horizontal beds the mason can dress each stone to a general measure, so that it can fit every part of the work, while every stone in a polygonal wall must be exactly prepared for the place intended; and that, though there may be less dressing, yet the continually repeated fitting of the large blocks requires too much time, and too many hands to warrant us in giving the architects of antiquity credit for employing a construction at once appropriate and economical. Certainly, were the method of proceeding such as is here described, much of the advantage of this kind of construction would be lost. But the mode of proceeding was quite different. After a number of foundation-stones had been laid in their places, as, for instance, in the wall of Mycenæ, the workmen pressed a plate of lead into the upper uneven vacuity, formed by two or three stones, to take the exact shape to be given to the under half of the stone intended for insertion in this place. The plate of lead served as a model and measure for the stone to be hewn, and rendered the tedious fitting of it altogether unnecessary. For each place the particular stone was selected whose natural shape answered best. The upper half of the stone was hewn as its shape suggested, and as could be done with the least

CYCLOPEAN WALLS.



FROM THE CASTLE OF AGAMEMNON, MYCENÆ.



FROM BOVIANUM.

* An address to the eleventh meeting of German proprietors of lands and forests. Translated from the German of Dr. P. W. Forchhammer.

† Paris. 1841.

‡ London. 1834.

§ Munich and Stuttgard. 1831.

labour. The same proceeding took place with the next stone, the same plate of lead being employed to ascertain the shape to be given to it, and so on till the work had reached its intended height and length.

The plate of lead was called the *Lesbian* Canon*, to distinguish it from the regular measure, according to which each stone of squared stone-work was worked in perfectly similar size and shape. The distinction between the two measures is clearly defined by Aristotle, the Lesbian Canon changing according to the material, but the regular canon requiring the material to change and conform to it.

At the ends of the walls, at the gates, and at every angle, the polygonal construction was naturally changed into a horizontal one, otherwise the angles would not have solidity, nor the polygonal stones of the wall a firm abutment.

For the same reason care was taken to lay a number of stones with horizontal upper and under surfaces, upon one another, at intervals, in the wall. These formed a kind of pier, which gave a stay to the polygonal blocks on both sides. Thus in the wall of Fondi.† The Cyclopean walls of Greece and Italy often coincide with our so-called stone *revêtements*, by leaning internally on the hill which is to be fortified externally by a wall. They are, however, often quite isolated. The inner filling of the walls consists of stones, generally the smaller pieces knocked off in hewing the larger blocks. In isolated walls, the outer and inner faces are tied together by long stones, acting as clamps. This is the case in the very remarkable wall of Midea, situated one quarter of an hour from the village Merbeka, in Argolis.

After this brief description of the Cyclopean walls of Greece and Italy, it might appear hazardous, notwithstanding their long duration, to express the opinion that much can be borrowed from them for the improvement and beautifying of our rock walls.‡

SANITARY STATE OF PLYMOUTH, &c.

ONE of those elaborate reports which are every now and then issued by the General Board of Health has just been published on the sanitary state of Plymouth, Stonehouse, and Devonport.

The reporter, Mr. R. Rawlinson, superintending inspector to the Board, appears to have been led, by a vast mass of miscellaneous evidence, to the conclusion that, in this case, as in too many others, though Nature has done much for the borough of Plymouth to render it healthful, man has done an immense deal more to counteract and destroy Nature's beneficent purposes, so that "it actually is one of the most unhealthy towns in the kingdom." Want of proper sewerage and drainage, those festering and horrible sores of our towns the graveyards and cesspools, impure and otherwise defective water supply, overcrowding and want of ventilation in dwellings, and want of cleanliness outside and in—in street and low lodging-house,—these are the main causes of great evil, much misery, and many preventible deaths, in Plymouth as elsewhere. "The number of '*preventible* deaths' which annually take place in Plymouth," says the reporter, "and the consequent money loss to the community, is very great. The term '*preventible*' is not understood or acknowledged as applied to health or sickness, life or death; and any money estimate of such is ridiculed; the term is, nevertheless, properly applied. Man cannot control the elements, but he can modify their effect; he cannot entirely remove disease and prevent ultimate death, but some of the natural causes he can modify; and most of the artificial causes leading to the excess of disease may be removed; and the sum of human life may be extended to such period as the Creator has allotted for man's existence. The history of epidemic pestilences is almost exclusively a history of misery and premature death; much of which, by proper attention and due care, might have been prevented. Men have erected their dwelling-places amidst undrained swamps; they have crowded habitations within lines, embankments, and walls of fortifications; they have surrounded themselves with their refuse; and they have, in their damp and overcrowded rooms, breathed and re-breathed a lung-tainted atmosphere. That which many of the inferior animals instinctively recoil from, man has endured, until his senses have been blunted and his reason become a snare. How otherwise is the existing apathy to health or disease, life or death, of thousands and tens of thousands in this country, to be accounted for?"

The money loss, as estimated in the report, is rather a curious item, and ought to be taken into serious consideration in more towns than Plymouth. It is set down thus:—

494 fatal cases, at 5*l.* each	£2,470	0	0
14,820 cases of preventible sickness, at 1*l.* each.....	14,820	0	0
Total loss by preventible sickness	£17,290	0	0

It is also calculated that each fatal case of sickness is attended with a loss of five years upon each adult life, and the value of each is estimated at 10*l.* per annum. The total loss will therefore stand thus:—

Loss by preventible sickness ...	£17,290	0	0
,, of five years upon each adult life (one-fourth, 123½), at 10*l.* per annum each ...	6,175	0	0
Total loss in one year...	£23,465	0	0

With reference to this report, by the way, and to the Board of Health generally, we may here remark, that a feeling against the introduction of the Health Act having manifested itself at Plymouth, the ratepayers appointed a committee, who made inquiries in various towns where the Act has been in operation as to its working; and the replies given have been printed in a report of the rate-paying committee now before us. This the committee state that they do for the purpose of "exposing the absurd and wicked attempt to mislead the public by fraudulent representations," and they conclude by saying that "it would have been more consistent with the duties of the council, if, instead of endeavouring to bring discredit on the administration of the public health by unfounded statements as to its operation, they had made themselves acquainted with its actual working by seeking for such information as your committee have obtained." The evidence adduced, and which is entirely and strongly in favour of the local working of the Act, and the pecuniary and other advantages arising from the information and advice given in any strait on application to the Central Board, comprises communications from the local boards at Exeter, Rugby, Barnard Castle, Tottenham, Launceston, Dover, Leamington, Wolverhampton, Derby, Southampton, Wigan, Gateshead, York, Woolwich, Salisbury, and Penrith.

From some details in the *Berwick Warder*, we may add, it appears that endeavours were there also made to prejudice the community against the Health Act, by the publication of statements in respect to its working at Barnard Castle. Inquiries were therefore, in this case also, made at Barnard Castle, and it was found that the statements in question were a mere tissue of falsehoods.

THE SOCIETY OF ANTIQUARIES.—The annual dinner on the 23rd, after the election, was a small one, but passed pleasantly. Lord Mahon made an interesting address.

BIRMINGHAM ARCHITECTURAL SOCIETY.—A meeting of the members of the Birmingham Architectural Society was held last week, Mr. D. R. Hill, president, in the chair, when Mr. Allen E. Everitt, of New-street, read a paper on "Old Houses in the neighbourhood of Birmingham," which was illustrated by a series of drawings of the edifices referred to.

PROVINCIAL NEWS.

Oxford.—The new baths from the re-opening on the 15th ult. were used by 809 persons in the first twenty-three days. In the wash-house department there were 102 washers, occupying 192 hours and a half.

Banbury.—The public and private wells near the Gas Company's works, according to the local *Guardian*, are impregnated with gas, as to be totally unfit for human use. The question of the local Board of Health has been engaged in the matter.

Plymouth.—The Millbay Great Western dock contractors, Messrs. Hutchinson and Ritson, have of late, according to the *Western Times*, made considerable progress with this undertaking. The rock from the Battery-hill is being blasted for building of the pier and quays. In connection with the Graving dock on the western side of the bay, great progress has been made. The iron pontoon or floating-pier, 40 feet wide and 300 feet long—with a bridge, connecting it with the pier, 120 feet long—has been placed in its final position, opposite the Customs' baggage warehouse. It is furnished with separate compartments for goods by the Irish steamers, besides room for upwards of 2,000 tons of coal. It is intended to place upon the pontoon a shed 70 feet long by 35 feet wide, for the protection of merchandise in wet weather.

Knighton.—The first stone of a building of some importance to this place, namely, a flannel and clothing manufactory, was laid on Saturday week, "jointly by Mrs. W. Banks and the Misses Archibald." This seems to be one of the first fruits of railway communication, though, according to our authority, the *Hereford Times*, it has not yet quite reached the town.

Liverpool.—The report on proposed improvements of the town, which was presented by a committee at the meeting of the Architectural Society on Wednesday week, suggests the following improvements:—Better communications between the Town-hall and St. George's-hall; a route for the relief of Oldhall-street and North and South John-streets; an improved line of streets from the Landing-stage to the Lime-street Railway-station, and from that station to the north end of the town; the improvement of Marybone, and the continuation of Scotland-road and Vauxhall-road; the provision of better approaches to the town from Bootle, Walton, West Derby, Wavertree, Aigburth, and Everton.——There seems to be no little grumbling as to defects in the arrangements at the new courts opened in St. George's-hall. The ventilation, it is said, "is not to be cavilled at," notwithstanding much that has been said against Dr. Reid's system: but neither judge, jury, nor counsel can hear what witnesses say while placed in the witness-box, and hence in the mean time the witnesses are mounted on a stool in a more convenient position. As for the reporters, they do not seem to be able to hear either judge, counsel, or witness, unless they intrude on the accommodation of the counsel, and it is even alleged that no special places were reserved for them at all. Permission to convert some ante-room into a refreshment-room is considered desirable.

Manchester.—The proposed new building for the Mechanics' Institution is said to be virtually determined on. A sum of 4,700*l.* has been subscribed since 21st February last to the building fund, and comprises sums ranging from less than 1s. up to 100*l.*——A design for the new Free Trade Hall, by Mr. Saloman, architect, has also been approved, we understand.

Oldham.—A site suitable for a new building for the lyceum here has been found contiguous to the new baths in Clegg-street, fronting Union-street.

Bradford.—The Treasury have promised that on receiving a certificate that the inhabitants have subscribed their fair proportion towards the required outlay for a public park, their lordships are prepared to give 1,500*l.* from the Parliamentary Grant, on the understanding that the land purchased shall be permanently secured to the inhabitants as a place of recreation for ever.

Glasgow.—The proposed public park at Kelvin-grove is declared by the *Glasgow Re-*

* The island of Lesbos was once inhabited by Pelasgi, and was called Pelasgia. Hence, it is plain why the art of constructing Pelasgic walls was called Lesbian.

† To determine different epochs in the construction from such a variety in the wall would be as erroneous as to place the square stone construction next the gate of Mycenæ, and the establishment of the so-called Treasuries there, that is to say, the conduits, without which, the city could not by any means exist, in a different age from the ring-wall; and to assume different epochs in this ring-wall itself. The proofs that the rectangular cutting of stone was known and practised in proper places in the oldest of these constructions, are so plain, that a conclusion as to a later origin, drawn from single blocks of a square-stone construction, and from a more careful jointing of the polygons, is quite futile. In our opinion, supported by that of other writers, the so-called Treasuries were *conduit buildings*. Unfortunately those of Atrides and Minyas are choked up with rubbish. A thorough clearing out would set all doubts on the matter at rest.

‡ To be continued.

formers' Gazette to have turned out, in consequence of a vote of the council, to be a mere building speculation, by which private individuals may immensely benefit, but at the expense of the public convenience.

Fortrose.—At a meeting of heritors and others connected with the Black Isle, it has been resolved that a union poor-house should forthwith be erected near Fortrose, capable of containing about 200 paupers. The meeting also resolved to erect, in connection with the workhouse, a lunatic asylum, capable of accommodating from twenty-five to thirty inmates. The plans submitted by Messrs. Mackenzie and Matthews, architects, Elgin, were those adopted. It is expected that the erection of the buildings will cost between 3,000*l.* and 4,000*l.*

THE PARK FOR FINSBURY.

Is Finsbury really to have a park? For eight or nine years the projector, Mr. J. Lloyd, has agitated the subject, and one government after an other has expressed itself favourable to the project, but still nothing has been done. On Saturday, a deputation, comprising Lord Robert Grosvenor, Sir James Duke, Mr. T. Duncombe, Mr. Hume, Mr. C. Pearson, Mr. Lloyd, and several other gentlemen, had an interview with the Earl of Aberdeen and the Chancellor of the Exchequer on the subject. Lord Robert Grosvenor properly impressed upon the noble earl the necessity of at once giving their consent, inasmuch as delay not only tended to enhance the price of the ground selected for the park, but caused a strong feeling of dissatisfaction among the inhabitants of the northern parts of the metropolis, the only district not yet provided with a park.

Mr. T. Duncombe expressed his firm belief that if a sufficient space were granted for a park the Government would eventually scarcely be the losers, as the external portion of the park would let at enormous ground-rents.

Mr. Hume said he had much pleasure in attending this deputation, as he had supported parks for the people in 1832, and had never ceased to do so since. It was useless to think of having a small park at so great a distance as the proposed site, and in a locality which embraces all the north of London. It must be of ample size

Both statesmen immediately conceded the necessity of a park in the locality pointed out, and it was made apparent to the Chancellor of the Exchequer that the formation of a *small* park would eventually be more expensive than a large one, as contemplated by Lord Seymour. He promised forthwith to go through the estimates with Sir William Molesworth and Mr Peacocke, and to inform Lord Robert Grosvenor of the result. It must be apparent to the Government that a *small park* for the City and the inhabitants occupying the whole quadrant to the north of London, would be neglected, and the town could only now can one of sufficient size be obtained at a reasonable cost. The value of land would of course be immensely increased by the creation of the park, probably as much now by the mere discussion of the subject, and all hope of reserving a large open space for exercise would be lost. It is much to be hoped that the inhabitants of Finsbury and the City who are interested in this question: it concerns every dweller in the metropolis that open spaces, where an oxygen manufactory in the shape of grass and green trees may be established, should be preserved.

THE BRIDGES OF LONDON.

Mr. Bennoch has brought together, in the shape of a pamphlet,* various discussions, reports, and remarks which bear upon his project for a new bridge across the Thames from the east end of St. Paul's-churchyard to Mason's-stairs, with a direct road to the Elephant and Castle.

To show the necessity for additional means of communication between the two sides of the river, Mr. Bennoch gives the following table,—

Pedestrian traffic from ten till six:—London-bridge, 63,000; Southwark-bridge, 1,357; Blackfriars-bridge, 30,089; Waterloo-bridge, 6,234; Westminster-bridge, 26,170.

Equestrian traffic:—London-bridge, 114; Southwark-bridge, 93; Blackfriars-bridge, 91; Waterloo-bridge, 35; Westminster-bridge, 297.

Vehicular traffic:—London-bridge, 11,498; Southwark-bridge, 307; Blackfriars-bridge, 4,359; Waterloo-bridge, 1,709; Westminster-bridge, 5,840.

"The most startling fact shown by this interesting table is, that within a fraction, London-bridge has as much traffic as all the rest put together, the proportions being—

London equal to all.
Westminster half of London.
Blackfriars half of Westminster.
Waterloo one-third of Blackfriars.
And Southwark one-fourth of Waterloo."

We must also quote the following:—

TABLE SHOWING THE PROPORTIONS, COST, AND OTHER PARTICULARS RELATING TO THE SEVERAL BRIDGES.

NAME.	Length.	Width.	Height above High Water.	Arches.	Span of Centre.	Begun.	Finished.	Waterway.	Material.	Architect.	Cost of Bridge.	Cost of Approaches	Total.	Gradients, Surrey Side.
	ft.	ft.	ft.		ft.			ft.			£	£	£	In 100 ft.
London	920	54	29½	5	150	1824	1831	600	Granite.	J. Rennie.	Removing Old Bridge, 35,600	1,840,436	2,566,268	4
											680,232			3·3
Southwark ...	700	42	29½	3	240	1814	1819	660	Iron.	J. Rennie.	...	...	800,000	City Side. 4·6
Blackfriars ...	995	42	27½	9	100	1710	1769	793	Portland Stone.	R. Mylne.	...	...	210,000	3·10
Waterloo	1326	43	27½	9	120	1811	1817	1080	Cornish Granite.	J. Rennie.	...	...	1,006,000	3·9
Westminster	1220	40	25	15	76	1739	1750	820	Portland Stone.	Labelye.	...	...	388,700	3·9
St. Paul's	...	60	27½	5	240	...	...	960	Iron.	...	*120,000	24,000	...	2·6

All who have experience of the city traffic must feel satisfied that another bridge is needed, and that the site selected by Mr. Bennoch is a good one. Blackfriars-bridge must be rebuilt; and what the projector of the new bridge urges is, that if the latter be erected first it would save the cost of erecting a temporary bridge during the rebuilding of Blackfriars.

As bearing on the subject, we may mention that on Tuesday night Mr. Oliveira gave notice in the House of Commons, that he would move for a committee to inquire into the state and condition of the bridges over the Thames in the metropolis; to report whether they are adequate to the present and vastly-increasing traffic; whether it be desirable to construct one or more new bridges over the river; if so, at what point or points; whether it would be desirable to throw open to the public the present toll-paying bridges; if so, upon what terms such bridges could be thrown open; and generally to report upon any measures for improving the intercourse of the metropolis between the two sides of the river Thames.

CHURCH BUILDING NEWS.

Sleaford.—Carpenters and masons are actively employed in completing extensive works under the direction of Messrs. Kirk and Parry. The church will be re-opened for divine service on 24th May.

Willingale Doe.—This church was re-opened for divine worship on 14th inst. The tower, the old one having fallen into almost a dangerous condition, has been wholly rebuilt, and a north aisle added, the first stone of these works having been laid in August last, and since then they have proceeded under Mr. Clark, the diocesan architect, the builders being Messrs. White and Ringham. The cost has been nearly 1,400*l.* of which about 1,200*l.* has already been collected, leaving between 100*l.* and 200*l.* still to be raised. In the same churchyard, and without division, stands Willingale Spain Church. It is a rare instance of two churches existing in the same churchyard.

Dorchester.—The Abbey Church restoration is progressing, and the church will be opened for divine worship about the middle of next month.

Wells.—The Dean of Wells, Dr. Jenkyns, has just issued a circular containing a statement showing the manner in which the contributions to the cathedral restorations have been applied. It appears that the subscriptions from 1842 to the present time have amounted to 8,155*l.* 8s. and that the payments towards the restoration, for the temporary fittings in the nave, and the incidental expenses, have exceeded that sum by 860*l.* 17s. 7d. The Dean adds that the sum of 1,500*l.* is required to meet that deficiency and to finish the work, which must be suspended unless further assistance be given. The Dean and Chapter therefore appeal to the public.——A new memorial window, of stained glass, has been placed in the south side of the chancel of St. Cuthbert's Church, in this city. It was designed by some ladies of Mr. Tudway's family, and executed by Mr. Bell, of Bristol. It represents some events in our Saviour's life, and is placed opposite another window presented some time since.

Hereford.—There has been considerable discussion at the meetings of the city commissioners as to the question of taking down or restoring All Saints' Church, which is at present under repair. The Archdeacon of Hereford is anxious that some well-known and experienced ecclesiastical architect should be called upon to examine the structure, and report as to its safety, a very general opinion prevailing that it is in a dangerous state. Certain of the city commissioners, in order to obviate this course, which they seem to be assured would lead to the razing of the building even though not dangerous, since it is regarded as an eyesore as well as an obstruction in the streets of the city, got some of the city builders, as the Archdeacon calls them, or architects, as some of the commissioners state, to examine the edifice, and they reported its complete safety. Objection was made by the mayor, however, to the exclusion of a professional man who was convinced of its dangerous condition throughout. It was impossible, he said, that the church could remain in its present hideous, not to say disgraceful, state. The churchwardens were bound to have some such examination of the structure, as had been wisely suggested by the Venerable Archdeacon. If they attempted to take down the south part of the building they would endanger the whole: it must be taken down altogether; for, in fact, repair seemed to be out of the question, and it was much to be regretted that so much money had been expended in patching up the interior. At first sight the project seemed impracticable, but he had no doubt if the greater portion of the money were raised, the parish, in order to carry out so great a parochial as well as city improvement, would consent to borrow a sum of money and spread the payment over a period of thirty years, for which an annual rate of about 3d. in the pound would be sufficient. Their ancestors had performed duties for them, and he thought it was cowardice, if not dishonesty, to refuse to perform similar duties towards their posterity. No definite decision has as yet been come to on the question, which, after a long discussion at a late meeting reported in the local *Times*, was postponed till next meeting.

Cardiff.—The chief stone of a new Wesleyan chapel was laid on Tuesday in last week, at the bottom of Bellevue-street. The chapel will be built by Mr. Clement, of the Mumbles, and will accommodate about 500 persons, with a school-room, &c. in the rear.

Birmingham.—The new chapel for Wesleyan seceders in Branston-street, was opened on

* "The Bridges of London. Are more Bridges needed? Answered affirmatively." By Francis Pennoyer Wilson, Royal Exchange. 1853.

* Since this amount was named, engineers of high respectability, and power to complete whatever they undertake, have submitted plans and estimates by which a substantial bridge, of the dimensions given, may be constructed for less than 100,000*l.* and this amount includes the approaches.

Monday in last week. It has cost 400*l.* besides 60*l.* for school-rooms attached. The money was borrowed on mortgage of the building itself.—— Enamelled tablets for St. Paul's Church, Balsall-heath, have been made by Mr. Ingram, of Islington.

Leicester.—The chief stone of a new church to be dedicated to St. John was to be laid on 22nd inst. in the south-western portion of the district of St. George. The funds for the main fabric and its fittings have been produced, but those for the tower and spire are not yet forthcoming.

Holcombe.—On Friday week, the church which has recently been built at Holcombe was consecrated by the Bishop of Manchester.

Doncaster.—The subscriptions for the restoration of Doncaster Church now amount to upwards of 25,000*l.*

Wirksworth.—The interior of the old parish church has, it is said, been considerably improved by the removal of the organ from the centre of the edifice, enclosed by the great pillars of the tower, and where it excluded the light and was imperfectly heard, to the nave, where the sound is said to be greatly improved, while the main features of the architecture of the centre of the church are much better seen than before.

SOUTH LOWESTOFT CHURCH COMPETITION.

As one of the competitors, may I ask what has been done by the committee since the adopted design was thrown out, in consequence of the tenders exceeding the stipulated sum?

It is rumoured that one who did not even compete at all is to be appointed, but can this really be the fact? If so, surely it is not justice to those who did, in making their designs, have regard to the contemplated outlay.

W. S.

*** We have received seven or eight letters on this subject since the selection of the design, complaining of the excess in the tenders over the architect's estimate; but the architect having informed us "officially" that "only two tenders upon the contract drawings were received, and that the lowest furnished by local parties of known respectability was of such an amount as to justify the sub-committee in recommending its adoption, the recent rise of labour and materials since my estimate was made and sent in being considered a satisfactory reason for the amount of tender exceeding the original calculation,"—we refrained from inserting them.

EAST MOULSEY CHURCH COMPETITION.

A CORRESPONDENT informs us that about thirty designs were submitted to the committee, from which six were selected in the first place. After much discussion the design by Messrs. Salter and Laforest was selected. The following premiums were given as a mark of approbation to the authors of the designs next in order, although the committee were not pledged to do so:—Ten guineas to Messrs. C. A. Scott and C. Laws; seven guineas to Mr. A. Billing; and five guineas to Messrs. Whenert and Ashdown.

BRIGHTON.

A GREAT deal of activity prevails in the building operations of this town, keeping pace with its rapidly increasing population.

At the eastern end of the town the "Brighton College" is assuming a more complete shape by the erection of the east wing, now in progress from the designs of Mr. Scott. A little further on some large additions to the "Sussex County Hospital" are drawing near to completion under the superintendence of Mr. Herbert Williams (it is also intended to build a chapel for this institution as soon as the funds will allow). The latter gentleman is just now commencing a "Female Orphan Training School" on a site east of the hospital, nearer Kemp Town, the contract for which has been entered into.

At the western extremity of the town, amid a host of new houses (near Cliftonville), a new church in the parish of Hove is in progress from the designs of Messrs. Habershon. We also understand it is intended to erect new schools at the north part of the town, not far from St. Peter's Church. Great improvements have lately taken place in almost every part of the town, and the long delayed widening of the King's-road is at last progressing by the building of a wall (similar to that on the Marine Parade) extending from West-street to Ship-street.

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IRISH BUILDING MEMORANDA.

IT is in contemplation to erect a church at Rathgar, county Dublin. It has been a matter of surprise to the inhabitants of this populous locality, that the Ecclesiastical Commissioners should have so long delayed suiting their requirements in this particular.

The building of flax-mills throughout the country is daily gaining ground, especially in the north. We are told, also, that capitalists have been selecting sites for this purpose in the neighbourhood of Galway.

A new church is in course of completion at Ashleigh, in Ulster, and is placed in a very conspicuous situation.

A linen factory, to contain fifty looms, is in progress of erection at Oughterard.

A church is about to be erected at Roses Point by Mr. Cooper, of Markree, Sligo, capable of accommodating about 200 persons. A glebe-house is to be built in connection therewith.

A new temperance-hall is in course of erection at Kingstown, county Dublin.

The interior of the cathedral at Limerick (founded and endowed by Donald, King of Limerick, in the twelfth century), has undergone a series of repairs and improvements. This edifice may be classed among the venerable relics of Ireland. The building trade in the "City of the Treaty," promises to be brisk. A new mechanics' institute and athenæum are in contemplation. The tenders for building the markets have been received. Other works are in prospect.

We are informed that further extensive additions are about to be made to the church at Harold's Cross, county Dublin, and that plans have been furnished for same by Messrs. Louch and Son, architects. The intended additions will provide accommodation for between 400 and 500 persons. Tenders have been received. The lowest 2,000*l.*

A new woollen factory is to be established at Carrick-on-Suir, and an outlay of 5,000*l.* is proposed to adapt existing buildings for that purpose.

A new spire, with a peal of bells, is being added to the Roman Catholic Church of St. Vincent, Galway.

We have little more to add respecting the "*Great Industrial Building*" at Dublin, save that a large portion of the building is glazed and finished, other parts nearly so, and no section of the works is so far behind hand as to leave the shadow of a doubt that the building will be finished at the stipulated time. The workmen are in myriads on the incomplete portions. Contributions are daily pouring in, and the arrangements are so admirable, that there is no confusion, everything goes like clock-work. Preparations for a grand opening have been made.

A new church is to be built at Brookborough, by Sir Arthur Brooke. We are informed that the site has not been decided upon.

The Corporation of Dublin intend constructing a new graving dock at the Northwall-basin. Proposals have been received.

A pier is to be built at Crosshaven, Cork Harbour.

The church of Ballingarry, county Tipperary, is to be rebuilt, and proposals have been received, according to plans, by the Ecclesiastical Commissioners' architect.

The Commissioners of the National Education purpose erecting model farm-buildings at Ballymoney, county Antrim.

A new school-house is to be built at Oulart. A free site has been given by Mr. Grogan Morgan.

The new lunatic asylum at Omagh has been opened. It is one of those recently authorised to be built by the Commissioners of Public Works, and contains the ordinary masters' and matrons' apartments, day and reception-rooms, cells, dormitories, nurses' and padded rooms, chapel, &c. on the principal and upper stories, with all requisite culinary accommodation, &c. The style is Tudor Gothic. A centre building, with pointed gables and corresponding wings, forms the principal feature; wall of rubble, with cut stone dressings. The late Mr. Wm. Farrell, was the architect.

The R. C. Archbishop of Tuam has purchased the abbey of Ross, with a view of reconstructing it, for the requirements of a religious fraternity.

GRITTLETON HOUSE, NEAR CHIPPENHAM.

THE mansion of which a view is given is one now in course of erection from the designs of Mr. James Thomson, architect, in the county of Wilts, and is likely another day to possess interest, not only as the residence of a gentleman of very extensive estates in the neighbourhood of Chippenham—Joseph Neeld, esq. M.P.—but also as it will form the central feature of many improvements he has effected in that vicinity.

The present erection is designed to provide accommodation for a large establishment, and to combine the comforts and conveniences of a good family mansion with the opportunity of exhibiting a valuable collection of paintings and sculpture, books and minerals, in his possession.

The body of the house is an irregular parallelogram, extending 160 feet from north to south, and 120 feet from east to west, exclusive of a conservatory at one end, and the domestic offices at the other.

The principal floor comprises, on the east side, a morning-room, 33 feet by 24 feet; study, 27 feet by 18 feet; staircase, 26 feet by 23 feet; and library, 33 feet square. On the west side, a family dining-room, 33 feet by 24 feet; gentleman's room, 27 feet by 18 feet; ante-room, 18 feet square; entrance-hall, 26 feet by 22 feet; and billiard-room, 33 feet by 26 feet.

These are approached by a range of vestibules extending the whole length of the building, and terminated by a saloon 25 feet by 18 feet, opening right and left into the principal dining-room and drawing-room, each 40 feet by 25 feet, and 22 feet high.

The halls and vestibules reach the whole height of the building, and are designed to contain many treasures of English art, both in painting and sculpture, of which latter not a few are from the chisel of our great master of feminine grace, E. H. Bailey, R.A.; and the former include the names of Gainsborough, Reynolds, Wilson, Etty, West, and Ward.

The dining and drawing rooms will be filled by a choice selection from the Italian, Venetian, Spanish, and Flemish schools, embracing the names of Raffaelle, Correggio, Guido, Titian, Carracci, Velasquez, Murillo, Rembrandt, Rubens, Vandyke, Teniers, Cuyp, Metzu, Van Goyen, and many others. The style adopted is Romanesque,—the architect, considering it most available to effect the object aimed at, viz. to give variety of form and boldness of outline by the arrangement of its component parts, without involving the exuberance of ornament which attaches to the Elizabethan period, or the mixture of Italian and mediæval art which belongs to the style of James I.

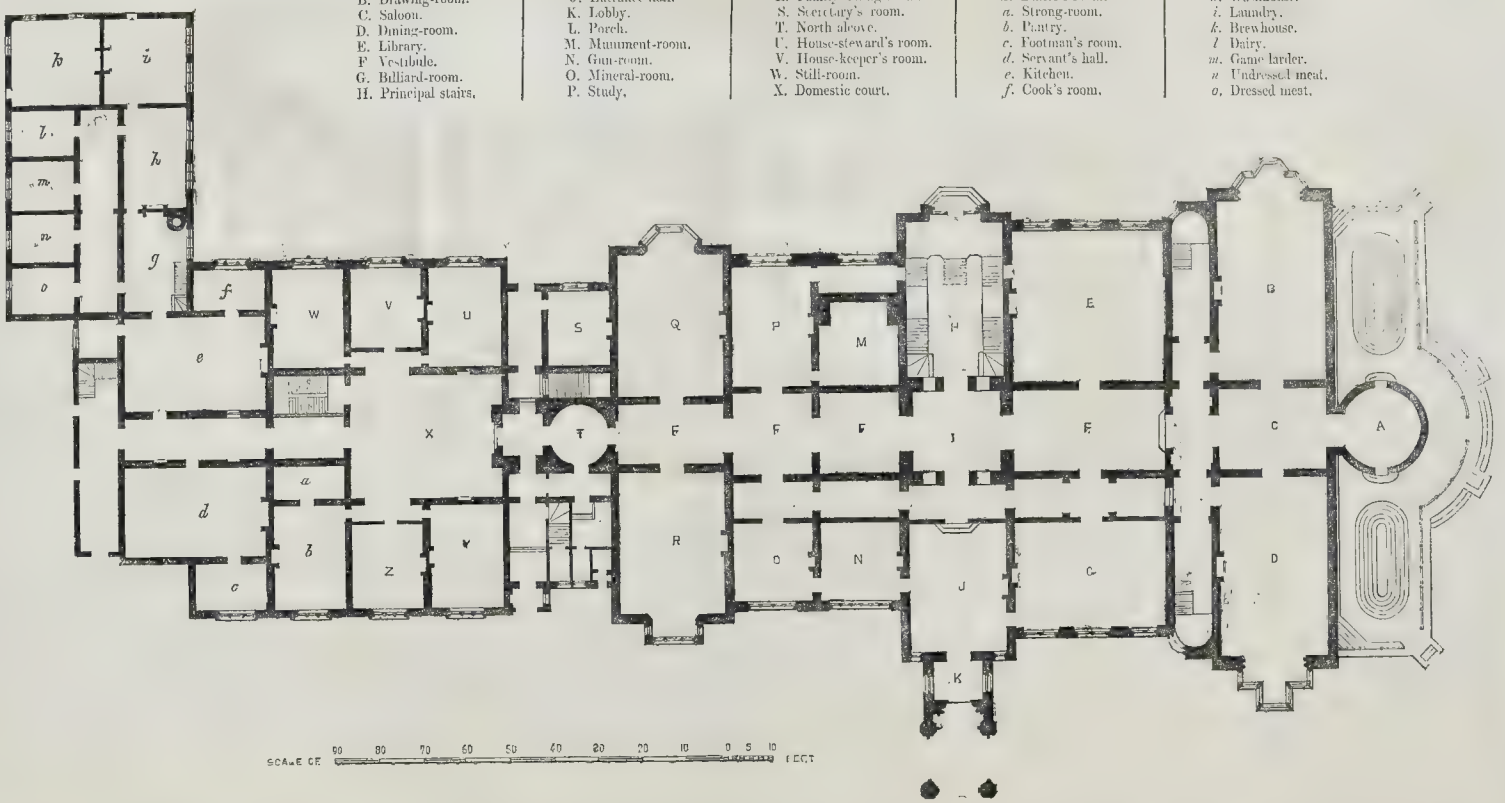
One of the difficulties that attended the arrangement of the plan arose from the immediate proximity of the house to the village, and the necessity of having the principal apartments far removed from the domestic offices. This, however, has been obviated partly by a sub-way from the chief dining-room and corridors of communication between the ground-floor and basement.

The greater part of the house is built fire-proof, having arched floors of hollow brickwork supported on strong cast-iron girders. The building is not yet finished.

THE GLASS TRADE.—The large houses are well supplied with orders, although the high price of fuel and other articles used in the manufacture are said to be no small impediment, as it is found rather difficult to realize the advance upon manufactured goods. In the stained-glass branch great progress is being made, and more has been done within the last few years to restore this art, than had been done in the last two centuries.

PLAN OF GRITTLETON HOUSE, WILTS.

A. South alcove.
B. Drawing-room.
C. Saloon.
D. Dining-room.
E. Library.
F. Vestibule.
G. Billiard-room.
H. Principal stairs.
I. Central hall.
J. Entrance hall.
K. Lobby.
L. Porch.
M. Monument-room.
N. Gun-room.
O. Mineral-room.
P. Study.
Q. Morning-room.
R. Family dining-room.
S. Secretary's room.
T. North alcove.
U. House-steward's room.
V. House-keeper's room.
W. Still-room.
X. Domestic court.
Y. Steward's office.
Z. Butler's room.
a. Strong-room.
b. Pantry.
c. Footman's room.
d. Servant's hall.
e. Kitchen.
f. Cook's room.
g. Scullery.
h. Washhouse.
i. Laundry.
k. Brewhouse.
l Dairy.
m. Game larder.
n Undressed meat.
o, Dressed meat.





GRITTLETON HOUSE, NEAR CHIPPENHAM, WILTS.—Mr. James Thomson, Architect.

ENGINEERS' PUPILS.

As the columns of your journal have always been distinguished by the honourable feeling they inculcate, it may not altogether be out of place to submit the following case to your readers. The death of my father, four years ago, having thrown me from affluent circumstances into those of comparative poverty, I considered it necessary to embrace some profession, by which to support myself, and, accordingly, seeing an advertisement in your columns, to the effect that an *engineer* was in want of a pupil, I applied and became articled.

It may be right here to state, that previous to being articled my master informed me, that he united the business of a land surveyor to that of an engineer. The following is an extract from the indenture of apprenticeship, viz.: "That he, the said ——, shall and will accept and take the said F. P. as his apprentice, and also, by the best ways and means he can, and to the utmost of his skill and knowledge, teach and instruct, or cause to be taught and instructed, the said F. P. in the business or profession of a land surveyor and engineer, and in all things whatsoever relating thereto."

Notwithstanding this (as it then appeared to me) very clear and concise agreement, the extent of my experience whilst with this *gentleman* (in spite of my constant remonstrances), consisted in the admeasurement, plotting, and planning of four estates, comprising together rather less than 450 acres, and I might here state that the largest of these, consisting of 200 acres, was measured previous to my becoming articled, and that I was given to understand several larger surveys were in contemplation.

The remainder of my time has been occupied in keeping the accounts of several agencies, in which my master has been engaged, and some small valuations, made in accordance with the Parochial Assessment Act; so that after paying a handsome premium, and spending three years, the only knowledge I have acquired (as far as I can see) is that of an accountant.

The point to which I would particularly call your attention is, whether such information as I have acquired is sufficient to constitute an *engineer*, or even a *land surveyor;* and if not where am I to receive any redress or remedy? As mine is not a solitary case, and as I feel convinced that the same practice is likely to be continued, I think it right that such conduct should be exposed, and have therefore to request the favour of your making this communication public.

F. P.

Notices of Books.

The Brasses of Northamptonshire. By FRANKLIN HUDSON, Esq. The Willows, Braunston, Daventry. London: M'Lean, 1853.

AMONG the counties of England which contain interesting memorials of the early history of this country, there is hardly any that has a more varied collection, or one that extends over a longer period, than Northamptonshire. "In it may be seen the military roads and stations of the Romans, the seats and the monasteries of the Saxons, monuments of the great Norman and English families, the battle-field of Naseby, the notorious Ashby-hall (the mansion of the Catesby's), that of Burleigh, and the grave of Mary Queen of Scots."

The incised monuments of a county so rich in historical associations are peculiarly interesting, and the work before us consists of drawings of these, reduced to scale from "rubbings" in possession of Mr. Hudson, and engraved in tinted lithography and bronze so as to be *facsimiles* of the originals.

Facing each engraving is an account of the person commemorated, of the style of the brass, and of any interesting details which may be connected with the family to which it belongs.

The work will be divided into four parts (each complete in itself), having the ecclesiastical division of the county into deaneries as its guide, so that the brasses in each deanery will be published together. Part I. has been issued, and will, we have no doubt, be welcomed by all who are interested in the subject.

Miscellanea.

THE LABOUR QUESTION.—The movement for advance of wages continues to spread. Nearly all the trades in South Wales have followed the English operatives, and where an advance has been refused, general recourse has been had to the strike. In some cases this has been successful, in many unavailing, the employers preferring to obtain fresh hands rather than comply with the conditions proposed. In some instances the advance demanded has been as much as 25 per cent. This has been established throughout Merthyr, Newport, Caerphilly, Abergavenny, &c. The painters have had a rise of 10 per cent.; and carpenters and masons have also benefited. The stonemasons and labourers employed by the Cardiff New Dock Company in raising and preparing stone at Birchill, near Coleford, lately struck for an advance of wages. The stone-cutters, about sixty in number, who had been receiving 4s. per day, required an advance of 6d. a day; and the labourers, who had been paid 2s. 6d. also demanded the same advance. The men stayed away for three days, as the company refused to advance their wages. Those employed at Howle-hill quarry also struck. The company then agreed to give the masons 4s. 3d. and the labourers 2s. 8d. a day. The men at Birchill also returned to their work on the same conditions, with the exception of a few whom the company refused to take on again. The joiners in the Isle of Man have obtained an advance of 3s. a week, making their wages 18s. The carpenters of Torquay, Barnstaple, and Southmolton having civilly asked for an increase, the employers have generally granted it. The Exeter carpenters are about to make a similar request. The joiners of Wigan demand half an hour for tea, besides an increase of 2s. a week. The masters not complying, some left the town, and others are out at present. The brickmakers are also on the strike. They demand that all bricks should be moulded to one particular size, viz. 10 inches long by 5 broad and 3 thick, instead of 2½ inches in thickness as heretofore. They also require an advance of 1d. per 1,000 for each of the four persons engaged in the making, or 4d. per 1,000 altogether. The masters decline to accede to these terms. The coal-miners ask for an advance of 2d. in the shilling for all kinds of work whatsoever. The plumbers of Liverpool had a general meeting on Monday in last week, when it was resolved "that 26s. be the minimum rate of pay" a week. The present rates of wages were stated to be 4s. 4s. 6d. 4s. 8d. and 5s. a day. A motion to seek an advance of 2s. a week on present wages was rejected, and the previous resolution agreed to by 38 to 29.

THE METAL TRADES.—At the final quarterly meeting of ironmasters, the reduction of 20s. proposed at the preliminary meeting was confirmed: indeed, previous to the last meeting, even the reduced price was not maintained, and, there is a general look out for another reduction as not far off; and that already the small masters, as heretofore, are selling below the nominal market price is generally admitted. Flatness is the general tone under the present precarious state of prices. In the districts, however, where iron and the other metals are turned to account in manufactures, the late reductions, especially the wholesale reductions in the price of copper and tin, have given a stimulus which, if supported by farther reductions, will soon enable many of the struggling and industrious manufacturers to recover from the paralysis into which the late foolish proceedings had plunged them. The surety of farther reductions, however, still greatly checks the returning prosperity of the metal trades in general.

BURY ARCHÆOLOGICAL INSTITUTE.—The fifth annual meeting of this society was held on Wednesday in last week, in the library of the Bury Athenæum, the Rev. Lord A. Hervey in the chair. The report stated that arrangements have been made for placing the institute in union with the Bury St. Edmund's Athenæum; by which the Bury and West Suffolk Museum will come under the direction of the institute; and for temporary reception and display of which a commodious house has been provided. It has therefore been deemed advisable to widen the range of the society's action, by taking in the whole county of Suffolk, and to extend its sphere of research by embracing every department of the natural history as well as of the archæology of the district. With this view it is proposed to alter the title of the society to the Suffolk Institute of Archæology and Natural History; to extend the existing museum and library, and to form a gallery of art, to which each member shall have access for himself and friends. It is proposed to raise the subscriptions from 5s. per annum to 10s. A paper, by the secretary, Mr. Tymms, on the old rectory-house at Hawsted, built by Dr. Joseph Hall, Bishop of Norwich, was read. Various objects of archæological interest were exhibited, and presents announced.

SECRETS OF THE IRISH PAVIORS.—For some time the attention of the Judge of the Brompton County Court has been occupied in determining a very pretty faction quarrel between the Irish paviors; and although the dispute was but as to a few shillings, the boys must have expended a heavy sum in having it out. In Savage *v.* Doyle, the plaintiff said he took a sub-contract (it appeared, five degrees removed from the original contractor) to do some pavior's work for 8*l.* 11*s.* 6*d.* "Mr. Doyle—bad luck to him for ever twice over—gammoned him out of that same by offering him 3*l.* for the transfer. The bilder's bilder's foreman's, cousin's frind he tuk the job of, gave him 5*l.* to pay the men, and he paid ivery goolden queen to Tim Doyle, the villin,"—and he had received the other part of the money too, and all Mr. Doyle had paid him was 47*s.*; and although the "big" contractor supposed Mr. Doyle paid the workmen 5*s.* a day, so that good paviors should be employed, they only received 3*s.* 9*d.* This made up the profits. Mr. Doyle now became plaintiff, and sued Mr. Savage for 12*s.* money lent. Mr. Gregory, a witness for both, next sued Mr. Doyle for the wages he had "chated" him of upon the contract; and here the scene defies description. Nine Irish paviors, all of a row, discussing to the Judge claims and opinions; whilst at their back were about a baker's dozen of ladies at the same work. The Judge, in Savage *v.* Doyle, gave a verdict for 13*s.* In Doyle *v.* Savage, a verdict for 12*s.* In Gregory *v.* Doyle, a verdict for 10*s.* This decision appeared to please all sides, for each claimed the day, although there is a heavy sum for each of the paviors yet to pay for witnesses. The evil system of sub-contracting was exhibited in the present instance to an alarming extent.

MONUMENT TO DE WITT CLINTON.—Mr. Henry K. Browne, of Brooklyn, has executed, in bronze, a colossal figure of Clinton, of which a description is given in the Albany (U. S.) *Evening Journal*, from which it appears that the statue is 10½ feet high. The costume is that of a gentleman fifty years ago. Over the left shoulder is thrown a cloak. The pedestal, which is about as high as the statue itself, is also of bronze. This is a design by Upjohn. Its cornices are adorned with vines and oak-leaves. The two principal sides are covered with bas-reliefs. It is proposed to make application to the Legislature to authorise its erection in the Capitol Park. The cost is estimated at about 20,000 dollars.

ECCLESIOLOGICAL SOCIETY.—A committee meeting was held on April 7. Various letters were read. Mr. C. E. Giles exhibited his designs for re-building Kingweston Church, Somersetshire, and also his drawings for the restoration of the church at Bathealton, and for a new school at Charlton. The committee also inspected Mr. Butterfield's designs for a restoration in Lincolnshire, Mr. St. Aubyn's drawings of the four new churches of S. Mary, S. Stephen, S. James, and S. Paul, at Devonport, and Mr. White's working drawings of the new church of All Saints, Kensington, now building at Notting-hill. After some conversation as to the difficulty of obtaining reviews of new churches or church restorations for the *Ecclesiologist* from actual inspection of the buildings, it was determined that a portion of the funds of the society should be devoted to paying the expenses of members who would visit particular works with the view of criticising them for the society's organ.

VULCANIZED INDIA-RUBBER AND GUTTA-PERCHA.—In the course of a discussion at the Institution of Engineers on the 12th (subject, the concussion of pump-valves), it was stated, according to the "authorised report," that although the use of vulcanized india-rubber had not been found to diminish the shock of the beat of valves, under heavy pressure, it had been very successfully applied to the air-pump buckets of marine steam-engines. It was stated that the vulcanized india-rubber would bear perfectly almost any amount of compression, for an indefinite period, but that, on being subjected to repeated extension for a lengthened period, its elasticity became impaired: this, it was suggested, might arise partly from a portion of the sulphur, which was only held in mechanical combination, being thrown off, and also from the substance absorbing heat in contraction and giving it out on distension, and thus producing "eremacausis," which eventually caused its disintegration. It was shown that oil rendered tubes of the material fragile; and that the continued action of light and air upon any india-rubber fabric, sufficed to produce a change and render it brittle. It was shown also, that although gutta-percha tubes, whilst under water, were very durable, yet that on exposure to the air for a few years unpainted, the substance laminated, and could be rubbed to pieces. The gutta-percha covering of the wires of the submarine telegraph was very durable under the sea, but on the face of the Dover cliff it had soon been destroyed; it was then buried under ground, and had proved perfectly successful.

SEWERAGE COMPENSATION CASE.—An inquiry under the Lands Clauses Consolidation Act was held at the Public Office, Birmingham, on Saturday in last week, for the purpose of assessing the value of certain land, situated at Long Acre, in the parish of Aston, belonging to Mrs. Catherine Chattaway, and required by the town council for sewerage. On the part of Mrs. Chattaway, it was stated that the corporation proposed to cut through the ground to a certain depth, and according to the Act Mrs. Chattaway could not build over the sewerage without permission of the council, and that they had not accorded, so that the property would be materially deteriorated in value, as it had been laid out for building purposes.—Mr. John Hornblower, surveyor, was called, and stated that he had carefully examined the property. The land required was, in his opinion, worth 915*l.* 18s. 9d.—Mr. Robins, surveyor, fixed the value at 875*l.* 18s. 9d. Mr. Fowler, jun. at 823*l.* 5s. and Mr. Chesshire at 788*l.* 6s 11d. For the corporation it was contended that they had offered far more than the actual value, namely, 200*l.* and that the proceedings were only instituted to fix, if possible, the price of other property also required for sewerage. They would require to make four miles of sewerage, and if the value of the land was to be thus enhanced, the undertaking would be jeopardised. The corporation would give permission to build on the land, so that on that ground there could be no cause of complaint.—Mr. J. P. Smith, civil engineer and town surveyor, then deposed to the necessity of sewerage for the borough, from the fact of its containing 8,000 acres of land, extending over twenty-one miles in circumference. The present building area is about 4,000 acres, the population a quarter of a million, and the length of streets something under 150 miles. All he intended to do with Mrs. Chattaway's land was to make a sewer through a portion of it, to cover it over, give up the surface, and make compensation for the damage done. He felt confident Mrs. Chattaway's property would be materially benefited; and if the corporation did not make a sewer, Mrs. Chattaway would have to do so.—Mr. Henry Smith, of the firm of Fallows and Smith; Mr. Hirst, of Knowle; Mr. Edward Cooper, of Henley-in-Arden; Mr. Cooksey, of West Bromwich; and Mr. Joshua Hammond, surveyor, corroborated Mr. Smith's evidence relating to the land in dispute, and gave it as their opinion that Mrs. Chattaway's property would be benefited by the sewer passing through it. The assessor then addressed the jury; after which they returned a verdict of 65*l.* 16s. 8d. value of the land, and for damage, severance, &c. 200*l.*

RAILWAY MATTERS.—The first sod of the Somerset central line was turned at Highbridge on Monday in last week. This line is one of those roadlets which are now gradually springing from the main lines. It is 12 or 13 miles long, and is designed to connect what is termed "the port" of Highbridge with the town of Glastonbury, and both places with the Bristol and Exeter Railway. The works are of a very light nature, and indeed are almost entirely surface works. The capital is but 70,000*l.* and a guaranteed contract has been entered into by Mr. Rigby for making the way, laying the rails, and erecting the stations, for the sum of 56,000*l.* It is said that this will be the cheapest line in England.——The tunnel at Ludlow has been completed by Mr. Brassey and his subcontractors.——The temporary platform over the bridge of the Boyne Viaduct, in order to allow of the passage of trains within the time specified in the contract, progresses, while the mason and other works on the permanent structure are being carried on. The principal difficulties hitherto existing with regard to a foundation for the North Channel pier are said to have been surmounted, so that no future impediments, of a serious character, are apprehended. ——The London and North-Western Company have been found liable in 1,250*l.* damages for infringing Smith's patent for wrought-iron locomotive wheels.

GAS.—At Tewkesbury, the gas-consumers, led by the mayor, have resolved that the price of gas is too high there, and ought not to exceed 5s. a thousand cubic feet, and that "they are well informed that in many towns and cities where high prices have been abandoned, lower ones are found to afford ample dividends to the proprietors." The gas company is to be communicated with, and if their resolution be not acted on, a new company is to be formed.——At Stratford-on-Avon much the same state of affairs exists as at Tewkesbury, except as to a formal resolution on the subject.——Gas-works have been completed at Kenilworth.——The Altrincham Gas Company propose to reduce their price to 5s. 6d. and to extend their works to meet the increased consumption. ——The Rotherham Gas Company, who supply some large consumers at 3s. 5½d. and the smallest at 5s. have just declared a dividend of 8 per cent. with a surplus to a reserve fund, and they propose to enlarge their works and reduce their prices about 5d. a thousand cubic feet to small consumers, and 1½d. to large. ——The population of Sunderland, says the *Gateshead Observer*, being rapidly on the increase, and house accommodation as rapidly enlarging (not only new streets, but new towns growing up in the suburbs), gas, in consequence, is in great demand; and in order to meet this want, the Subscription Gas Company have resolved to erect new gas-works upon their premises in Hope-street, Newtown, Bishopwearmouth. The length thereof will be 84 feet, and breadth, 57 feet. There will be 56 retorts, with room for 28 more should more be wanted hereafter. These works will supply 100,000 cubic feet of gas; and the works in Russell-street, Sunderland, about the same quantity. The new works are being erected under the superintendence of the company's manager, Mr. George Hudson.——A new Gas Company is about to be formed in Inverness. Shares have been applied for to the extent of 1,400*l.*——A project has been announced, the object of which furnishes a curious illustration of the slow way in which improvements penetrate to India. It is called the Oriental Gas Company, and is formed for the purpose of lighting Calcutta, Madras, and Bombay. Gas, although it has long been used in Australia, has never yet been introduced into our Indian territory, and it is contemplated in the first instance to begin with Calcutta, where the population is 500,000.

BELFAST SCHOOL OF ORNAMENTAL ART.—The annual meeting of the subscribers and friends of the Belfast Government School of Design or of Ornamental Art was held on Friday in week before last in the Institution, College-square North. There was a very large number of ladies present. Mr. R. B. Houston took the chair, and the secretary read the report, from which it appears that the school continues to progress steadily and satisfactorily. The number of pupils on the books shows an increase over last year; and the total now included in the public and private classes is 212, being 152 in the former and 60 in the latter. The average attendance has also been much more regular than at any former period. Applications continue to be made by manufacturers who are desirous of employing pupils, either temporarily or permanently, as designers and draughtsmen; and an opportunity of displaying the acquirements, in decorative colouring, of some of the students, was afforded at the late meeting of the British Association in Belfast, when the local committee of that body asked and obtained the assistance of a few pupils, who ornamented the rooms in which the general evening meetings were held, with illustrations from Flaxman, in distemper. The report attributes the successful progress of the school in no small measure to the teaching of the head-master, Mr. Nursey, and his assistant, Mr. Wood. The finances are described as being in a healthy position. The Government grant for 1852-3 was for the usual sum of 600*l.*; the local subscriptions show no falling off; and the pupils' fees have increased. The current expenditure of the year has been met, and a few old accounts, remaining over since last year, have been liquidated, so that the school is now quite out of debt, and a fair prospect exists of its continuing to show a clear balance-sheet. After the reading of the report various scholarships and other prizes were distributed. The drawings and designs exhibited are highly spoken of.

TELEGRAPHIC.—The Magnetic Telegraph Company have their wires in working order along the line of the Caledonian Railway. Offices for the receipt and transmission of messages by telegraph have been opened at the Gretna and Beattock stations.——It is stated that the submarine telgrraph, which Mr. Brett is about to establish between the Spezzia, Cagliari, and Cape Teulada, the most southern point of the island of Sardinia, is to be extended to Malta, at the expense of the English Government.

GLASGOW GOVERNMENT SCHOOL OF DESIGN.—A report has just been published of the proceedings at the eighth annual meeting of this institution, held on 5th instant. The Committee of Management report that the prosperity of the institution continues unabated. The total number of students on the books last year was 911; this year the total is 948, showing an increase of 37. The number of applicants whom it has not been possible to admit from want of room, amounted to forty the first night of the season, October, 1852, and from that time the applicants for elementary instruction exceeded the existing accommodation, and ever since, every place in the elementary class has been filled. To aid in the object Government has in view, the Committee announce that they have established a normal class for teaching the elements of drawing to masters of schools. Instruction in this class will be afforded gratis. The income for the past year by Parliamentary grant, donations, and fees, has been 2,121*l.* 17s. 7d. and the expenditure less by 983*l.* 10s. 6d.

SYDENHAM.—The Conservative Land Society have purchased an estate within sight of the Crystal Palace at Sydenham, close to the Forest-hill station, and a short distance from Lewisham.

ESSAYS ON PORTUGAL IN CONNECTION WITH THE GREAT EXHIBITION.—In competition for the premium of fifty guineas, offered by Mr. B. Oliveira, M.P. four essays were sent in,—by Daniel da Silva Pereira e Cunha, of Fundão, in Portugal; William Bell, Phil. D. London; Dr. Whitehead, also of London; and Joseph James Forrester, of Oporto and London. The premium was awarded to the last-named gentleman. Mr. Oliveira, on the recommendation of the judges, intends to present each of the authors with a medal.

ST. MARK'S CHURCH, REGENT'S-PARK, built on a site at the termination of the long walk in the park, was consecrated a few days ago. The church is described as being of the Geometric period. "It is 103 feet long, 61 feet broad, divided into nave and aisles by five bays of arches and columns on each side, constructed of Anstone stone. The chancel, which presents no marked feature externally, but is a prolongation of the nave, is lighted by a 7-light traceried window of large size, adapted from the west window of Tintern Abbey, and fitted up with chancel sittings, and other fittings, executed in wainscot, and paved with encaustic tiles. The nave has an open-timbered roof, and the ceilings of the aisles are close boarded and ribbed with timber. The aisles present externally the feature—rather unusual in modern church architecture—of two tiers of windows: the upper ones, which are triangular, give light to the gallery. The church, giving accommodation for 1,258 sittings, has been erected, under a contract, for 6,776*l.* by Mr. Meyers, from the designs of Mr. T. Little, architect."

ORDNANCE SURVEY OF SCOTLAND.—The corps of engineers at present employed in the Parliamentary survey of Scotland includes, it appears, about 150 men, under command of Captain James. About 100 of them are engaged in Fife, and the remainder in Lanarkshire. The survey of Fife, it is calculated, will be completed in about six months; after which Perthshire, it is believed, will be commenced on the six-inch scale, for which the great majority of the counties have petitioned as most generally useful.

THE BURNING OF THE IMPERIAL THEATRE AT MOSCOW.—The *Gazette des Theatres* gives details of the burning of the Imperial French Theatre at Moscow. The fire spread with such rapidity that in three hours the only thing that remained was the bare and blackened walls. The building was inhabited by more than 150 *employés*, and gave employment to more than 1,000 persons. The number of deaths during the fire was eleven. The loss is estimated at 3,000,000 of roubles (12,000,000 *f.*)

LORD ROSSE'S CONVERSAZIONE.—On the 23rd inst. Lord Rosse held his first reception, which was very numerously attended. Amongst the various objects of interest exhibited were the models which have been submitted by the astronomer royal, Mr. Troughton, and others for the telescope proposed to be sent out to the Southern hemisphere. Claudet had some marvellous coloured daguerreotypes for the stereoscope.

THE STAGE IN CONNECTION WITH CRIME.—In his important work on "Crime,—its Amount, Causes, and Remedies," Mr. Frederick Hill regards the drama as a powerful corrective, and accuses the upper classes of contributing to swell the statistics of offence by neglecting to go to the theatre, and doing in that respect as their equals do on the continent. Even the juvenile drama, that greatest of all mischiefs in magisterial eyes, as the prime incentive to vice of every kind, Mr. Hill eulogises, and says:—"Instead of the dangerous and probably vain attempt to *suppress* cheap theatrical performances (for every observer of childhood must observe that the love of the drama is implanted in us by nature), *let the educated join in well-directed efforts to cultivate and improve the popular taste*, and to purify and reform the drama, and render it what even now it is frequently, *the powerful ally of virtue.*" These sentiments, so far, at least, as regards the use to which cheap amusements for the people might be put, are entirely in accordance with what we some time since suggested in reference to some remarks by Lord Ingestre, reported in our columns at the time.

TO CORRESPONDENTS.

"G. M H." (the Committee for the Architectural Exhibition have had many difficulties to contend with. We will endeavour to give some particulars next week). "X." (declined with thanks). "W. C." (we decline interfering in private disputes unless consulted professionally). "W. C" Westminster (what was the "invention" referred to?). "T. W. R." (observations to the same effect have recently appeared). "C. L. N." "G. E. P." "A Speculator." "B. O." "T. L." (we are forced to decline). "C. T." "T. S. S." "J. C." "T. S. S." "W. H." "T. W." (who is the architect?). "R. M." (we cannot undertake to decide wagers). "S. C. jun." "A. S." "Mr. E." "T. E." "R. W. A." "G. J. R." "R. L. S." "*Crux*." "D. C." "T. V. L." "Mr. S." "C. G." "C. R. W." (shall appear). "A. W. H.", "A. Z."

We are forced to postpone several communications.

ERRATUM.—The remark by Mr. Scott, quoted last week in connection with Doncaster Church (p. 267), is from a published work of his, and not from any report to the committee, as was stated to us.

ADVERTISEMENTS.

TO BUILDERS AND CONTRACTORS, &c.

PARTIES in the above Line are respectfully informed that an OFFICE has been OPENED for the SUPPLY of FIRST-RATE MECHANICS (Carpenters, Joiners, Bricklayers, &c.) at the National Coffee-house, 1, Little Turnstile, Holborn, where all applications for men, addressed to W. RICHARDSON, shall receive immediate attention.

N.B. Foremen provided in the above Trades.

D. O. HASWELL, Writer to the Trade, Writer on Glass, and Decorative Painter, is in want of an OUT-DOOR APPRENTICE. A moderate premium required.—38, Greek-street, Soho-square.

OUT-DOOR APPRENTICES. — Wanted, two respectable YOUTHS for a peculiar branch of the ENGINEERING and TOOL MAKING TRADE. This is an opportunity that is rarely offered for acquiring a light, superior and lucrative business. A small premium will be required.—Apply, in the first instance, by letter, to F. B. 23, Upper Stamford-street; or personally on THURSDAY evening, May 5th, after Six o'clock.

MOULDING MACHINE. — Wanted, a MAN, who has been accustomed to drive a moulding machine, and can have a recommendation from his last employment.—Apply to Mr. NICKS, at the St. Pancras Saw Mills, Old St. Pancras-road.

TO IRON-PLATE WORKERS AND STOVE-FITTERS.

WORKMEN in the above branches are WANTED by the Patent Economic Oven Company.—Application to be made personally, or by letter, post-paid, to Mr. J. CHURCH, Chelmsford.

TO ENGINEERS AND SURVEYORS.

AN APPOINTMENT, with a liberal Salary, can be secured by the advertiser to either of the above professional gentlemen, for the temporary advance of £1,500, for which security will be given. Apply, stating age, for further particulars, to A. B. Messrs. Lowe and Oliphant's, Threadneedle-street, City.

TO BUILDERS' CLERKS.

WANTED, in a Builder's Office, in a large commercial town, a CLERK, who is competent to take out quantities and prepare estimates, and keep the accounts. Respectable reference will be required.—Address to L. T. Office of "The Builder," 1, York-street, Covent Garden, stating qualifications and salary required, and how long with last employer.

WANTED, immediately, in an Architect's Office of extensive practice, an ARTICLED PUPIL; also an ASSISTANT, who wishes for improvement.—Apply by letter, pre-paid, to L. Post-office, Leeds, stating real name and address.

WANTED, a sober, steady, respectable person to SUPERINTEND, on the part of the builder, the ERECTION of a BUILDING in the metropolis; he must understand the several trades, and have filled a similar situation before. Anyone answering the above description who will write, P.P., directed to A. B. at the office of "The Builder," 1, York-street, Covent-garden, stating where last engaged and amount of salary required, if likely to suit, will be replied to.

TO PAINTERS.

WANTED, as WORKING FOREMAN, a steady Young Man of industrious habits; he must be able to make estimates and measure works. Those only of great practical experience and of first-rate ability need apply, any day between Nine and Ten o'clock, to Messrs. GEO. K. GEYELIN and CO. Patent White Zinc and Permanent Colour Manufacturers, Victoria Wharf, Regent's-park-basin.

WANTED, immediately, for a constancy, a thorough GILDER in all its branches. Unexceptionable references will be required.—Apply by letter, pre-paid, to X. Y. Office of "The Builder," 1, York-street, Covent Garden.

TO MECHANICAL DRAUGHTSMEN.

WANTED, an ASSISTANT, who has had practical experience in a Mechanical Engineer's Establishment, and who is a neat and expert draughtsman. Salary to commence at Six per week.—Address, C. D. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, an Architectural Draughtsman, fully competent to get up working and other drawings.—Apply, by letter, stating age, terms, and last engagement, to R. THOMPSON and CO. Share Brokers, Darlington. A Pupil also wanted.

WANTED, by a Surveyor in the Country, a CLERK, competent to prepare fair and working drawings, specifications, &c.—Address, stating age, terms, where last engaged, &c. to H. H. 13, Winchester-terrace, Pentonville, London.

WANTED, a good DRAUGHTSMAN, who is thoroughly competent to make working and finished drawings and prepare quantities.—one accustomed to a builder's office would be preferred. The situation is with an extensive builder in the country.—Address, stating terms and qualifications, to W. B. Sussex Hotel, Bouverie-street, Fleet-street.

TO BUILDERS' CLERKS.

WANTED, a steady, respectable Young MAN. He must be a good draughtsman, also capable of measuring, and keeping a set of books. Salary, 90l. per annum. Testimonials to be sent (post-paid), to C. F. Post-office, Prescot, Lancashire.

TO PARENTS AND GUARDIANS.

WANTED, an INDOOR APPRENTICE to a CARPENTER and JOINER. Term five years. Premium 37l. with a liberal scale of remuneration.—Address to Z. M. at Mr. Williams's, 60, Sun-street, Bishopsgate, with full particulars as to age, &c.

TO SMITHS, ENGINEERS, BUILDERS, AND OTHERS.

WANTED, by a Smith who has a thorough practical knowledge of all its branches, a SITUATION as FOREMAN. Can give undeniable references from fifteen to twenty years' standing, age 43; any firm requiring a man where confidence can be placed may have further information by directing to M. F. care of Messrs. Wilcocks and Keys, Stationers, 44, Goodge street, Tottenham-court-road. No objection to the country.

TO BUILDERS, &c.

WANTED, by a confidential Man, who will undertake the entire management of the accounts, an ENGAGEMENT, to take charge of the books, and superintend the business at home in the absence of his employer.—Address to A. Z. the Dairy, 94, Chapel-street, Pentonville.

WANTED, by a Married Man, 36 years of age, active, skilful, and of great experience in the draining, improvement and cropping of land, the management of timber, the breeding and treatment of stock, and the general management of landed property, a SITUATION as UNDER-STEWARD or FARM BAILIFF. Most satisfactory references.—Address by letter, A.B. *Journal* Office, Leicester.

TO BUILDERS, &c.

WANTED, by a Youth, aged 17, a RE-ENGAGEMENT in a BUILDER'S OFFICE.—Address, J. F. Office of "The Builder, 1, York-street, Covent-garden.

TO BUILDERS.

WANTED, by a practical Joiner, a SITUATION as SHOP FOREMAN. Unexceptionable references from the situation he is about to leave.—Address, Y. Z. care of Mr. Walker, Darlington-street, Wolverhampton.

TO PLUMBERS, GLAZIERS, &c.

WANTED, by a Young Man, a SITUATION as PLUMBER, GLAZIER, and PAINTER, but Plumbing preferred, in town or country.—Address, R. B. Old King's Arms, Short's-gardens, Long-acre, London.

WANTED, a SITUATION to superintend the erection of buildings, of any description. Good references can be given.—Address, A. B. 7, Queen-street, Grosvenor-square.—April 28, 1853.

AN ARCHITECT, SURVEYOR, and CIVIL ENGINEER, wishes an ENGAGEMENT as PRINCIPAL CLERK in the Office or as Clerk of Works in a large establishment. Address, R. W. T. Messrs. Atchley and Co.'s, Architectural Booksellers, 196, Great Russell-street, Bedford-square, London; where specimens of drawing may be seen.

TO ARCHITECTS AND BUILDERS.

AN efficient CLERK of WORKS wishes for an ENGAGEMENT, or to take charge of the details of a gentleman's practice. Is a good, fair, and detail or working draughtsman, and well experienced in the several branches of building and construction. Testimonials unexceptionable.—Letters addressed to S. D. 11, Trevor-square, Brompton, will be forwarded.

TO CIVIL ENGINEERS AND OTHERS.

A GENTLEMAN, 35 years of age, who has been for fifteen years engaged in levelling, surveying, contouring, laid-drawing, &c. &c. is anxious for EMPLOYMENT, either in the above duties, or in any other business at home or abroad, where steadiness and a will to make himself useful would be essentials. Address, T. C. Office of "The Builder," 1, York-street, Covent Garden.

TO BUILDERS, CONTRACTORS, &c.

A MARRIED MAN, aged 28, wishes for a permanent SITUATION as CLERK, TIMEKEEPER, or STOREKEEPER; has had four years' experience with a railway contractor, and above four years with a builder. Satisfactory references and security if required. Terms moderate.—Address, A. B. 5, Chester-terrace, Cornwall-road, Hammersmith.

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

THE Advertiser, who has had the entire management of several jobs, and perfectly understands all branches of the building, is now open for a RE-ENGAGEMENT as CLERK of WORKS.—Address, 3, Belvidere-crescent, Belvidere-road, Lambeth.

TO ARCHITECTS AND SURVEYORS.

A YOUNG MAN having been in the above capacity five years, wishes for an ENGAGEMENT where he would have an opportunity of farthering his knowledge; is a fair draughtsman.—If permanent, a moderate salary would be accepted, as improvement is the principal object. Good references given if required.—Address, C. 14, Branston street, Portman-square.

TO ARCHITECTS AND CIVIL ENGINEERS.

AN ASSISTANT, capable of making Finished and Working Drawings, and superintending works, wishes a RE-ENGAGEMENT.—No objection to the country.—Address, P. B. 54, Aldersgate-street.

TO ARCHITECTS AND BUILDING CONTRACTORS.

AN active Person, of considerable experience, aged 39, is open to an ENGAGEMENT as SUPERINTENDENT of WORKS, or as out-door MANAGER to a BUILDING FIRM. He is a good draughtsman, and is thoroughly conversant with every branch of the building trade, both theory and practically, having superintended extensive works, both as clerk of works and as a contractor, and in both cases had the management of a large number of men. He is fully competent to measure and square up accounts; also to prepare detail drawings, specifications, estimates, and take out quantities, &c. &c. Unexceptionable references can be given, both to architects and builders.—Address, A. Z. 28, Deverill-street, Dover-road.

TO CARPENTERS, BUILDERS, &c.

AN experienced Man is open for an ENGAGEMENT as Shop or out-of-door FOREMAN, or as general Superintendent of Works. A Ten-years' character will be given. No objection to the country.—Address, A. B. at Mr. Carter's, 1, Alfred-terrace, King's-road, Chelsea.

PARTNERSHIP.—A Builder and Timber Merchant wishing to extend his business is desirous of meeting with an active PARTNER who can command from 2,000l. to 3,000l. References of the highest respectability will be given and required; none but principals will be dealt with.—Address, free, to A. B. F. Office of "The Builder," 1, York-street, Covent-garden. Also a well-educated Youth wanted in the office

TO PAINTERS, DECORATORS, &c.

TO BE DISPOSED OF, the GOOD-WILL, LEASE, and FIXTURES of an excellent BUSINESS, in a first-rate situation at the West End, established many years Satisfactory reasons will be given for parting with it.—For particulars apply to Mr. JOSEPH MILLER, 74, Piccadilly.

SCAFFOLD POLES for SALE. — A large quantity of 4 to 6-inch new SCAFFOLD POLES, average length, 40 feet. Price for cash net, 1½d. per foot, where they lie.—Apply to Mr. NICKS, at the St. Pancras Saw Mills, Old St. Pancras-road.

SCAFFOLD and FALL ROPES, PATENT SASH-LINE, BED SACKINGS, COCOA-FIBRE MATS AND MATTINGS, may be had on the most reasonable terms of R. AUSTIN, Manufacturer, 431, OXFORD-STREET, LONDON

MESSRS. GALLI and COTTI, Decorative Painters from Milan, have the honour to inform the nobility, gentry, and architects, that they undertake to DESIGN and EXECUTE every species of DECORATION for public and private buildings and theatres. Messrs. G. and C. work in every material, such as oil colour, distemper, fresco, &c. and guarantee that their fresco painting shall stand uninjured in situations exposed to the air and rain. The advertisers were successful exhibitors at the Great Exhibition of 1851, and can refer with satisfaction to other works executed by them in the metropolis and the provinces. They have, moreover, much pleasure in stating that they were the artists who designed and executed the decorations of the steam-ship the *Divine Favour*, lately built in this country for the Pasha of Egypt, their work having been honourably mentioned in a lengthened article upon the subject in the Times of the 31st of August, 1852.—Apply at Mr. ROLANDI'S Foreign Library, Berners-street, Oxford-street.

CLAPHAM-PARK. — FREEHOLD BUILDING LAND TO BE SOLD or LET.—A few plots of FREEHOLD LAND in this healthy and respectable locality. This land is approached by dry, wide, handsome roads and footpaths; has an abundant supply of water and the most perfect drainage, being about four miles from the City; it presents altogether one of the best situations for building in the neighbourhood of London.—For terms inquire of Mr. CLIFTON, on the premises.

FREEHOLD BUILDING GROUND, of a first-class character.—TO BE LET, a very attractive PIECE of superior LAND, advantageously situate within three miles of the Post-office, with a considerable frontage to the high road, and most admirably adapted for erecting detached or semi-detached villas, which are much needed and constantly sought after. The respectable and healthy character of the locality, and its proximity to the metropolis, make it a very desirable situation.—For particulars apply to Mr. HERBERT PRICKETT, Surveyor and Estate Agent, 15, Chancery-lane, and 23, Paddington-green.

TO BUILDERS AND OTHERS.

HAMPSTEAD. — BELSISE-PARK. — TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot near London, approached from the Finchley-road, near the Swiss Cottage, and from the Hampstead-road through the well-known avenue of stately elms, and bounded on the north by Belsise-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr. C. J. RICHARDSON, Architect and Surveyor, 3, Keppel-street, Russell-square.

CORNER of CANNON-STREET and KING WILLIAM-STREET. — To Public Companies, Bankers, and Others. TO BE LET, in the new building in this excellent situation, extensive first-class premises, consisting of a ground-floor of 2,300 square feet clear, with a frontage of 100 feet; excellent light, and every convenience; quite distinct from the upper part, which is first-class offices, some of them still to let, and fire-proof.—Apply, between the hours of eleven and two, to Mr. W. H. DAWSON, Abchurch-yard, City.

TO CAPITALISTS, BUILDERS, AND OTHERS.

WESTON-SUPER-MARE, SOMERSET.—The only FRONTAGE LAND to the SEA remaining unbuilt upon in the town. TO BE SOLD, the Fee Simple and inheritance of and in ALL those several LOTS of FREEHOLD LAND (in one or more lots), as now marked out for building in an intended NEW SQUARE of about 40 large houses FRONTING AND OPEN ON THE WEST SIDE TO THE ESPLANADE AND THE SEA, OVER WHICH THERE IS AN UNINTERRUPTED VIEW. The square is intended to be 200 feet from north to south, and 200 feet from east to west, and to communicate on the east side with a handsome NEW STREET, about 40 feet wide and between 400 and 500 feet long. This valuable property is bounded on the south by Regent-street, and on the north by the Hotel-field, and contains altogether nearly four acres of the finest building land. "The finest Building Stone at 1s. 8d. per ton; Lias Lime 25s. per 100 bushels; best Building Bricks 21s. per 1,000, all delivered. The finest Building Sand on the spot, gratis. Timber, Bath Stone, &c. by Sea and Rails into the place, free from all Town and other Dues." These lots may be purchased or held on ground-rents at the option of the purchasers.—Plans and further particulars may be had of the proprietor, B. GUY PHILLIPS, Esq. Weston-super-Mare.

BUILDING GROUND TO BE LET, for a term of forty years, in the BELVIDERE-ROAD, Lambeth, suitable for the erection of a manufactory or workshop requiring good light and space. The ground is about 97 feet by 54 feet, having three frontages, and near the river.—For plan and particulars apply to Messrs. WIGG, POWNALL, and WIGG, No. 7, Bedford-row.

BUILDING LAND.—Some very eligible PLOTS of FREEHOLD BUILDING LAND TO BE LET for ninety-nine years, at low ground rents. Bricks on the ground. Money advanced.—Apply to Mr. RICHARD FIELD, Surveyor, 34, Coleman street, City.

BUILDING LAND with BRICK EARTH. About 30 ACRES of LAND in Islington, TO BE SOLD or LET, in entirety or lots.—Apply to Mr. PEACHEY, 17, Salisbury-square, Fleet-street.

BUILDING LAND.—QUEEN ANNE'S PARK, STROUD GREEN, HORNSEY.—The roads and sewers being now complete, several Plots may be had on Lease for building Purposes at moderate terms; the situation is very elevated, and commands the most extensive and beautiful prospects to be found within five miles of the metropolis.—For terms and particulars apply to Mr. ARTHUR TAYLOR, Architect and Surveyor, 18 A, Basinghall-street.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 35, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate.

ORPHAN WORKING-SCHOOL ESTATE, Haverstock-hill.—Land-tax redeemed. TO BUILDERS and OTHERS. TO BE LET, on building leases, for ninety-nine years from Christmas 1853, eligible BUILDING SITES on the above property, for semi-detached villas, rows of houses, and shops. The increasing demand in the neighbourhood for the description of house contemplated, renders this a desirable opportunity for parties intending to invest in building property, while the beauty of the situation, adjoining the ornamental grounds of the corporation, offers peculiar attractions to gentlemen who may like to build residences for themselves.—The plans may be viewed, and particulars obtained, by application to the Secretary, at the Office of the Corporation, 32, Ludgate-hill; the Architects, Messrs. WHINNEY and ASHDOWN, 42, Charing-cross; or to Messrs. TERRELL and CHAMBERLAIN, Solicitors, 30, Basinghall-street.

JOSEPH SOUL, Secretary.

April 29th, 1853.

TOLLINGTON PARK.—BUILDING LAND TO BE LET on LEASE, direct from the Freeholder.—Term 99 years.—The situation is the best in the park, road and sewer completed, and within three minutes' walk of the new church.—For price and particulars, apply at Mr. G. A. YOUNG'S Office, 34, Eagle-street, Red Lion-square.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money advanced, and bricks may be had delivered on the site of the intended building, at 30s. per thousand.—For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

WANTED, a Person to join a Builder (who has 1,000l. to spare), to BUILD some FIRST-CLASS HOUSES, in a good and improving neighbourhood, all freehold.—Apply to G. H. No. 4, Union-road, Rotherhithe.

PELICAN PERMANENT BUILDING SOCIETY.—OFFICES, 25, CLEMENT'S-LANE, enrolled under 6 and 7 Wm. 4, c. 32. Shares 50l., 25l., and 5l. each.

BANKERS.—Messrs. Willis, Percival, and Co., Lombard-street.

CONSULTING ACTUARY.—Arthur Scratchley, Esq. M.A.

SOLICITORS. Messrs. Jenkinson, Sweeting, and Jenkinson, 29, Lombard-street.

BORROWERS will find this Society possesses many advantages, the Tables having been carefully prepared by the Actuary, and each borrower can select his own time for repayment. For further information, Prospectuses, and Shares, apply to the Solicitors, or to Mr RAYMOND, Secretary, 25, Clement's-lane, City.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Southand-yard, Westminster.—Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1852, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORT- LAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery patented by Mr A. Aspdin, much improved the quality of this cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Portland Cement, may be had at their office, New Wharf, Westminster, London; at their works, Gateshead on Tyne, or from their agent, Mr. HENRY ROBINSON, 31, King street, Liverpool.

PORTLAND CEMENT.—6, South Wharf, Paddington. CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, as also at his Wharfs in London, 6, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

GEO. & THOS. EARLE, CEMENT MANU- FACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Sands, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.

Agent for Southampton, R. L. FLUDER, American Wharf.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf, Paddington.

WILLIAM SHALDERS, Jun. HYDRAULIC ENGINEER, BANK-PLACE, NORWICH,

PATENT FOUNTAIN PUMP, ENGINE, HYDRAULIC, AND LEATHER WORKS.

SHALDERS', NORWICH,

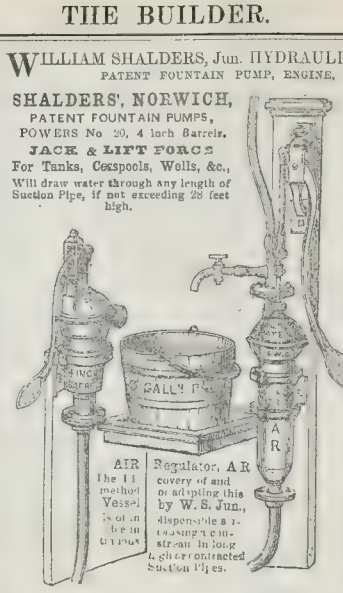
PATENT FOUNTAIN PUMPS,

POWERS No. 20, 4 inch Barrels.

JACK & LIFT FORCE

For Tanks, Cesspools, Wells, &c.,

Will draw water through any length of Suction Pipe, if not exceeding 28 feet high.



-16th SCALE.

Descriptive Sizes, Powers, Number of the working Cone Barrels, Inches	21	20	18	14
Sizes	3ft	4	5	7
Prices Net	30s.	35s.	50s.	110s.
" Engine or Lift Forcers on Plunks	60s.	70s.	110s.	200s.
" If with Air Regulator, extra	5s.	8s.	8s.	10s.
" Connector & Valve Leathers, per set	1s. 3d.	2s. 3d.	3s. 0d.	4s. 6d.
" Lead or Gutta Percha Suction and Rising Main Pipes and Planch Joints from per foot	1s.	1s. 4d.	2s. 2d	3s.
Di charge at regular work, per min. gallons	6	9	16	24

Copper Rivetted Leather Hose Pipes and Machinery Bands. Spiral Rivetted Suction Hose Pipes. Rounded Leather Lathe, Sash, &c. Pulley Bands, any length without joint. Copper Pump Bucket Leathers Frankfuttle, &c. Metal, Wood, Gutta Percha, &c. Pipes. Cocks, Joints, Valves, Retaining Valves, in easily accessible screw Boxes. Swivel Nut Brass Screw Couplings, Jet-pipes, Jets, and other Hydraulic, &c. Fittings.

Copy of a large Banner, at the late Great Exhibition, Class 5, No. 402, where W. S. Jun. had twenty-five varieties and sizes of Patent Fountain Pumps and Engines, and other important Hydraulic, &c. Fittings, with honourable mention.—See Jurors' Reports, page 179.

SHALDERS' PATENT NORWICH PUMPS work without leakage or friction, and do not choke. Twenty-six years' practical experience proves these *plus ultra* hydraulic machines, in their average result, to be cent. per cent. the most effective and durable, the best and cleanest of any in the world; they are made to discharge from half a pint to a ton weight of water at a single stroke, and are readily applied to any motive power to draw or force water, air, or any other rapidly influous fluids, in any quantity or to any height or distance, for any purpose, by W. S. SHALDERS, Jun. Joint Inventor, Practical Designer, Manufacturer, and Sole Proprietor.

The compact, light, and strongly-formed hydraulicons shown in the engraving (the common size) being universally applicable, superseding all kinds of friction pumps or other makeshift methods of raising or forcing water, and also serving as easily examined models to disseminate a general knowledge of this newly discovered principle of hydraulic and pneumatic action for more important purposes, W. S. Jun. has taken great pains to construct them scientifically, well, and with true economy. They are made in cast-iron, having brass-lined barrels, and are fitted with brass &c. Hydraulic working parts, the jacks are kept in stock having spout in front, with handle to work with right or left hand, or with spout opposite handle as shown. Powers No. 20 and 18, prices 40s. and 65s. are also made for garden, &c. use, screwed upon cast-iron air regulator, pedestals, with flanch joints beneath to attach to vertical or diagonal suction-pipes. These are usually fitted with turn-up handles to work to and fro over the spout like a fountain, or other counter, beer, &c. engine; different modifications of both kinds may be had to order. For lifts up to 13 feet both the jacks and lift forcers will double the discharge stated, and for very low lifts through extra length pipes as from a full tank, flooded cellar, or gold pit, the discharge from their having such ample water-ways, can by an impulsive action be more than trebly augmented. The attention of Insurance Companies will be especially repaid in these powers, as the use of hose is ineffectual. W. S. having received several orders for his improved fittings, which in each place have given great satisfaction; Penzance may be instanced as a town which has lately introduced the fittings at an economic outlay (see *Cornish Telegraph*, Feb. 3, 1853). These are the right pumps for the diggings and general export or home supply, as proved by oft repeated orders from the same parties.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. have much pleasure in announcing important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every known cover for all kinds of Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a NEUTRAL Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, is found above all other materials of its kind; it has no caustic qualities, may be painted or papered in a few days; never blisters, cracks, or scales; soon becomes as hard as stone, and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the sole agents, PHILLIP HAND and CO. at the Warehouse, 29, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS.—Their NINETEENTH ANNUAL EXHIBITION is NOW OPEN, at the Gallery, 53, Pall-mall. Admission 1s. JAMES FAHEY, Secretary.

MR. ALBERT SMITH'S MONT BLANC every evening at eight o'clock, except Saturday. Stalls, 3s. (which can be secured at the box-office every day from 11 till 4), area, 2s.; gallery, 1s. A Morning Performance every Tuesday and Saturday, at 3 o'clock. A View of the celebrated MER DE GLACE, from Montanvert, has been added to the illustrations.—Egyptian Hall, Piccadilly.

OPENING of the PHOTOGRAPHIC SCHOOL, ROYAL POLYTECHNIC INSTITUTION. The spacious plate-glass house, 30 feet by 15, with the class rooms and ladies' apartment, being completed, the Session Private Lessons, embracing all branches of Photography, are now forming. A perfect Apparatus with Recently-fitted Lenses has been procured, and every new improvement will be added. The School is under the joint direction of A. Malone, esq. who has been long connected with Photography, and J. H. Pepper, esq. the Chemist to the Institution. A Prospectus, with terms, may be had at the Institution.

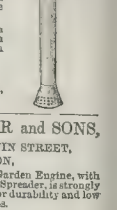
COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT, every evening from Seven till Ten; Music from Two till Five, and during the evening.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE.—This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755, is exhibited for a short time in all its original splendour, and by the aid of new machinery, with increased startling effects. Daily at Three; Evening at Eight o'clock.—Admission One Shilling. Children and School-half price to either Exhibition.

GALLERY of GERMAN PAINTINGS.—FIRST ANNUAL EXHIBITION of MODERN WORKS. The following celebrated Masters have contributed to the above Collection: Lessing, Sohn, Achenbach, Hildebrandt, Leu, Schirmer, Weber, Hildebrand, Gude, Ritter, Durner, Mucke, &c. &c. OPENS to the public on MONDAY next, the 2nd of MAY. Admission, 1s.; Season Tickets, 7s. each. All communications to be addressed to the Secretary, at the Gallery, 168, New Bond-street.

PORTABLE STEAM-ENGINES.—TO CONTRACTORS.—Strong and Powerful Portable STEAM ENGINES, for pumping, sawing, and contractors' work generally TO BE LET on hire, or for SALE. These engines have iron chimneys, ready for immediate work; several have been employed for years by contractors, and are considered fully efficient.—Apply to Messrs. MEDWIN and HALL, 92, Blackfriars-road. Several may be seen at work.

FOWLER'S IMPROVED WROUGHT PUMPS for CONTRACTORS, BRICKMAKERS, EXCAVATORS, and OTHERS.



The attention of this house for more than fifty years past having been almost exclusively paid to the manufacture of every description of pump-work for every variety of purpose, attention is respectfully requested to their very light Wrought Pumps, with plain or sliding telescope suction, galvanized and ungalvanized. A large stock of all sizes is kept ready to finish off to order according to length required, at the shortest notice.

This description of Pump-work varying in almost every case, it is impossible to quote a general price, but the fullest particulars will be given on application.

A large stock of Wrought Pumps, from 3-inch single to double 15-inch barrel, is also kept on hire prepared for hand or steam power, on reasonable terms, at

BENJAMIN FOWLER'S

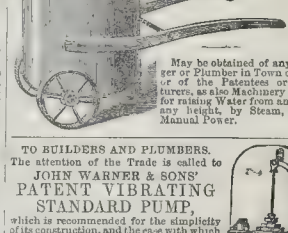
ENGINE-PUMP MANUFACTORY,

Whitefriars-street, Fleet-street, London.

JOHN WARNER and SONS,

CRESCENT, JEWIN STREET, LONDON,

Galvanized Iron Tub Garden Engine, with Warner's Registered Sprender, is strongly recommended for durability and low Price, viz. 34s.



May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees or Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

TO BUILDERS AND PLUMBERS.

The attention of the Trade is called to

JOHN WARNER & SONS'

PATENT VIBRATING STANDARD PUMP,



which is recommended for the simplicity of its construction, and the ease with which it works.

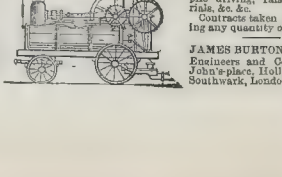
By the introduction of the vibrating standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.

JOHN WARNER & SONS,

8, Crescent, Jewin-street, London, Manufacturers and Patentees.

STEAM PUMPING ENGINES.— PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS, Engineers and Contractors, John's-place, Holland-street, Southwark, London.

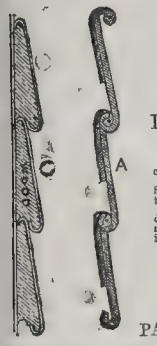
PATENT DATED 9TH DAY OF OCTOBER, 1852.

CLARK & CO.'s

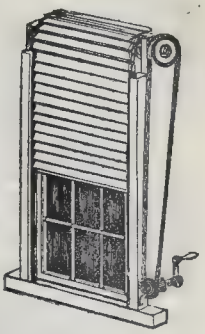
NEW PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS,

AND

IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.



The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section.
A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected together, and can be ROLLED EITHER WAY, greatly facilitating their application.
C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the laths to split, and combining the lightness of wood shutters with the durability and appearance of iron.
CLARK and CO. have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwelling-houses, thereby saving a large item in their cost (the fixing), and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the whole can be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.



IMPROVED DRAWN BRASS SASH-BARS AND STALL-BOARD PLATES.

ENGRAVING IN THE FIRST STYLE OF WORKMANSHIP.

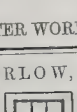
PROSPECTUSES, ENGRAVINGS, AND TESTIMONIALS FORWARDED, ON APPLICATION TO

CLARK & CO. ENGINEERS,

PATENT SHUTTER WORKS, 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

CHARLES WM. WATERLOW,





Manufacturer of Sashes and Frames, and Joinerto the Trade,
121, Bunhill-row, Finsbury-square.
Well seasoned materials, superior workmanship, lowest prices.
Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.
Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.
N.B. This establishment is worth the notice of all engaged in building.

REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 98, Regent street, and at his Steam works, 145, Old-street. These shutters have fully borne out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to noblemen whose mansions are fitted therewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

TO SASH AND DOOR MAKERS.

PARTNERSHIP.—The Advertiser is desirous of negotiating a PARTNERSHIP with a well-established house in the above trade which is confined to a ready-money business only, and is willing to advance the requisite amount of capital. As this is a bonâ fide advertisement, it is requested that none will reply to it whose affairs will not bear the strictest investigation.—Address, with full and explicit particulars, to A. W. Office of "The Builder," 1, York street, Covent-garden, London.

FISHER and MILLS (late Shop Foremen to Messrs Lawrence and Sons, JOINERS to the TRADE, 71, York-road, Lambeth. Shop fronts, fittings, staircases, &c. Well-seasoned materials, and superior workmanship at the lowest possible prices. A quantity of doors and sashes always in stock. By inclosing a postage-stamp, a full list of prices will be returned.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 1, Queen street, Cheapside, London, invite inspection to their PRICED ASSORTMENT OF WINDOW BLINDS, which they can the following PRICES, and which are opened and closed in a square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

recommend as being made in the best manner. Venetian Blinds per square foot, 9d.; bees holland blinds, on rollers, 6d.; best ditto, on spring rollers, 8d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c.

ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridge, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure; and it is requested that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 123 (having been at first No. 111).

PAN TILES, 52s.; Plain, 35s. per 1,000; superior White and Red Facing Bricks.—Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gas and other shaped Goods, Window and Nonsuch Oven Tiles and Bricks, Dutch and English Clinkers, Patent Malt-kiln, and Corn-drying finely perforated Tiles, 9 in and 9 in. Paving ditto, unequalled in quality and colour, at WARD'S old-established Honduras Wharf, Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, and to judge for themselves.
Malm Place, half-washed Stocks, and Place Bricks, also on sale These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing.
Apply to HENRY DODD and CO at the Countine-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.
N.B. Light coloured pit sand of approved quality constantly on sale upon reasonable terms. This sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded Bricks to any pattern.
COWLEY, KENT, and ESSEX BRICKS; also Yellow and Pale Malm Seconds, Cutters, Paviors, Shippers, &c &c.
KENTISH RAG STONE of the finest quality, and of th blue tinge so much approved by architects, can now be supplied at a FURTHER and CONSIDERABLE REDUCTION in PRICE.
Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington Butts.

BRICKS.—20,000 Red Kiln-burnt Suffolk Facing BRICKS TO BE SOLD, for 32s. per thousand, now standing at Mr. Redman's, Windsor Wharf, Bankside.—Apply to T. HOLDER, 11, Stockbridge terrace, Pimlico.

BUNNETT AND CO. ENGINEERS AND FOUNDERS,

26, LOMBARD-STREET, LONDON, AND DEPTFORD, KENT,

ORIGINAL PATENTEES OF REVOLVING IRON AND WOOD SHUTTERS

AND OF THE

NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER,

For which the PRIZE MEDAL of the GREAT EXHIBITION of 1851 was awarded.

BUNNETT and CO. are also the ORIGINAL PATENTEES and MANUFACTURERS of

DRAWN METAL SASH-BARS, FOR SHOP FRONTS, SKYLIGHTS, &c.

MOULDED BRASS STALL PLATES, INTERNAL AND EXTERNAL BRASS FITTINGS,
And Cast, Drawn, or stamped Metal Work of every description.

BUNNETT and Co. invite comparison, and challenge competition, either in Style, Quality, or Price.

OLD PLAIN TILES WANTED.—Persons having any to dispose of are requested to send the particulars as to price, quantity, &c. to Mr. JAMES HILL, Builder, Barnet.

BRICKS, delivered in London, at the Eastern Counties Railway.—Best Hard Building Stocks, 30s to 40s.; Very Superior Hard Place, 28s to 38s. To be seen near the Romford station, in a field on the east, adjoining the railway, opposite the fir try, Squirrel's-heath. Address, T. ROSE, Post-office, Squirrel's-heath, near Romford, Essex.

SUPERIOR BRICK EARTH and BUILDING LAND TO LET, within ten minutes' walk of the Southall Station and the canal.—Inquire of Mr. ARTHUR ASHPITEL, 5, Crown-court, Old Broad-street.

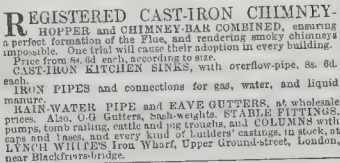
BRICK RUBBISH.—About 200 yards of hard BRICK RUBBISH for SALE; also some Bricks and Bats, good binding Garden and Rough Gravel, Screenings, &c. at moderate prices, lying upon Albany-wharf, Regent's Park basin.—Apply to Mr RICHARD OWEN, on the premises.

400,000 BRICKS to be SOLD at GRAYS, ESSEX, consisting of Seconds, Pavors, Stocks, Place, Grizels, and Shrifts.—Apply to Mr. TALBOT. A personal application in the field would be preferred.

BRICKS.—A quantity of good sound STOCK BRICKS, to be delivered anywhere upon the Eastern Counties Railway, TO BE SOLD cheap, for cash.—Apply by letter, F. R. S. Castle and Falcon Hotel, St. Martin's-le Grand, London.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Blue Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

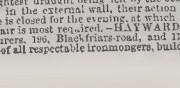
IMPORTANT TO BUILDERS.



REGISTERED CAST-IRON CHIMNEY-HOPPER and CHIMNEY-BAR COMBINED, ensuring a perfect formation of the Flue, and rendering smoky chimneys impossible. One trial will cause their adoption in every building.
Price from 8s. 6d each, according to size.
CAST-IRON KITCHEN SINKS, with overflow-pipe, 8s. 6d. each.
IRON PIPES and connections for gas, water, and liquid manure.
RAIN-WATER PIPE and EAVE GUTTERS, at wholesale prices. Also, O.G Gutters, sash-weights. STABLE FITTINGS, pumps, tomb railing, cattle and pig troughs, and COLUMNS with caps and bases, and every kind of builders' castings, in stock, at LYNCH WHITE'S Iron Wharf, Upper Ground-street, London, near Blackfriars-bridge.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the

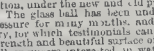


admission of pure air through an

EXTERNAL WALL.

With single pulley, from 6s. each; with leading pulley, from 8s. 6d.
These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants, and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 127, Union-street, Borough; and of all respectable ironmongers, builders, &c.

TO LOCAL BOARDS OF HEALTH, ENGINEERS, AND SURVEYORS OF WATERWORKS.

By Royal  Letters Patent.

GRAY'S IMPROVED GALVANISED STEEL or GLASS BALL VALVE FIRE COCKS or HYDRANTS.

T. W. GRAY begs to inform engineers of waterworks and others, that he has recently taken out a patent for a new description of Hydrant or Fire-cock, with Glass or Steel Balls, combined with India-rubber seatings, and with powerful double screw bottom stand pipes, both of which he will warrant to stand any amount of water pressure.
The superiority of the new Patent Hydrant over all others consists in a cheap valve without bruising, marking, or sticking to which all other ball valves are liable, and it offers advantages not hitherto obtained. Boards of health, water companies, and the public have the option, under the new and old patent, of using a steel or glass ball. The glass ball has been under the pumping main of 400 feet pressure for many months, and the reports are perfectly satisfactory, for which testimonials can be given for its durability. The strength and beautiful surface of these balls calls the attention of all engineers interested in water supply. The new patent also claims the cock and box combined, which considerably decreases the expense.
Drawings and particulars may be obtained, or sent free by post, and Fire-cocks or Hydrants supplied in any quantity, on application to T. W. GRAY, at his Office, 70, Basing William-street, City, London; or at the Works, 1, Margaret-street, Limehouse.

TO WATER COMPANIES AND PLUMBERS.

HIGH-PRESSURE COCKS & CLOSETS.



The Health of Towns Commissioners having recommended the adoption of the high-pressure principle in all towns, WARNER'S HIGH-PRESSURE COCK is recommended as a Cock free from leakage, and applicable for all purposes and situations. Patent Closets and Basins with supply-valve for attaching direct to main pipes without a cistern, cocks, or wire.
LEAD, IRON, and TIN PIPE.
JOHN WARNER and SONS, Manufacturers, 8, Crescent, Jewin-street, London.

MICHAEL NEVILLE, Engineer and Brassfounder, Liverpool.—Manufacturer of sluice valves, fire and high pressure cocks, &c for water-works.

TO WATER COMPANIES, BATHS AND WASHHOUSES, BREWERS, DYERS, PALE-ALE BREWERS, &c.

MESSRS. ASHPITEL and WHICHCORD'S PATENT VALVE, adapted for high-pressure or inequality of temperature. The greater the pressure the more perfect the valve.—Manufactured and sold by THOMAS POTTER, 44, South-Molton-street, London.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 58, Pall-mall, London.

TO DRAUGHTSMEN AND CIVIL ENGINEERS.

H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.

These Pencils are prepared in various degrees of hardness and shades.

H H H H for drawing on wood.	F F light and shading.
H H H for architectural use.	F for general use.
H H for engineering.	B black for shading.
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
M medium.	B B B B ditto ditto.

Sold by all the principal Stationers in town or country.

AWARDED a PRIZE MEDAL under CLASS XIX.—TO THE CARPET TRADE.—ROYAL VICTORIA FELT CARPETING.—The Patent Woollen Cloth Company beg to inform the Trade that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any they have hitherto produced, both in style and variety. The public can be supplied at all respectable Carpet-houses in London and the country. The Company deem it necessary to caution the public against parties who are selling an inferior description of goods as Felted Carpets, which will not bear comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.

The Company's Manufactories are at Elmwood Mills, Leeds; and Borough-road, London. Wholesale Warehouses at 8, LOVE-LANE, WOOD-STREET, CHEAPSIDE.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, 21, Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compositions that might be sold under the name of Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfection of grinding, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realised by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark—In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. T. B. MORLEY and CO.; and by the Company's Grinding Agents. In London, Messrs. CHEVALLIER, DEVAS and CO., Wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 8, Tottenham-court, New-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO, Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 28, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 13, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. THE PERMANENT WHITE of the Ancients, by its costliness hitherto confined to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, two hundred weight of this Paint, with seven gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheapest in the first instance, as well as desirable on every other consideration. To a contractor for extensive works taken at competition prices this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.

For painting both the interior and exterior of buildings, and for deformental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.

A circular with particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Docks).

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (for theoretic) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is so far from the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses, is remarkable and unrivalled superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Painting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.	
LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames street
	Mr. Richd Cooke, 7, Sise-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Douglas
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.

HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom,
Now supply this innoxious substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).

In 14 lb. Kegs, and upwards, from the Depôts of their respective Agents:—

LONDON { Mr. T. BROUGH, South John-street.
{ R. SUMNER and CO. Lord-street.
IPSWICH. RIDLEY and GRIMWADE.
DUBLIN P. REILLY and SONS, 15, Cope-street, Dublin.

ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent men, of its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 19, Lombard-street, London.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, destroying all greenish vegetation May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 12s. and 24s. each.

DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 100 square feet for 10s.; and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price; only 2s. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage. 28s. per cwt. or 3s. per stone.

G. BELL and CO. Steam Mills, 2, Wellington street, Goswell-street, London.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.

The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Anues, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones. York-shire Paving, Granite, Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Orders sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Boroughmarket. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester. Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

DEPOTS:

Great Western Railway Station	PADDINGTON.
Great Western Railway Station	BRISTOL
Hope-street, Mount-pleasant	LIVERPOOL
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone, also Bangor Slates. Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. to Order on the shortest notice. Terra-cotta let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD PLUSTER respectfully informs Builders, Masons, and Others, that he continues to supply the Bowdell Ground Stone, Corshamdown, Coombedown, and Farleigdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

BOX WEATHER STONE, of best quality, SCALLETT BLOCK, &c. &c. supplied direct from the Quarries by ROBERT STRONG, Quarry Proprietor and Stone Merchant, Box, Wilts. From the great durability of the Box Ground Stone, withstanding the most intense frost, renders it a desirable stone for all external building purposes. Orders to any extent immediately attended to. Depôt, Box Station, Great Western Railway, where an extensive stock is always kept. Every description of Stone Work, both plain and ornamental, prepared ready for fixing. Ashlar, Rangework, Walling Stones, &c. &c. always on sale. Vases in elegant variety, URNS, FOUNTAINS, CHIMNEY PIECES, &c. &c.—Box, Wilts, March 10, 1853.

CHEAP STONE.—PAVING, SINKS, STEPS, SILLS, &c. E and W. STURGE respectfully solicit the attention of Builders and the trade generally to their YORKSHIRE TOOLED PAVING, rubbed and selfaced ditto, sinks, sills, steps, and coping, all at very low prices for cash. A list sent free on application.

E. and W. S. have to announce that the great demand for stone and high rate of freight has caused a general advance, but that they have only made such advance in their prices to a small extent. Cartage is charged to the various railways and wharfs in London at a small rate per ton.

BRIDGE WHARF, CITY-ROAD, LONDON.

BRENT MOOR GRANITE QUARRIES, SOUTH DEVON.—W. TUCKWELL begs to inform Architects, Engineers, and Contractors, that he is prepared to SUPPLY any quantity of GRANITE from the above quarries.—Apply to W. TUCKWELL, at the Depôt, Torquay-Sufferance-wharf, Greenwich, where a stock for immediate use is always available.

Offices in London, No. 3, St. Martin's-place, Trafalgar-square.

TO CONTRACTORS, BUILDERS, AND OTHERS.

CHESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries in Cornwall of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Pinnerscourt, Old Broad-street, London, Agent; or to Mr. J. J. THATHAN, Manager of the Works, Liskeard, Cornwall.

Notice of the column exhibited from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue."

By Professor ANSTED.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension, the magnitude of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

TO STONE MERCHANTS, CONTRACTORS, AND BUILDERS.

WOODLESFORD and OULTON QUARRIES, near LEEDS, YORKSHIRE.—A favourable opportunity now presents itself to Stone Merchants, &c. the getting of stone in a portion of the above quarries being now to let. The said quarries having been extensively worked for nearly a century, and many of the public buildings and mansions in the neighbourhood having been built with the stone, and are most conveniently situated within a quarter of a mile from the Midland Railway Station, at Woodlesford, where a new powerful crane is erected, and also within the same distance from the Aire and Calder Canal. For further particulars apply to JOHN DOBSON, Esq. (the owner), Solicitor, Leeds.

TO BUILDERS, CONTRACTORS, AND STONE-MERCHANTS.

TROTTER, THOMAS, and CO. Coleford, Gloucestershire, invite attention to the following prices and particulars of their best FOREST of DEAN STONE, delivered at Lydbrook-basin, or in Lydbrook on the South Wales Railway, at Lydney Station. The superior quality of this stone is well known in all the adjoining counties. The opening of the South Wales Railway now affords an opportunity of introducing it to more distant markets; and wherever it may be known it cannot fail to secure an extended patronage. Rough paving, 22s. per 100 feet super; faced paving, 31s. ditto; plinths, bordering, flat stones, curbstones, string courses, and landings, from 2s. 3d. to 10s. super foot; Guttering from 10 to 13 inches wide, by 5 to 7 inches thick, to order, from 9d. to 1s. per foot super; piers from 13 inches to 15 inches wide, by 9 to 9 inches thick, from 2s. 3d. to 2s. 6d. cube foot; extra lengths, to order, 1s. 9d. per cube foot. Pump-troughs, dish-troughs, cattle-troughs, pig-troughs, under two gallons, 6½d. per gallon; above that size, 4½d. per gallon. Grindstones, 21s. per ton quarry measure. Blocks, columns, rolls, cider-mills, ledgers for tombs, from 1s. 3d. to 2s. per cube foot.

THE PIMLICO SLATE-WORKS, Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very fine dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Byewash Stone-Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRADYS, Belvedere-road, where terms may be obtained.

SLATE MANUFACTURE, by STEAM MACHINERY, at BRINDLEY'S OLD ESTABLISHMENT.—Always on hand, a large assortment of useful size SLABS, of various qualities, and an extensive stock of ROOFING SLATES. Price lists may be had upon application, or sent by post.—Works and Wharf, Bermondsey-wall, Deckhead.

ARTIFICIAL STONE CHIMNEY-PIECES. Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, delivered on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

By her Majesty's Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE. It having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no limitation to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrades, Vases, Corniges, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.

Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.

Specimens may be seen and further particulars obtained at the offices

8, John-street, Adelphi. EDWARD MENDHAM, Sec.

The Builder.

SATURDAY, MAY 7, 1853.

THE sun was out brilliantly on May Monday, and with some pleasant companions, doubling delight by sympathy, we left books and business and rushed off to Oxford, to get change of scene and revive recollections of one of the most interesting places in the world. We mention it, that we may repeat our annual recommendation to our younger readers to use their holiday hours in seeing what they can, and filling their sketch-books with records of those beautiful forms and marvellous combinations which our mediæval progenitors have scattered so bountifully over the country. Such holidays are not waste of time: they serve to strengthen both mind and body, to supply materials for thought and skill to work upon, and they foster within us the poetic feeling which the materialism of the day tends to stifle. This feeling is part of our nature, and was given us to elevate and refine. It must be cultivated, not crushed; and the harvest will repay the care. Why is Creation full of beauty, if not to excite delight? why have the flowers colours, and the birds songs, if not for our enjoyment, and to stimulate reflection?

"God is paid when man receives:
To enjoy is to obey."

We do not mind being blamed by a few for an occasional departure from the prosaic: our pages have a wider and a higher purpose than the merely practical; and those of even our strictly professional and commercial readers who content themselves with that, and do not cultivate the poetic feeling, will never stand high in their own class:—

"Better for man,
Were he and Nature more familiar friends!
His part is worst that touches this base world."*

Well, then, we say, go out when opportunity occurs: and no better place will you find for one of your excursions than Oxford, where whatever you see recalls "some reverend history." This is a place where Memory revels,—Memory,—who steals "fire from the fountains of the past to glorify the present," and through whom

"We may hold converse with all forms
Of the many-sided mind,
And those whom passion hath not blinded,
Subtle thoughted, myriad minded."

Apart from the interest of the monuments themselves, every building and garden is associated with the recollection of men who have become names for ever. Can we be ever sufficiently grateful, by the way, for the powers of association which have been given to us,—powers which will transform a stone into a history, and make a flower the awakener of a thousand feelings. "*Hilf Himmel*," as Jean Paul Richter or one of his imitators says, "how, in gazing on this withered bunch of flowers, is the heart moved within me! as on hearing again the merrily-sounding cattle-bells of my youth, a voice comes to me, surging from the far-distant alps of childhood! It is not a bunch of flowers alone I hold in my hand, but a whole infinity, a vast loud-echoing sea of thought, immeasurable and tender—not roses and pinks and jessamines only, but a beauteous panorama of fairest memories."

From the spot where the railway from London now brings the stranger into Oxford, he has not so good a first impression of the city as when the approach was by the bridge at the foot of Magdalene Tower with its gardens and meadows,—

"A league of grass, washed by a slow broad stream,
That, stirr'd with languid pulses of the oar,
Waves all its lazy lilies, and creeps on,
Barge laden, to three arches of a bridge
Crown'd with the minster towers."

* Alexander Smith,—a true poet, though a modern man.

A beautiful tower is that of Magdalene, commenced in 1492 and finished 1505. On the previous morning, May-day, at five o'clock, a hymn had been chanted on the top of it, according to annual custom. Pugin's gateway, the open-air stone pulpit opposite, and a charmingly picturesque piece of the ancient Magdalene Hall, in the garden adjoining, will all be noticed. The chapel and antechapel are very good specimens of Perpendicular work: they want better glass in the windows. Adjoining are the new Schools, by Mr. Buckler, which are well arranged. Queen's College, close by, with its cupola-covered statue, has been restored with a stone which will speedily decay again. The majority of the buildings in Oxford are in a frightful state of decomposition, the oldest not the worst; and, unfortunately, it seems difficult now to obtain a stone which will serve our posterity better. The tower of the University Church, St. Mary's, a little further on, with its crowd of pinnacles at the top and lofty spire, has been restored. Behind it you see Gibbs's Radcliffe Library,—the Pisan baptistery, translated into another language,—where a bust commemorates the architect. The Bodleian Library, with its unrivalled missals, and the picture-gallery, with a series of architectural models, is close at hand.

For variety and picturesque effect the High-street of Oxford is unrivalled. Indeed, there is scarcely a street in Oxford which would not make a picture; the gateway towers of the colleges,

"With bay windows, goodly as may be thought,"

forming the striking features.

The Treasury at Merton College is remarkably interesting as an example of a stone-roofed fire-proof room of the fourteenth century. There are few buildings so early in Oxford, the greater number of the colleges belonging to the fifteenth and sixteenth centuries, when the end of the good time was coming.

The buildings of New College look older in style than they really are. We owe them to William of Wykeham (in the years between 1380 and 1386), upon whom Edward III. heaped honours, chiefly in acknowledgment of the skill he showed in rebuilding Windsor Castle. The kitchen here is in its original state, with its timber roof. It may go along with the

"Kychenes for an high kynge,"

mentioned in "Piers the Plowman's Crede." You remember, perhaps, the Abbot's Kitchen at Durham, one of the finest remaining of the fourteenth century, and that at Glastonbury, which is a little later. A useful hint for modern kitchens, by-the-by, may be had from the lantern there.

At New College and at many others they have, as Chaucer says,—

"A gardin walled al with ston,"

where "rustication" of a different kind from that which punishes some faults at the University may be enjoyed.

Students of architectural history will, of course, see the crypt of St. Peter's in the East, long called Saxon, and the chancel of the church above it. The cathedral will afford some specimens of Norman work in the clere-story and elsewhere, and when you are there you can run into the spacious Tom "quad" of Christ Church, and see the fine hall with its open roof and noble staircase. The fan-groining and single central column are particularly striking. In the hall is a collection of portraits of most interesting character, which includes specimens of the art of nearly all our portrait-painters.

Of Brasenose, with its beautiful gateway tower; the school, with its well-known gateway of the Five Orders; the Theatre, designed by Sir Christopher Wren; the Ashmolean Museum and its strange contents; or the Taylor and Randolph Buildings, containing the unrivalled collection of drawings by Michelangelo and Raffaelle, we need not speak. We are not writing a guide-book to Oxford:* it is all so well known to the majority of our readers as to render even these brief allusions dangerous: we would simply say enough to lead those who do *not* know it, to note it for an early visit. Nearly opposite the Taylor Buildings, Mr. Salvin is making some additions to Baliol College,—additions, which have an ugly twist in them, and do not at present offer any special features for admiration. There are loud rumours of proposed galleries and museums of science and art, and Mr. Lewis Cubitt is spoken of as the architect who will be engaged to add this fresh attraction to Oxford.

In the evening, Town and Gown were hastening to the river to see the University boat-races, an institution of no small value; and boat after boat, full of skill and sinew, from the different colleges, pulled past us to take their places in a healthful arena, where "gold tassels" have no weight, and the less favoured in one respect find themselves more so in another. But time and the train were come, and so, "lifted above the ground with cheerful thoughts," and with some pleasant recollections which the place will always recall, we left them to their struggle, and have nothing further to say, beyond expressing a hope, that amidst the coming changes in the University, means may be found to open wider its doors, and extend the advantages of good learning to many who are at present debarred from them by fortune.

THE ROYAL ACADEMY EXHIBITION.

THE expectation and excitement that have ever awaited the opening of the Royal Academy have increased considerably, judging from the densely crowded rooms, and the real interest exhibited by the picture-loving part of the community,—who risked all the inconveniences of a "first day," on Monday last, rather than not be amongst the earliest of the dazzled and delighted. We had viewed the collection more quietly on the previous Friday.

It is amusing to listen to the various expressions of opinion, and very astonishing to find how much more generally and how much more ably discussed an artistic topic is now-a-days than would have been the case ten years ago. Painters do not seem to live "within themselves" as they used; they no longer revel in the arcana of solitary attics, to growl at the apathy of the unsympathising crowd,—no longer despise social position, or go unshaven in mourning linen,—eccentric and unclean. Fine art is becoming an essential, and pictures much safer investments than some railway shares. It is now a difficulty to find a good work unsold. Let those who cavil at the occasional mediocrity of an "Art-Union" exhibition consider this, and remember to what extent those very societies have effected the change.

The present collection comprises more meritorious works than usual,—and a very fair proportion of the most striking bear names to which the mystical R.A. is not appended: still in many cases the members assert their pre-eminence, and oblige acknowledgment. Sir Edwin Landseer never produced anything finer than (69) "Morning," the result of a combat between two stags represented in (46) "Night." Anything more poetical than the two dead heroes, with their antlers intertwined, it would be hard to conceive. The painting is the perfection of his style, manipulated with marvellous dexterity. The "Night," howbeit extremely beautiful, hardly equals it: yet the effect of moonlight, and the power with which the heads are painted, could scarcely be surpassed.

A sketch, entitled (170) "Children of the Mist," and (291) "Twins," of undeniable excellence, represent the artist in greater force than usual.

(57) "H.M.S. *The Victory* (with the body of Nelson on board), towed into Gibraltar," is one of Mr. Stanfield's most successful marine pic-

* Mr. Parker's nicely illustrated "Hand-book for Visitors to Oxford" makes this unnecessary.

tures, acquiring extra value from its historical interest. In delineating the several objects of which this picture is composed Mr. Stanfield stands unrivalled, and if exception is to be made to the treatment of the subject, it arises from an impression that the solemnity and supposable grandeur of such a scene have been sacrificed somewhat to execution.

(325) "An Affray with Contrabandistas, in the Pyrenees," by the same artist, though somewhat scenic and forced in effect, is a fine landscape.

Mr. T. Webster, R.A. has produced another "Dame's School," (116), competing with the Vernon picture in vitality of expression and delicacy of painting, a charming picture, thoroughly English, and in a style as proverbially his own as Ostade's or Teniers'!

(124) "Ruth sleeping at the Feet of Boaz," Sir C. L. Eastlake, P.R.A. is not one of the accomplished president's happiest productions; nor does (186) "Violante," afford a fair specimen of his earlier excellence.

Had (140) "The meeting of Jacob and Rachel" been Mr. Dyce's first rendering of the subject, we should have admired it much, but with its exquisite predecessor strong in our recollection, with all its beautiful colour and drawing, it seems to have been studied from more common-place models than the former. Rachel strikes us as being short, and the background weak. A very fine study (145) "Head of a Scribe," by Mr. Herbert, R.A. leads us to regret the absence of a more important contribution: as it is, he sends one of the gems of the collection.

(147) "Othello relating his Adventures," assumes a freshness of interest from Mr. Cope, R.A. making it his leading picture. We like the conception of Brabantio better than that of the hero and heroine. The Moor's head is first-rate; but a certain awkwardness about his hands and general heaviness of limb retard unqualified praise. We like (30) "The Mother's Kiss" less than (80) "Mother and Child." (479) "The Page," is a pleasing fancy subject.

(182) "The Forest Portal," R. Redgrave, R.A. is one of those delightful transcripts which prove the right vocation of Mr. Redgrave is landscape painting. Elaborated without being hard, you can almost see each leaf of each individual bough, if you look for it. The *drawing* should afford a lesson to students, for one begins to tire of the old recipe-tree with which we are so profusely favoured in all exhibitions. (340) "The Lost Path," is another admirable study of foliage, by the same, but it would be still more admirable without the figures.

(155) "A Wild Sea-shore," F. Danby, A. influenced by a glowing sunset, is what we know and like so well. One cannot tire of these; nevertheless novelty is desirable sometimes. (67) "The Prophet Daniel," by Mr. J. P. Knight, R.A. is a finely-painted head, but a misnomer. (201) "Maternal Affection," H. W. Pickersgill, R.A. is an ideal creation, painted *con amore*, with excellent result. In (217) "The Iron Mask," by C. Landseer, R.A. a great deal of good painting has been wasted.

There is much to admire in (171) "Lady Jane Grey and Roger Ascham, by Mr. J. C. Horsley—great beauty and sweet expression.—and Mr. Selous's Princes in the Tower, or as the picture is poetically yclept (169), "The Rustle of the Tapestry," is a great improvement on any cabinet picture which he has yet produced. The intended expression is thoroughly conveyed. (191) "Venice," D. Roberts, R.A. is perfect in effect, seen from a distance, but would be the better for a little more work. (248) "An Episode of the happier Days of Charles I." F. Goodall, A. is a pleasant picture, studied, and well painted.

This year Mr. Millais has corroborated the promise made years gone by, and by his present picture firmly establishes himself amongst the first of our painters. With unlimited imitational power and the necessary professional accomplishments is combined a mind of no common order. he thinks entirely for himself, follows no beaten track. Without quotation, the simple title (265), "The Order of Release," is sufficiently eloquent, and will prove strongly attractive. Every object is studied with the greatest accuracy, reflected rather than painted, for never did anything wear a more real aspect, from the wonderfully-painted legs of the child to the primroses that suggest open fields and liberty: such patient labour, combined with so much facility of executing, such determination to leave nothing undone deserves the highest commendation. Simple as the story is, there is a pathos and depth of expression that ennobles and raises it above minor criticism. The date affixed is too early for the costume, apparently a printer's error. It should be after 1715, rather than 1651. (520) "The Proscribed Royalist," is not to be compared with the former, in spite of the truthfully painted tree-trunk and accessories. The drapery in this is more like metal than satin.

"Claudio and Isabella," W. H. Hunt, has much to recommend it to notice, though the Claudio be not a little like an ungraceful marionette with a badly fitting wig. It tells the story, and has much sentiment: the girl's hands are exceedingly good. (304) "Angelo Pailicipazio, having rescued his Bride from the Pirates, returns with her to her Family;" and (537) "Francesco Novello da Carrara, when escaping from the Persecutions of the Duke of Milan, is arrested by order of the Podesta of Ventinaiglia," are a pair of Venetian subjects, vigorously painted, by Mr. F. R. Pickersgill, A. and for rich colour, succumb to none in the rooms—chaste withal, and beautifully composed. Mr. Elmore A. exhibits (320) "Queen Blanche ordering her son Louis IX. from the presence of his wife;" but Queen Blanche is too dramatically posed, and Louis too awkwardly placed, and his head too large, to be compensated for by the clever manipulative qualities and clear nice colour to be observed. It will not do after this "Religious Controversy."—(333) "Now I'll tell you what we'll do"—a conclave of Mr. Frank Stone's (A.)—pretty models, considering in what shape to present a testimonial to him; one is as much bent on embroidered slippers as another on braces, whilst the one holding her knees, votes, we should say, for "lollypops."

(362) "Queen Isabella of Castile, with her Daughters, visiting a Nunnery," by J. C. Hook, A. from over refinement, borders on the insipid, but there are passages in it of real artistic quality. In 279 "The Chevalier Bayard" again serves Mr. Hook as a theme, but it is by no means so graceful a composition as that in which he was represented wounded some three years back.

(396) "The Executioner tying Wishart's Book around the neck of Montrose, at his Execution at the Cross of Edinbro', on 21st of May, 1650," E. M. Ward, A. "On Dit" (the most vexatious chatterbox in the world) has talked so much about this, one of a series of eight pictures for the Commons' corridor in the Houses of Parliament, painted by order of the Royal Commission, that we were led to expect perhaps too much. The scene suggests a well-acted drama rather than an episode of real life, —a fact. The *dramatis personæ*, correctly bedraped and posed, seem to sustain "parts," and do not appear to be the *bonâ fide* individuals connected with the history; and yet, with so much power of painting displayed,—so much mind evident,—there is no denying it to be a fine—nay, a first-rate—work of art: so that whatever disappointment one experiences, must be attributed to our high estimation of Mr. Ward's capabilities as a painter, whose "Marie Antoinette" and other productions in former years are amongst the leading examples of what Englishmen can do, and of what brother-Englishmen may be justly proud. (512) "Joséphine Signing the Act of her Divorce" is inferior, in every sense of the word, to anything we recollect his name appended to for years past.

For a delicious bit of real nature commend us to Mr. Linnell's "Village Spring," (452) which for atmosphere and gradation is the most remarkable landscape in the rooms: one would scarcely want change of air with this veritable slip of country before him: imagination might almost conjure up the soft wind and scent of green fields, and render it possible to enjoy the country without the assistance of a locomotive.

Here, as at a pleasant place, we must stop until next week, when we will also speak of what is no longer to be called the *Architectural Room*.

THE ARCHITECTURAL ROOM IN THE ROYAL ACADEMY.

To you I hope we may look, and not in vain, to direct the attention of the members of the Royal Academy to the state of the Architectural Room, as it is styled, not more than the half of which is devoted to the object professed, and the other half is given to highly-coloured oil pictures, to the utter annihilation of the architectural water-colour drawings, as well as to their exclusion from the space legitimately belonging to them, with such want of discrimination and judgment, that many having considerable claims to respect are placed entirely out of view. The progress made of late years in architecture has been considerable, but the results, as displayed on these walls, is in the "inverse ratio,"—which is no doubt attributable to the progressive contempt shown to it by the Academy.

Can it be imagined that painters are so short sighted as to be indifferent to architecture? Are they not indebted to its results, combined with sculpture, for most important accessories to their art, and in very many instances almost entirely indebted to it for the production of their finest pictures, as well as deriving therefrom almost the only evidence and instruction to be obtained of the earliest condition of their art? and did not the President, in alluding to our present Prime Minister, compliment him upon his connection with the earliest investigators and students of Greek architecture? Surely, such being the case, they would do well to show it more respect;—at any rate it would be better for architecture to exclude it and its professors altogether from their Institution; and when this is done, and our ranks are not thinned by the seduction of some four or five of our ablest professors, we may hope to see an annual exhibition, by the union of all architectural societies, founded upon the chartered rights of the Royal Institute of British Architects, which shall sustain an honourable and independent position of its own. S. W.

A DESCRIPTION OF THE ROYAL PANOPTICON INSTITUTION, WITH DETAILS OF THE CONSTRUCTION AND DECORATION.*

THE Royal Panopticon Institution was incorporated by Charter 20th February, 1851. The ground in Leicester-square on which it is built was in Chancery, and the consequent delays in completing the lease were so great that it was not until July that we were able to get possession. Indeed, up to the very last day we were not by any means certain that the whole negotiation would not have to be abandoned; and on this account, the preparation of the drawings was delayed until the actual signing of the deeds. When this had been done, we had to design and carry up the shell of the building with the utmost despatch, and with very little time for study.

The western part, which is chiefly arranged for private houses, separate from the Institution, was carried up first. The interior allowed of more time for thought, so I cannot plead haste as an excuse; and for whatever faults there may appear in it, I feel that I am fully responsible. I ought also to say, that I had the advantage of working with a council and a body of officers who, whilst looking very carefully after the interests of the Institution, allowed me great latitude in carrying out my ideas, and gave me as complete a control as practicable over every arrangement. There was also a member of our profession, Mr. Marrable, on the committee, from whom I received not only the kindest attention, but many very valuable hints. There were no decorators brought in to heighten, or spoil, as the case might be, the architect's general design; but every question connected with the building was submitted to me, and my recommendations were received in the most liberal spirit. I do not, however, mean to claim the merit of all the details of the decoration. The paintings on the soffites of the dome arches, and on the ceilings (and these are, I believe, the only parts not designed by me), were worked out by Mr. Fisher (of the firm of Harland and

* Read by Mr. T. Hayter Lewis, the architect of the building, at the ordinary general meeting of the Royal Institute of British Architects, April 16th.

Fisher), who, I think, deserves great credit both for the design and the execution. But it was left to the architect to say what decoration he required, of what character, and of what depth of colour. Young as I am, I feel sure that, unless this course be acted upon, and the architect left to work out the whole of the design, it will be quite vain to expect uniformity and completeness in the general effect.

I wish to mention here, that I speak only of myself in this matter, because my partner, Mr. Finden, taking a different department of our business, left the whole management of it to me.

With respect to the style, I must say that its adoption was not my own idea. When the project was started, the style was suggested by the managing director as a novelty that was likely to be attractive. I confess that I entertained strong objections to it, being as sensible as any one of the difficulty there must be in successfully adapting to a northern climate the architecture of a southern one, where the manners, and habits, and feelings, are so totally different. I felt, however, on consideration, that, in carrying out the design in this style, I should probably be allowed much greater latitude than in any other; that I should have greater authority for the free introduction of colour; and that, as the Saracens had not been in the habit of building Panopticon institutions, I should obtain a tolerably free scope in working out the design. I certainly did also feel that, in adopting the style, I was doing nothing more than following the steps of many leaders in the profession. For I think it must be granted that an adaptation of a Saracenic edifice of the fourteenth or fifteenth century cannot be more out of place than that of a Greek one of some seventeen centuries earlier.

The front is composed of a centre, forming part of the institution, and of a private dwelling-house on each side. The elevation presented much difficulty, as, not only were the floor-levels of the centre part quite different from those of the side houses; but, it having been originally intended to connect the south wing with the institution, the floor-levels in it were required to be different from those both of the north wing and of the centre. The greatest part of the tiles used in decorating the exterior were made by Mr. Minton, who took great interest in this use of them, having himself applied them to decorate the exterior of a building near his factory in the Potteries. The tone of the ground, which now contrasts harshly with that of the cement, will harmonize with it when the latter is coloured.

The plan of the institution comprises a large central hall, two lecture-rooms, laboratories, workshops, engine-rooms, gas-works, and other accessories. The hall is 98·0 in diameter in the clear of the walls, and about the same in height to the top of the centre light, and has very large recesses in addition for boxes, and an organ gallery. The dome is 72·0 in diameter, and has in the centre a circular light, 32·0 in diameter, with sixteen star-shaped small ones beneath. I may mention that this hall would have been made square on the plan, and brought up thence gradually into a circle, had it not been for the fear of obstructing some ancient lights. Each gallery has a few side windows, which have, I believe, very little effect generally beyond preventing the dark shadows which would otherwise be thrown by the top lights upon the ceilings. The total cubic contents of the hall and the recesses for the boxes are about 500,000 feet. The superficial quantity of light is equal to about 1,300 feet of horizontal light, or 1 foot thereof to 385 cubic feet. This has been found quite sufficient, notwithstanding that the glass is, in almost every case, either coloured, ground, or enamelled. Were the glass clear, I have no doubt, from actual experiment, that 25 per cent. less glass would have been enough. The quantity of light admitted in the Pantheon at Rome is only one-ninth of the above. The quantity which Mr. Gwilt, in his "Encyclopædia," recommends, is 1 foot superficial vertically to 100 feet cubical of space.

Some difficulty presented itself in constructing the dome, which rests on the top of the three rows of iron columns; there being no means of getting a continuous tie at the springing, nor till more than half way up, as the arched roof of the organ gallery cuts into it. It happened, also, that the part of the walls where the greatest thrust could take place was the only one where no external buttress could be built. The difficulty was overcome in this way: each of the fourteen main ribs of the dome was formed complete on the ground, and I so arranged the weight of the materials, that when the rib was placed in its proper position, it was in equilibrium, and stood upright without support; each rib was then tried to see that none of the joints strained, and was afterwards hoisted up and fixed separately: each thus stood by itself without any thrust; and so effectual has this plan proved, that, after the most careful examination, when the plastering (which was done with Martin's cement) had been finished for some time, I could detect only one very slight hair crack throughout. The large cisterns (holding about 10,000 gallons of water) at the foot of the roof inside, serve to steady the whole. At the level of the springing of the dome there is a complete series of Daguerreotype-rooms, the whole of them (on two stories) being carried by a circular truss, 40 feet span, made of 12 deals, each 7 in. by 1 in. nailed together with an iron strap, inside and out. The height of this part being 50 feet from the ground, there will be an ascending-carriage, which is being constructed by Mr. Bunnett on a very novel plan, suggested by the managing director. In the arches at the base of the dome there will be a series of ten large dial-plates, showing the daily and monthly state of the atmosphere, the quantity of moisture evaporated, and the comparative amount of light,—a thing never, I believe, before done.

There is one more detail of construction to which I wish to draw your attention. The end walls and the floor of the organ recess are carried by three plate girders, each of 36 feet bearing; the constant weight on the two principal ones was calculated at the very utmost at 30 tons in the centre, and each was proved to 50 tons in centre. The organ which they carry is being built by Messrs. Hill and Co. and is more powerful than any in London; it is equal to theirs at Birmingham; and in England is exceeded in size, though not in power, by that at York only; I believe, in fact, that this organ exceeds in actual power, although not in the number of stops, any organ ever built, either here or on the continent. I was quite satisfied that there was no risk from the vibration of the organ over these long girders; but as others thought differently, I was therefore anxious to prove it; and when the pedal pipes, which stood directly over the girders, were ready, I had the matter tested in the most accurate way, being kindly assisted by the officers of the Institution. I think I ought to say that I was very fortunate in having to work with so zealous a body of gentlemen, who, instead of throwing impediments in my way, as is sometimes the case, not only allowed, but assisted me, in every way, to carry out any experiment that I thought important or interesting. In the present case it was done in this way,—some of the wooden trackers of the organ were hung freely from the centre of the girder, over a table, fixed securely in the ground, and quite unconnected with anything else: at the end of the trackers there was a long pointed heavy brass plummet, the point just touching the short end of a lever of 1 to 5; whose fulcrum was supported by the table, and at the end of the long arm there was an index card. By this arrangement, the very slightest vibratory motion possible must have been perceived. The great pedal pipes were then sounded, sometimes two and sometimes three together, in a varied series of trials, the pedals being kept down, in some cases, for three minutes. The effect of thus sounding these immense pipes, 32·0 long and nearly 2·0 diameter, and untuned, was very extraordinary: the whole building seemed in a state of vibration, and, to those standing near the organ, the sound was like that of the heavy, and not very distant beating of a railway train; but the index was perfectly motionless, and the most minute attention could not detect the very slightest movement; indeed, scarcely the smallest vibration could be detected when the tracker was held in the teeth.

The foundation of the building is uniform throughout, being about 3·0 down in the hard blue clay, and all the walls have a concrete bed 3·0 deep; which has been found quite sufficient. A deep well having been sunk into the chalk, to a total depth of 346·0, we found that the blue clay extends to a depth of 160·0 from the surface, and that there then occurs a stratum of sand, gravel, and soft clay, 85·0 thick, before reaching the chalk.

The entrance porch is formed of Ransome's artificial stone, of whose durability I had formed a very high opinion. Some experiments are being made to test this very accurately. The greatest weight borne throughout the building is that on the piers under the iron columns: when the galleries are loaded with people this will amount to about 3½ tons per square foot of brick footing, not reckoning the inverts or the concrete.

As it will be necessary for some purposes of the institution to render the building quite dark, even in the brightest day, an apparatus has been designed by the engineer, and adapted to all the openings, which will, in a very ingenious way, be simultaneously closed and opened at pleasure by one action in the engine-room. Directly the building was covered in, a thermometer was attached to each floor, and the results are worth attention. In the winter there were, in one case, several braziers on the ground story, and the thermometers, reckoning from the ground, marked 38, 42, 45, and 50. A few days after these were removed, and, in a hard frost, the degrees were 37, 38, 38, 40.*

COLOUR-BLINDNESS;

AS EXPLANATORY OF WANT OF PERCEPTION OF THE HARMONY OF COLOUR.

CERTAIN researches into the influence of peculiar organic formation in the philosophy of vision seem worthy of the attention of architects, and apart from the bearing upon the question of signals for railways, which led to publication of particulars lately in the *Athenæum*. If the facts have been correctly observed—of which it would not appear there can be any doubt—they will go far to remove one great difficulty which has beset the labours of those now so actively engaged in disseminating the knowledge of principles of design in relation to the several branches of decorative art.

To those who apprehend the fact of the influence of colours in juxtaposition upon each other, and in whose vision a spot upon a white or neutral ground generates around it its complementary colour, it is often matter of astonishment that these appearances are but tardily accepted by others; and that in many cases, and even where there is no apparent want of faith in the existence of such influences, the eye remains entirely blind to them. In the course of conversation upon subjects which have naturally of late occupied much of my attention, with that of others, I have often met with doubt of the facts which it had been attempted to set forth; and in certain able lectures on the science of colour, it has been obvious to me, that much of the demonstration was quite unappreciated by some of the most attentive of the audience. Some such difficulty in the way of explanation it must have been, which led the author of the French work, "De la Loi du Contraste simultané des Couleurs, et de l'Assortiment des Objets Colorés," &c. to take the risk in one way, of the doubt which he sought to avoid in another, by actual tinting upon the white ground next each of the examples, in his most important illustrative plate, with the complementary colour, which in the eye alone should have been generated.

It therefore becomes of great importance to the progress of that popular education in the use of the observing faculties, of late so auspiciously commenced, that any possible bar to faith in the doctrines taught should be removed.

It had indeed, to many, I suppose, been long known, that individual cases of defective vision existed. In the lifetime of Dr. Dalton, as I well recollect, his peculiar case was a frequent sub-

* To be continued.

ject of conversation in Manchester, and was indeed present to my recollection—in an allusion to the importance of considering individual organization—in a paper on the subject of colour, which, some few years ago, you inserted in your pages. With this trifling exception, I am not aware that the connection of Daltonism, Chromatopseudopsis, or Colour-blindness, with the philosophy of impressions produced by colour in decorative art, has ever attracted attention; although it is right to say that I have not lately examined the particulars of Dalton's case, as they were published by him; nor have I any immediate means of referring to Taylor's "Scientific Memoirs," in which Professor Wartmann has a "Memoir on Daltonism; or Colour-Blindness," to which, I see, the English editor has added "some valuable notes." In the *Athenæum*, the sole point sought to be demonstrated (beyond the fact itself of the extensive prevalence), is the important relation of this frequent affection to the choice of an effective code of signals on railways.

On all accounts, therefore, the researches on the subject of "colour-blindness," by Professor Wilson, of Edinburgh, and so well set forth by him in the number of the journal for the 2nd of this month, may be worth a succinct statement in your pages.

A writer in a former number having speculated upon the possibility of accidents on railways having occurred from mistaken observation of red and green lights opposed, which, he argued, would appear as white light—Prof. Wilson proceeded to show that such accidents were equally, if not more likely, to occur from defective organization in individuals, and consequent indifference altogether to colours. He stated:—

1st. That the affection is much more prevalent than is generally imagined.

2nd. That red and green, the colours used for danger-signals on our railways, are exactly those which are most frequently confounded with each other by the subjects of colour-blindness.

3rd. That colour-blindness implies not merely a confusion in distinguishing between two or more colours, but at least in many cases, *an imperfect appreciation, or feeble hold of colour altogether as a quality of bodies.*

As to his first position, the statistics are defective, yet startling. Prevost has declared that the affection exists *in one male person in twenty.* Seebeck found five cases in forty youths in Berlin. Prof. Wilson himself had suspected its prevalence from mistakes made by students in his chemical classes, as to the colours of precipitates. Two pupils were marked examples. Five other subjects of the affection had made themselves known to him. One of the pupils has four relatives affected in the same way. Professor Allen Thomson, of Glasgow, ten years ago, had investigated, and found so many cases, that, quite independently, he had come to the same conclusion,—as to the danger of mistaking signals on railways. Professor Ke.land, of Edinburgh, the writer continues, found three examples in 150 students. In short, taking the Edinburgh students, so far as examined this winter, one in thirty-seven or thirty-eight is defective as to colour. Twenty other cases had been heard of in Edinburgh, and several in other places. With three exceptions, all the cases known to Prof. Wilson are in the male sex.—The importance of the further study of the question is shown by the statement, that cases often occur in professions requiring a nice sense of colour: thus there are four well-known painters, three surgeons, two stationers, two dyers, one shawl-manufacturer, one clothier, one paper-maker, and one enamel-maker. Consequently on every railway, cases might be expected.

On the other points, Prof. Wilson shows that as the cases examined were so marked, that there was total incapacity to distinguish red and green, the individuals would have been unfit for railway servants; and lastly, that there was not merely false vision, or chromatopseudopsis, but a literal colour-blindness: they doubted about all colours, and on different occasions named the same colours differently. White and black they had no difficulty about. The information given includes this statement—most interesting to all who investigate the philosophy of the subject—that only some six cases are on record as occurring in the female sex. Such are the main points in the published statement.

It might be matter for wonder, that individuals following the avocations instanced above, could pursue them *at all* under deprivation of the sense of colour. In Dalton's case it may perhaps be understood, since a chemist may tell the nature of a precipitate by its appearance, independent of colour, and sometimes will necessarily place greater reliance upon such evidence. The other cases can be explained only by the fact of the extraordinary compensating and adjusting power which there is in the human faculties. But Prof. Wilson particularizes remarkable instances of mistakes made by some of those whose cases he refers to, and to such particulars the attention of your scientific and professional readers should be directed.

Since these statements appeared, I have myself heard accounts of cases which I consider equally indisputable, and all of them are in the male sex.

I trust, then, that with the evidence adduced, I have succeeded in showing the importance of these statements, especially to teachers of the science of colour, that is to say, at least so far as that these should be acquainted with the *fact* of the extensive prevalence of colour-blindness. To avoid misdirected exertion, whether on the part of master or pupil, cannot be otherwise than desirable, whilst, as it was said, confidence in the truth on the one side, and faith in the teaching on the other, seem indispensable.

But the investigations would appear to open out a wider field for speculation than that of which we can take cognizance here. There can be no doubt that the perceptive faculties, whether of form or colour, can be educated and improved by study, and by *using* them—in the right way. Can, then, similar agencies be brought to bear upon cases where the defects appear of a more organic and settled character? In diseases of the eye, a green shade is worn; and green is the chosen colour for some of the most enchanting features of natural beauty. We are told that in looking at different colours in succession, the eye will be favourably or unfavourably disposed for the apprehension of a particular colour by what may have preceded it; so that an adroit silk merchant might derive great advantage from his customers that way. All these are *data* for consideration. The comparative absence of cases in the female sex would seem to tell for the possibility of ultimately discovering some curative process, if not in the more serious cases of organic malformation, at least for the constant apathy to the charms of colour, or the frequent ailments, so to speak, which manifest themselves in selection of tasteless articles of dress and decoration. For, surely, suchless frequent absence of faculties in one sex, must be attributable to the constant education which has gone on since childhood; for, however much of improvement in taste has yet to take place in female attire, we generally find a knowledge of what is becoming, and of what colours look well together, which is, in fact, one practical application of the science. And as to decoration, although the transition from one application of principles to another is not a straight-forward affair, the architect may often run less risk of error by deferring to the taste of the mistress of the house than to that of the master. *A priori*, there would seem no greater wonder in the absence of an eye for colour than in that of an ear for music, or in insanity itself, yet the expanding intellect of the world has not abandoned hope of alleviating any of the physical or mental afflictions.

There is one other question, not unconnected with that of the present letter, which might well occupy a little more attention than it has yet received. What is the true explanation of the differing susceptibilities to tone and character of colour in dress and decoration of the English and continental nations? Is the difference due to fashion, or to education, or to organic conditions such as have attracted attention at Edinburgh? For, I would ask, is it not perfectly consistent with good taste to indulge at one time in a rich scheme of colouring, in which a near approach to the full effect of particular colour is made, by juxtaposition of other selected colour, and at another to choose a cool tone, such as yet prevails in most of our interiors, even where principles of interior decoration have been understood. Yet what is considered excellent in dress and decoration in one case, is thought vulgar and tawdry in the other. At least, most architects will, I think, bear me out in saying, that the greatest difficulty is experienced in introducing into private apartments, colouring which would be considered in good taste on the continent, in similar situations, or in public buildings here. Edward Hall.

THE WAGES MOVEMENT.

It is to be hoped that the workmen, in the extensive agitation which now pervades the country, will keep steadily in view that it by no means necessarily follows that wherever they may compel the masters to accede to their terms, there the advantage is the workmen's. It may, on the contrary, so happen, in many such cases, that the workmen will themselves have deep cause to regret their temporary triumphs. Increase in wages and decrease in time hours are in themselves so desirable, that it will be well to look ahead and see that present compulsion do not so cripple the masters that ere long there be no work to time, no wages to increase. A heavy responsibility, so far as regards their own welfare no less than their masters', now lies on the shoulders of the workmen who are making their power to be felt, for good or for evil, or for both, throughout the whole country. As sincere friends of the working classes, we earnestly hope that they will feel this responsibility, and not mistake present for necessarily permanent advantage. As observed by the *Leader*,—a paper whose sympathies are even more exclusively with the workmen than our own, inasmuch as we sympathise with the masters no less than with the men, and cannot view their best interests as at all separable,—

"The workmen must take care that they do not ask faster than the masters can give, or they will defeat their own purpose. They must take care not to exceed reason. They ought, if possible, to establish a candid understanding with their masters. They ought to know most especially how members of their own bodies are acting in different parts of the country. If they secure all these conditions, they will be able to procure such advantages as more comfortable places to work in—to say nothing of that better personal treatment, which would do as much as anything to improve the moral tone of trade. Prosperity has its lessons as well as adversity; and we are anxious that the working classes should make all that they can out of the present season."

This prudential advice is given at the close of an article on "The Power of the Working Classes," in which the writer's whole interest is centered in the progress and increase of that power. We trust to be seriously listened to, then, in pointing out the fear there is that present triumph may in many cases prove to be but permanent disaster.

The present movement, as in the outset we foresaw it was likely to be, is one of unusual generality and extent. It has penetrated into almost every trade, so that the record of it in our columns, as it affects the building classes chiefly, gives but a faint impression of its importance. That it will, if ultimately and in the main successful, render everything dearer to the working classes themselves, its very universality renders evident. If shoemakers obtain increased wages, shoes and boots must become dearer to workmen in every trade. If tailors share in the benefit, shoemakers must pay as well as others. If *house-makers* benefit, as they ought to do as well as others, rents will be raised over the heads of both tailors and shoemakers. So will it be throughout. For his sixpence or a shilling a day of increased wages in one trade, the workman must help to pay the increase of wages in twenty different trades; and it must be remembered that the *drones* whom it would be desirable to lay most of the common burden on, are but few in comparison with the working bees, who themselves constitute the main mass of the hive; and workmen are very much mistaken if they think that increase of wages is to come really and essentially out of the pockets of the masters, or even out of those of the non-working classes; mainly, such increase will come out of their own pockets so soon as the movement is general enough; and no movement for increase of wages probably was ever so simultaneously general as

nt which now prevails. Its very universality, ien, diminishes the probability of great or ecided benefit being derivable from mere ncrease of wages by any one particular class of orkmen. Nevertheless, they may all derive ome final balance of real and substantial benefit om it; but the considerations now laid before hem ought to temper their eagerness as well as heir hopes, so that false and hasty steps may e the less likely to be plunged into, or exggerated expectations the less likely to lead to r precipitate such steps.

As heretofore, we may note down the more rominent of the passing features of the movement not yet noted, so far as it affects those rades in which we are mainly interested.

At Northampton the carpenters were to trike this week unless the masters agreed to ive an immediate rise of 6d. a day to all employed. Some of the masters urge that they ave contracts which must prove a loss under uch an advance. Will the ruin of the employer enefit the workman? This is a question of vital interest everywhere; for everywhere contracts are under fulfilment at old prices. The present wages at Northampton, on the other hand, are said to be in many cases much less than 20s. a week. The wages generally, however, are quoted as 20s. to 21s.

At Brighton a similar demand by the carpenters of 6d. a day, or a rise from 4s. to 4s. 6d. a week indiscriminately, has been resisted by the masters, and many of those who combined for a strike turned out of employment. The masters, however, express a willingness to increase the rate of wages gradually and with discrimination, beginning, of course, with the better order of workmen; but this does not suit those who are inclined to combine and strike. In such a case, of course, the worst workmen are the best strikers and unionists.

At the Forest of Dean, the Coleford masons and labourers, who lately struck and got an advance from 4s. to 4s. 3d. a day from the Cardiff New Dock Company, have again struck work in consequence of a misunderstanding with the contractor, who had thought proper to dismiss one of the men for improperly working the machinery for shifting the stone! It is a pity that men who do their work properly should thus sacrifice themselves, or be compelled, rather, to suffer, for behoof of those who either cannot or will not do it properly; but thus it too often happens that the sympathies of strikes are with the bad workmen rather than the good.

At Swansea a mason's strike has also occurred. Sixpence a day appears to be a common understanding almost everywhere as the amount of an indiscriminate demand. The contractors for the Beaufort warehouses, Messrs. Haward and Nixon, under whom this strike occurred, have resisted the demand, and the strike took place without any time granted or any previous notice given. Masons arrived from Carmarthen to supply the demand for workmen, but also refused to work without the disputed 6d.

At Plymouth, Devonport, and Stonehouse, the master joiners and carpenters met the men in regard to their demand of 6d. a day, and a limitation of hours to ten. The masters agreed to the limitation by proposing an hour for breakfast, and to hold 18s. as the average week's wages, deserving men or inferior workmen to be treated with on that understanding. These terms have been refused, and a combination with other trades resolved on. The masons in the three towns also require an advance of 6d. a day.

At Birmingham the operative joiners and carpenters resolved to ask for an advance of 2s. a week, and a shortening of time on Saturday, from 5 o'clock or half-past 5 to 4. They desired a settlement by 7th inst. The bricklayers were to follow with a like proposal.

At Liverpool the master painters are agreeing to an advance. The plasterers' labourers have failed to obtain an advance of 2s. a week asked for. The cabinet-makers have obtained their requirements.

At Blackburn the operative and master masons have come to terms,—journeymen to have 4s. a day in winter and 4s. 6d. in summer, involving a rise of 6d. a day; extra work after 6 p.m. or before 6 a.m. to be time and a half in addition; also for allowance one penny an hour. Other rules have been agreed to as to time, &c.

The Glasgow slaters have struck for an advance of 4d. a day, their present wages being only 2s. 6d.

EXHIBITION OF DRAWINGS BY AMATEURS.

THIS exhibition, established by the disinterested efforts of one or two lovers of art, who believed and believe, that amateurs must derive advantage by the comparison of their works with those of others, and might be spurred on to excellence by the stimulus of public exhibition, is taking quite an important shape. Last year there were but 109 exhibitors; this year there are 230, who have contributed 402 sketches and drawings, many of them of considerable excellence. If it do nothing more than aid in making the practice of art fashionable it will do much. With the practice of art comes the study of nature, and many have reasons to rejoice in the possession of an accomplishment which has enabled them to find in the latter soothing and renovating delight. As Bryant writes, quoted by one of the exhibitors with the title of a clever drawing,—"A Lawyer's Vacation Study" (16).

> "Tho' forced to drudge for the dregs of men,
> And scrawl strange words with a barbarous pen,
> I sometimes come to this quiet place
> To breath the air that ruffles thy face,
> And gaze upon thee in silent dream;
> For, in thy lonely and lovely stream,
> An image of that calm life appears
> Which won my heart in my greener years."

Mrs. Bridgeman Simpson and Mr. T. Gambier Parry may be said to head the exhibitors: the "Ponte Sisto, Rome" (8), and "Sketches in the Campagna" (342) by the gentleman, and "The Greek Theatre, Mount Etna in the Distance" (39), by the lady, are admirable productions. "Cromer, Norfolk," by Mr. R. Elwes (16); "Kintail Alps, Ross-shire," by the Hon. Mrs. Carew St. John Mildmay; "Lago d'Albano," by Mr. J. Macdonald (108); "La Cava," near Naples," by Capt. Robinson (122); "The Haunted Room," by Miss Bedingfeld; (134); Mr. Munro's sketches from nature, in chalk; (284) "On the Huntingdonshire Fens," by Mr. Allfrey; "Three Sketches from Nature" (309), by the Hon. Eliot Yorke, M.P.; Mrs. James Hopgood's landscapes, and others by Mrs. Higford Burr, Mr. Mocatta, Mrs. Salvin, &c. have great merit and beauty. Parts of (175) "Old Houses in Hastings," by Miss Isabella Jones, are remarkably well treated, though a practised eye may fancy he sees two hands in it: and (400) "Sketches on the Danube," by the coxswain of the *Water Lily*, shews that the said coxswain of that venturesome and frolicsome craft was Mr. Alfred Thompson.

CHURCH-BUILDING NEWS.

Tiverton.—St. Peter's Church having for some years been getting much out of repair, it has been resolved to shut up the building so far as regards public worship, and to put it into a thorough state of repair. About 3,000*l.* have already been promised, and the parish will be called upon to raise 1,200*l.* by rate. The whole cost has been estimated by Mr. Ashworth, of Exeter, architect, at about 4,000*l.*

Henbury.—The chief stone of a new church, at the hamlet of Hallen in this extensive parish, was laid on Wednesday in last week, on a site about a mile and a half from the parish church, and near Severn House.

Shrewsbury.—The foundation-stone of a new Wesleyan Methodist chapel was laid here on Tuesday in last week, by one of the expelled Conference ministers. The site of the building is on a part of the Castle Fields Estate, and has a frontage to Beacall's-lane. The dimensions of the chapel will be 49 feet long by 31 feet wide, and there will be a school-room and two vestries underneath, the former 36 feet long by 31 feet wide, and the latter 12 feet long by 12 feet wide. The walls will be built with red and white brick, the roof will be open, and there will be stall seats instead of pews.

Shipton-on-Stour.—It is proposed to rebuild the parish church, preserving the tower, which requires some restoration. The building has long been insufficient for the accommodation of the inhabitants. Nearly 1,600*l.* have been already subscribed.

Stafford.—A stained window by Willement, has recently been placed in the chancel of Ingestre Church, in memory of the Hon. J. C. Talbot. In the principal compartment is represented the Resurrection, and underneath are introduced the armorial bearings of the family, with an appropriate inscription. The style of ornament adopted by the artist corresponds with that of the church, and is of the Italian school of the fifteenth century, with an enriched border.

Wigston Magna.—Endeavours are being made to provide the means of restoring St. Wolstan's Church, in this parish. Messrs. Walker and Goodacre, of Leicester, architects, have been employed, and have prepared plans. A subscription is in progress, according to the *Leicester Advertiser*.

Heath, near Hardwick.—A new church is now in course of erection at this village, under the superintendence of Mr. H. I. Stevens, architect. It is in the Decorated style. The stone is from Hardwick. Mr. Edwin Thompson is the builder, and the iron-work is by Mr. Haslam. The old churchyard is retained as a cemetery, and a portion of the fabric is converted into a chapel, in the construction of which some relics of ancient workmanship are preserved.

Leek.—The committee appointed for promoting the erection of St. Luke's Church, some years ago, were obliged to leave the tower unfinished, and to place a temporary fence around the churchyard, for want of sufficient funds to complete the whole. The probable cost of carrying out the original design entire is about 1,300*l.* which the committee are endeavouring to raise by an appeal to the public. The subscription list already amounts to 1,000*l.*

Liverpool.—A proposition is on foot to carry out the rebuilding of St. Peter's Church in a manner worthy of the town; and a correspondent of the *Albion* suggests, though not himself a churchman, that, as the Ecclesiastical Commissioners have recommended that Liverpool be constituted a bishopric, the restoration of St. Peter's should be carried out in such a way that it could at any time be converted into a cathedral.——The first stone of a new parish church was laid at West Derby, by Lord Sefton, on Tuesday in week before last. The new edifice will be in the geometrical style, from a design by Mr. Scott, architect. It will have a tower with turrets, and will be built of the red sandstone of the district, except the tower and internal piers, which will be of Yorkshire stone. There will be no galleries, the roof being ornamented with stained and varnished beams, with ornamental traces. Mr. Barker, of West Derby, will be the builder, and Messrs. Jones and Jump will execute the joinery and carpentery work. The total cost is expected to be about 8,000*l.* The accommodation will be for 1,200 persons, and give 300 additional free sittings. Lord Sefton has contributed the site and 500*l.* In all, 6,500*l.* have been already subscribed.

Preston.—The contracts for the rebuilding of the parish church include one from Mr. Foggett, of Manchester, whose tender was the lowest for the entire work. On Monday in last week, the organ was removed, so as to allow the demolition to commence immediately afterwards. The time allowed for the execution of the work will be fifteen months, and in the evening, service will be performed at St. George's for the accommodation of the congregation of the parish church. Marriages, christenings, &c. will continue to be celebrated, and on the completion of the nave and chancel, the tower will be pulled down. The following description of the church, as it is intended to be, is condensed from particulars by Mr. Shellard, of Manchester, the architect, in the local *Guardian*. The church will be almost entirely rebuilt in the Flowing Decorated English style of architecture, and will consist externally of a nave and two side aisles, the present chancel remodelled, and a tower and spire at the west end, retaining the base of the present tower. The porch will be placed at the west end of the north aisle: the upper part will form the vestry, and below, the main entrance into the church.

The north and south aisles will be divided into six compartments, each compartment containing a large pointed window, the heads filled in with flowing tracery of various patterns. A buttress in two stages, crowned with a crocketted canopy, will mark each division. Two large octagonal canopied and crocketted pinnacles will rise on each side of the nave at the junction with the chancel, which will comprise three compartments on both sides, each of these to contain a large pointed window of three lights and varied flowing tracery. The east end of the chancel will be filled up with a large pointed tracery window of five lights. The porch will consist of a large pointed doorway. Above will be a pointed window, filled in with flowing tracery. The gable will be ornamented with cross and crockets. The tower will be in two stages, with two buttresses at each angle. The upper stage will contain upon each face coupled pointed windows of two lights each, with flowing tracery heads. The clock will be placed beneath these windows. At each angle of the tower will be pannelled, crocketted, and canopied pinnacles, from which will spring pierced flying buttresses, uniting them to a similar pinnacle at their back, and at the base of the octagon of the spire, on the four fronts of which will be spire-lights or windows, ornamented with tracery heads, crocketted canopies, and buttresses terminated in pinnacles. Two tiers of spire-lights of similar character will ornament the upper and middle parts of the spire. The total height of tower and spire will be 205 feet. Internally, the church will be divided by five moulded stone arches, upon octagonal piers, on each side, and a smaller one against the chancel wall; the coupled windows to be placed over the centre of each archway. The chancel will be divided from the nave by a moulded stone archway, and raised two steps, and the large window at the end will be filled in with stained glass from the present window. The pews will be stained dark, to imitate oak, the bench ends moulded. The eastern end of chancel will be railed off with a low railing of open tracery work and buttressed. The roofs throughout will be exposed to view, and stained dark. A moulded cornice will run along beneath the rafters' feet. The galleries will run round the nave upon two sides, and return round the west side, which will contain the organ and seats for the choir.

ON THE RELATION OF THE ARTS OF PRODUCTION TO THE ARTS OF DESIGN.

Last week Dr. Wiseman lectured on this subject at very great length in Manchester, and in the course of his address, made the following observations. By the arts of production, he said, he meant those arts by which what was but raw material assumed form and shape, a new existence, adapted for necessity, or for some use in the many wants of life; such was pottery, carving in its various branches, whether applied to wood or to stone; such the working of metals, whether of gold or of silver, or brass or iron; such was the production of textile matters, of objects of whatever sort and for whatever purpose; such was construction in its different branches, whether commencing with the smallest piece of structure and ascending to a great and majestic edifice; and by the arts of design he understood those arts which represented nature to us in any form, and that brought before us beauty, whether in form or in colour. Now these arts ought, as every one agreed, to be in close harmony one with the other; but the harmony which he wished to establish between them must be an honourable union, an equal compact; there was not to be one the servant and the other the master, each must be aware of the advantages which it could receive as well as of those which it could confer. Thus the arts of design, for instance, would have to give elegance of form, grace of outline, beauty of ornament, to what was produced by the other class of arts; and they had to transmit, and multiply, and perpetuate the creations of the arts of design. It was agreed on all hands, that as yet this complete harmony did not exist; that we were far from having arrived at the mutual application of the one class to the other which gave us a satisfactory result. He believed it most important to propagate to the utmost the love of art. He believed it most useful to accustom every child even to its first rudiments, its elementary state; he thought that if we could make drawing a part of universal education a great deal would be gained, but certainly that could not be enough. There was now a great desire to form in all our great cities where industry prevailed, museums, which should contain all the most perfect specimens of what antiquity in every age had left us of beauty in design, or elegance in form; we wished that our artisans should have frequently before them what might be considered not merely actual models and copies, but likewise objects which might gradually impress their minds with a feeling of taste. Let them suppose that, by some chance, all those objects which they had collected in a museum were, at some given period in the first century of Christianity, collected together in an ancient Roman's house, and let them suppose the owner of the house suddenly appeared amongst us, and had a right to claim back all those beautiful works of art which we so highly prized, and which we had taken so much trouble and laid out so much money to collect. Now what would he do with them when he got them back? The busts which we had been copying, and drawing, and admiring so much, if they were portraits of his ancestors, would be to him pieces of household furniture, esteemed as such, and not as works of art, and he would put them into the niches from which they had been taken, but where, perhaps, they were in a very bad light; his statues, if they did not represent his ancestors, it was probable he would send them into his garden; the mosaic which we had valued so much, and which was such a wonderful piece of work, he would put most probably into the porch of his house, to be trodden under foot by every slave that walked in or out. And when he looked about him at the fine collection of beautiful Etruscan vases, he would recognise them at once—take that to the kitchen, it is to hold oil; take that to the scullery, it is for water; take these plates and drinking cups to the pantry, we shall want them for dinner; and those smaller, those beautiful vessels, which yet retain the very scent of the rich odours which were kept in them,—take them to the dressing-room, they are what we want in our toilet. This is a washing-basin, which I have been accustomed to use,—what have they been making of all these things, to keep them so jealously and treat them as wonderful works of art? And so all those beautiful works of art became again so many household pieces of furniture! And then he looked into the beautiful cabinet, and he sent those exquisite gems into his room, to be worn by himself and his family as ordinary rings, and the gold and silver and bronze medals he quietly put into his purse, for to him they were only common money. Now here we had made a collection of magnificent productions of the art of design; we had treated them as the results, the creation, of art, and in reality they were but the fruits of the art of production. Now what were we to say to this? That there was a period in Rome, and there were similar periods in other countries at different times, when there was no distinction between the arts of production and the arts of design,—when those very things which to us now were objects of admiration, were merely made and fashioned as we saw them for the ordinary uses to which we adapted similar substances but of very different forms. Then what he fancied we desired was that we should bring art back to the state in which the arts of design were so interwoven with the arts of production that the one could not be separated from the other, when that which was made was by a certain necessity made beautiful, and that could only be when we were able to fill the minds of our artizans with true principles, when real taste pervaded their souls, and when the true feeling of art was at their fingers' ends. In every instance he had seen, whenever there had been real beauty and perfection of work, it had been in consequence of the practical art and the fine art being as closely combined as possible, if it could be done, in the same individual, if not, in a most perfectly harmonious co-operation. Now, we must watch very carefully whether the plans which were being prepared for artistic education to be applied to production would tend to combine those two characters better, or whether it would separate them: and he came to the conclusion, that if art had flourished in its perfection where the two had been combined, and if, on the other hand, it was acknowledged that at present art was not applied in Manchester as it should be, and that our artizans were workmen and not artists, he thought we had a right to conclude that the separation of the two characters was the cause of our inferiority, that therefore the education we were to prepare for those who were to carry out productive art to its perfection must be an education which would combine closer than they now existed those two different departments of what he considered one common parent.

BURIAL GROUNDS.

One of the most important points, not yet determined, is within what distance from Saint Paul's burials shall be permitted to be made. It has been said in a high quarter that no local tinkering will be permitted in matters affecting public health; but how can we reconcile this announcement with the *fact* of the parish of Saint Pancras, which extends to Highgate, having transferred their graveyard into the adjoining parish of Finchley, distant some two miles, having just effected a purchase of land in the latter parish? With the facilities now offered by our various metropolitan terminal railway stations there would appear to be no sort of excuse for "so lame and impotent a conclusion;" and I conceive, if the legislature, in its wisdom, have provided no remedy for this anomalous state of things, the owners and occupiers of land in the parish of Finchley had better turn their attention to the Public Nuisances Act, and memorialize the Board of Health.

A District Surveyor.

Kensington.—A burial board was appointed to adopt measures to carry out the scheme recommended by the Board of Health; and on the 10th March last the vestry assembled to hear from their board their report. At this meeting a dissentient voice was raised from a quarter very little dreamt of. Dr. Waddilove, the representative of the metropolitan diocesan, stigmatised the whole proceedings of the burial board as ill-advised and impracticable. The Board undertook to reconsider their report, and a few days ago the Venerable Archdeacon Sinclair requested Mr. Hall to read as follows:—

"The Kensington Burial Board desire to inform the vestry of the measures they have taken since the date of their last report to provide a new burial-ground for the parish. They have ascertained that several of the metropolitan parishes,—in particular St. Pancras, St. George's, Hanover-square, and Lambeth,—have purchased sites beyond the special jurisdiction of the Secretary of State and the Board of Health, whose requirements are generally considered expensive and inconvenient. As Wormholt Farm, in the parish of Hammersmith, although within the special jurisdiction, had been adverted to at the last meeting of the vestry, as in all probability affording a commodious site, the Board made inquiry with regard to it, and finding that both the freehold and leasehold might be obtained, they applied to the Secretary of State for his approval. Lord Palmerston, in consequence, sent Dr Sutherland to examine the ground: but the report of Dr. Sutherland, upon the soil and drainage, was unfavourable. He stated, also, that his lordship, if he gave his consent, might be expected to enforce the same condition in the case of a burial-ground at Hammersmith as at Willesden, where the cemetery had a similar soil. As these conditions are exceedingly troublesome and expensive, and as the only portion of the farm which the leaseholder would consent to part with is situated at its farthest extremity, about three quarters of a mile from the high road, the Board did not consider it advisable to proceed farther with the negotiation. The Board then directed their attention again to the parish of Hanwell, where the burial board of St. George's, Hanover-square, have purchased a site consisting of about 19 acres, which were obtained at the rate of 350*l.* per acre. Upon inquiry it was found that a piece of freehold ground might be purchased nearly opposite to the St. George's Cemetery at the same rate, viz. 350*l.* per acre. It consists of about 8 acres, may be easily drained, and is only about 300 feet from the Uxbridge-road, near one of the stations of the Great Western Railway. The Board recommend that the site should be purchased,

and that, if possible, an entrance should be obtained directly from the London-road; the total cost to be 2,850*l*. But two or three acres might afterwards be sold, probably to great advantage, either to some parish for a cemetery, or to some private individual for building ground: the remainder would form a compact site, easily enclosed, and moderate in price. The Board will only add, that they have not hastily agreed to this recommendation, but only after several months actively employed in holding consultation, issuing advertisements, carrying on correspondence, and visiting all the various places where it was hoped that an eligible site might be obtained."

A motion that the report be received and adopted, and that the Board be authorized to borrow 5,000*l*. for the purchase of the ground and laying it out, was ultimately carried, the Board agreeing to strike out the words relating to letting part of the land for building purposes.

CITY THOROUGHFARES.

IN a few months the new street from London-bridge to St. Paul's will be opened to the public, and a considerable increase of traffic along Ludgate-hill and Fleet-street may, consequently, be anticipated. It is astonishing that no steps have been taken to provide for this by widening Ludgate-hill. Even at present there is no part of London so crowded, and where so many stoppages are continually occurring; and what will it be when a fresh stream of traffic is opened into St. Paul's Churchyard? If Ludgate-hill were widened by throwing back the north side from the Old Bailey, a fine view would be obtained of the Cathedral from Fleet-street. At present a projecting bend of the street intercepts all view from any distance of that glorious building; and the church of St. Martin, Ludgate, stands presumptuously directly in front.

A. Z.

WHERE IS SHAKSPEARE'S MONUMENT?

THE 26th being the anniversary of the birth-day of Shakspeare, I renew my suggestion that a fitting monument, combining architecture, painting, and sculpture, should be raised by the people to his honour. It is strange that we English, the poet's countrymen, should hit upon no mode of testifying our admiration of his powers, save that which puts money in our pockets. Thousands daily profit by his genius: booksellers by publishing fresh editions of his works; actors and actresses by declaiming them, and by "readings;" orators and writers of every denomination, by quoting from and studying them; and the public of all grades, shades, and age, in culling wholesome and varied mental aliment from the sweet pages of the "Swan of Avon." In daily conversation we hear the poet's strain: papers and periodicals teem with quotations from his instructive pen, and with advertisements and notices of his "songs," his "similes," and "sentiments:" we hear him in the streets, for Shakspeare's phrases are even in the mouth of the people "household words." We encounter him in the libraries of the rich; and in the peasant's cottage he is by the side of "the Book of Books," still the great human teacher; for Shakspeare, Nature's child, the seer of "good in everything," speaks a language only not divine. And yet for all this good there is not a single token worthy of the name to which the British public, his heirs, can point in high proof of their gratitude and love. Where is the magic art that might bid the token rise? The age is Shakspearian. All must be struck with the efficacy with which Shakspearian lore is blended with the affairs of every-day life, amongst all ranks of the community. What "Homer" was to the Greeks, the "Bard of Avon" is to us; and, in truth, if we glance at human society, we shall find that almost all nations have their vivifying, soul-inspiring floods of poetry, as almost all lands have their fertilizing streams. There are the ample rivers and the smaller rills; so are there the great and the minor poets; sometimes the main stream has more than one source, as, for instance, the triple-mouthed Nile; so three great well heads, Spencer, Shakspeare, and Milton, feed the waters of poetry in England; and, as all these torrents, streams, and little rills conjoining hasten on and ultimately blend with the turbulent and fretful ocean, so the full tide of poetry mixes with the rough and murky scene of life, gaily colouring and softening this scene, which, but for this, would be insupportable to the sight and touch. The daily concerns of life, though dull to the dull-eyed, are ripe with poetry; and let us thank God for this, since it is this poetry of earth which affords a glimpse of heaven.

A. W. H.

THE ARCHITECTURAL EXHIBITION.

IN consequence of numerous inquiries relative to the Architectural Exhibition, we have made ourselves acquainted with the position of the undertaking at this time.

The National Institution having resolved to open their own Exhibition at the Portland Galleries much earlier than before, they were unable to accept the Architectural Exhibition again as tenants, except for the months of November, December, and January, which of course did not meet the views of the committee. This impediment, wholly unexpected, entirely deranged the then intended course, namely, to continue the Exhibition at the same time and place as before, until it could be opened in a suitable building, expressly provided for it, and in the *best season*.

Advertisements were issued, and every endeavour was made at that time (July, 1852), and since, to obtain another gallery, but without success. A plot of ground, near Winsley-street, Oxford-street, offered itself, on which galleries of the necessary extent might have been built. Plans were suggested, and a negotiation entered into with the proprietor—particularly with reference to obtaining a proper entrance, which was indispensable, either direct from Oxford-street, or from the best end of Market-street; but after treating with various adjoining owners, the difficulties in the way were found to be insuperable.

A plot of ground near Regent-street, and with an entrance from Piccadilly, was then met with, and the honorary secretaries were authorized to negotiate with the proprietor, and to offer a heavy rental for occupation of two spacious galleries, which he agreed to erect, in the months of April, May, and June. Every endeavour has been made to bring this matter to a satisfactory conclusion, but legal difficulties have as yet prevented this.

The committee were also willing, if the proprietor preferred it, to take the ground themselves, and erect galleries by means of a public company for the purpose, or in some similar way. The committee are still exerting themselves, and we have no doubt the profession will do them the justice to believe that they are actuated by an anxious desire to arrive at a conclusion worthy of the subject they have in hand.

COMPETITION COMMITTEES AND ARCHITECTS.

KIDDERMINSTER—ALFORD.

WE are constantly receiving letters from architects desiring us to draw attention to the unworthy *rewards* offered to architects for designs, but we have so often done so without effect that it would seem to be of little use. So long as architects can be found to respond to such advertisements, and lend themselves to the degrading system which is acted on, so long, of course, will such advertisements appear.

As to the prospectus of the committee for building a mechanics' institute at Alford,—to cost 500*l*.—who ask for plans, specifications, and estimates, and offer "*two guineas, one guinea, and half a guinea* for the first, second, and third best *plans* according to their judgment," as they address it to those "who feel disposed to aid the institution," little can be said beyond condemning the want of taste shown by the offer of such sums, and the want of knowledge evidenced by the circumstance that they gave *five days* for the preparation of the plans, specifications, and estimates!

Complaints have reached us as to the replies to architects who have written concerning the plans wanted for public rooms at Kidderminster. Some who wrote for particulars to judge if it were worth while to go to the spot, have been coolly told that "it would be useless to send designs unless they saw the site, and that owing to the number of applications that were received it was impossible to comply with all." The time allowed for the preparation of plans is much too short. One correspondent says,—"the public who have been induced to subscribe towards the undertaking as well as to take shares in it (Lord Ward has taken shares to the amount of 300*l*. besides a donation of 200*l*. and the subscriptions and donations now amount to 4,800*l*.), ought to be made aware of the system already commenced relative to the designs for the proposed building. The success of the undertaking mainly depending on the suitability of the plan and proper arrangement for the intended uses of the building, let those interested in the undertaking take care lest it shares the fate of a corn exchange in the same county, which, after costing between 5,000*l*. and 6,000*l*. remained unfinished, and was at last wound up in chancery and sold for less than one-third of its cost, to be converted into a concert room."

Lord Ward should look into the matter, and put the competition on a better footing.

GLAZE YOUR WAYS.

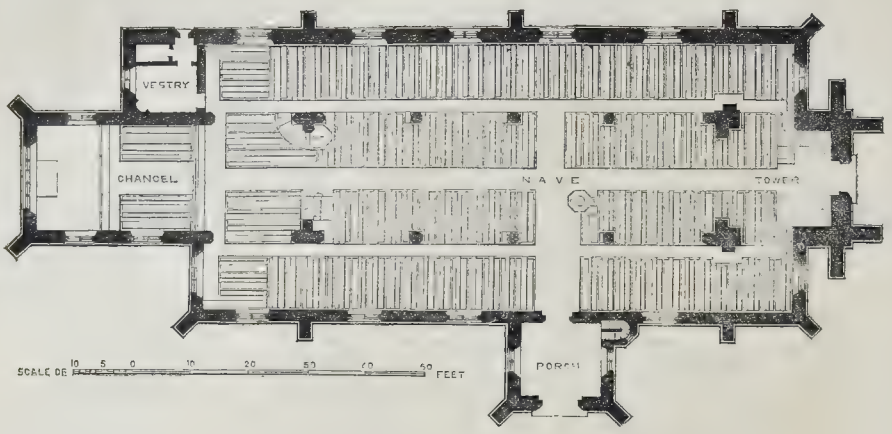
ALLOW me to make a suggestion, which I think would give rise to a great improvement in many of our modern cities. My proposition is this:—In all the leading thoroughfares of principal towns I would recommend that a glass piazza be erected over the flagways or footpaths on both sides of the streets, such piazza being formed by a series of ridge and furrow roofs placed one beside the other in succession, after the fashion of the Crystal Palace, and which might be supported on iron columns. This, if carried on continuously in front of the houses and over the crossings, would be highly ornamental, while it would be of the greatest possible public utility. We might then traverse a large city, such as London, Paris, &c. in snowy or wet weather without risk of cold or inconvenience; and then healthful bodily exercise might be taken in all seasons, and the necessity of a winter garden would be advantageously superseded, or, if still deemed beneficial, means of getting to it comfortably would be thus afforded without the inconvenience of travelling a long way in the close and heated atmosphere of either cabs or omnibuses.

To those who have travelled in Italy, and know the advantages of even the dark and intermitted piazzas of that country, the beneficial effects of my proposal will be obvious; and when we consider the changeable nature of our English climate, the quantity of rain that falls in a year, and the consequent interruption of business and injury to health that it frequently entails upon the community, the benefit of an easy and inexpensive remedy, such as I suggest, will be at once perceived, and, I doubt not, appreciated. During warm weather this covered way might be made to afford an agreeable shade, by spreading over the glass brown holland cloth, which should be done by the several householders and shopkeepers interested. We should then be spared those unsightly shop-blinds which are now so universally complained of as public nuisances, and which of late years have almost become intolerable.

Now that our railway system has been brought to such perfection,—we can actually travel the length and breadth of the land from one town to another, in all kinds of weather, with more comfort and less risk to health than we can go to the next street, or from our house to the station,—this is a consideration to which I would draw the attention of the various governments and municipal authorities throughout the world,—of the sanitary commissioners,—of medical men, and those desirous of promoting the health of towns, and whose object it is to remedy, as far as possible, whatever is detrimental to the well-being of nations and individuals.

WM. H. V. SANKEY.

SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY.—The last *conversazione* for the season took place on Monday. The papers read were —"On Ecclesiastical Architecture," by Mr. Giles; "On Caverns and Fissures in Rocks," by the Rev. W. Phelps: and "On the Church of St. Mary, Kingston," by the Rev. E. Carter.



PLAN OF ST. JOHN'S, NORTH BRIXTON.

THE CHURCH OF ST. JOHN, ANGELL-TOWN, NORTH BRIXTON.

THE church is designed in the Perpendicular style: its plan comprises a massive west tower 23 feet square, and 100 feet in height, to the spring of the angular turrets. The nave is 100 feet by 20 feet, 41 feet high; the south aisle 100 feet by 12 feet, 24 feet high; the north aisle 100 feet by 12 feet, with a large porch and room over. The chancel is 30 feet by 20 feet, and 32 feet high. The church contains 1,150 sittings, including a small western gallery. The seating, pulpit, desk, and other fittings are of oak. The roof-timbers are deal, stained, and the intervening spaces tinted of an azure hue. The nave and aisles are paved with Staffordshire tiles alternately black and red, and the chancel with Minton's encaustic tiles. The five-light east window contains painted glass by Hudson. The materials of which the church is built are Kentish rag, and Bath-stone dressings, relieved in parts by the introduction of Devonshire rag of a dark tint. The discharging arches over the doors and windows are alternately formed of dark and light rag. The parapet of the tower between the octangular turrets is also varied by the use of dark materials.

The church has been built under the direction of Mr. B. Ferrey, at the sole expense of William Stone, esq. of the Casino, Herne-hill. The contractors are Messrs. H. and R. Holland, of Bloomsbury; and the amount of the contract was 5,302*l.*

The site was given by the owner of the estate, B. J. A. Angell, Esq.

The ecclesiastical district of St. John's is detached from St. Matthew's, Brixton; and the first incumbent is the Rev. Matthew Vaughan. We may mention, that the gentleman whose name is now given to the town (after suburban fashion) was the benevolent and eccentric "John," who died at Stockwell-park House in 1784, and in whose will (fruitful of litigation) was expressed a desire that a chapel should be dedicated to the saint of his name.

Schools have been erected, of which we may speak hereafter.

GIBSON, THE SCULPTOR.—In the *Builder* of the 23rd ult. is an anecdote of Gibson, of Rome, in which it is stated that he is truly an English sculptor: "truly a *British sculptor*" would have been a more appropriate designation for a Welshman. He is proud of his country and of the British blood that runs in his veins, and although he left the principality when only nine years of age, he is still able to converse with fluency in his native tongue.—ANOTHER BRITISH SCULPTOR.

PROVINCIAL NEWS.

Chelmsford.—The local Board of Health are about to proceed with the plans for drainage and water. Nine miles of sewer and ten miles of water-pipes will be required. The cost of the drainage will be 5,500*l.*; of the water 6,800*l.*

Southampton.—In reference to the increased value of property in Southampton, the *Hampshire Independent* reports that, at a sale by auction, on Monday in last week, a warehouse or store, and stabling, in front of the railway terminus, having a frontage in Terminus-terrace of 36 feet and a depth of 70 feet, leasehold for 40 years, renewable every 14 years, at a ground rent of 10*l.* 16s. was put up at 400*l.* and, after a spirited competition, was knocked down at 1,030*l.* The second lot, a six-roomed dwelling-house adjoining, of same tenure, and at a ground rent of 5*l.* 8s. was purchased for 635*l.* making a total of 1,665*l.* The estimated value of the property, a short time since, was 800*l.* and the reserved price at the sale was 950*l.* Both properties have been purchased by hotel keepers.

Birmingham.—A return of the building plans registered according to Act, from January last year till end of March, 1853, a period of fifteen months, shows the following results:—

Houses	3,020	Sets of offices	3
Chapels	5	Flour-mills	2
Schools	3	Saw-mill	1
Warehouses	20	Foundry	1
Manufactories	20	Sets of shopping	13
Malthouses	4	New shop-fronts	35
Stables	8	Alterations & additions	20

But, in addition to this, as observed by the *Birmingham Journal*, must be noted the hundreds of erections springing up on every side beyond the limits of the borough, and connecting the town by vast wildernesses of brick and mortar with the agricultural districts of Worcestershire and Warwickshire on the one hand, and the great mining and manufacturing communities of South Staffordshire on the other. Little more than a century ago the whole of Birmingham did not contain 4,000 houses—the growth of many ages, dating back to before the conquest. Now they add nearly that number to the 50,000 already existing, in the course of little more than twelve months.

Blackburn.—Now that the Church lands have been enfranchised, says the *Blackburn Standard*, it has been suggested that some public steps should be taken to secure to the town a public park, or other recreation grounds, before the land is taken up for building purposes. One locality has been repeatedly indicated—the neighbourhood of Pemberton Clough. A considerable sum (about 2,500*l.*) now lies in the hands of the overseers of Blackburn, applicable to the purpose. A large sum was also subscribed towards the Peel memorial, which might be appropriated in some way in connection with recreation grounds—say in the laying out of a botanic garden and Museum of Natural History, both of which would be admirable appendages to a public park. A large additional sum, our authority believes, might be obtained by a general appeal to the inhabitants.

Buckhaven.—The foundation-stone of the new harbour—or rather of an important extension of the new harbour—at Buckhaven, was laid on Monday week, with masonic honours, in which the inhabitants of Leven, Wemyss, and the surrounding villages participated. This undertaking, which reflects the greatest credit upon the hardy and enterprising fishermen of Buckhaven, through whose persevering exertions, aided by the Government Board of Fisheries, it is now completed, was first begun in 1822 by the subscriptions of the fishers themselves, who formed an association for the purpose of collecting money to meet the Government grant. The particulars, which we have taken out of a Scottish paper, will show what may be done by even a village of poor fishermen, not long since a subject for standing jests, perhaps not very just or fair ones, on account of their antiquated and primitive intellectual darkness. First of all, they collected 1,000*l.* in this way, and the Board of Fisheries advanced 3,000*l.* so that a pier of about 1,200 feet in length was finished in 1838. In 1840, 2,600*l.* additional were expended on what is called the West Breakwater. The harbour and breakwater, however, not being yet found sufficient to secure the safety of the boats in severe weather and during certain winds, the fishermen, in 1849, set themselves to raise the further sum of 3,000*l.* in order, with the assistance provided by Government, to carry out the pier for another 1,000 feet in deep water. For this purpose a rate of 1*l.* for the season was laid upon each fishing-boat belonging to the harbour—there being above 200 fishing-boats in all, and two seasons in the year—and a small weekly subscription was levied from the fishermen, collected by a committee formed of the youths of the village. Many difficulties arose from time to time in the carrying out of these arrangements, but these have been overcome, and the amount, partly by contribution and partly by loan, realized. In the meantime, in 1850, the extension was commenced—Mr. Wilson, Granton, contractor; Mr. D. H. Stephenson, superintendent engineer to the Board of Fisheries, inspector; and Mr. Lesslie, Edinburgh, architect; and it is now nearly finished, forming altogether a semicircular pier above 2,200 feet long, and with the western breakwater enclosing a sheltered and commodious harbour, the advantages of which will speedily be felt in this rising fishing station.



ST JOHN'S, ANGELL TOWN, NORTH BRIXTON.—Mr. B. Ferrey, Architect.

PROPOSED GREAT INDUSTRIAL EXHIBITION FOR SCOTLAND.

A PROPOSAL is being circulated, that the unfinished "National Monument" on the Calton-hill, Edinburgh, should be adapted to contain a great industrial exhibition for Scotland. The proposer says:—"The interior of the main building will be formed into a central hall of 220 feet in length and 100 feet wide, which will be surmounted by an inclined roof, 84 feet high from the floor to the ridge. The ceiling will be divided into panels formed by the trellis ribs, and the light divided from the roof will fall in one unbroken and uniformly distributed mass. The central hall will be surrounded by galleries, affording space for exhibition purposes. The basement projections will be divided on the north and south sides of the great hall into a central arcade, and corridors with semi-circular roofs. The east and west divisions of the basement space will consist of large compartments for machinery and heavy goods. Around the entire building, within the colonnade, will run external galleries for promenading. The materials will consist of iron, timber, and glass. The estimated exhibition space afforded by the area of the central hall, galleries, and basement projections, will be about 120,000 square feet. Wall space, 60,000 square feet."

DISTRICT SURVEYOR'S FEES.

LOVELL, D.S. *v.* DAY.

THIS was an action brought in the Clerkenwell County Court in last month, before Mr. Serjt. Jones, to recover the sum of 5*l.* being the amount of fees due to the plaintiff as district surveyor of the parish of Stoke Newington, Middlesex, for surveying two third-rate houses, erected by the defendant in Grange-road, Green Lanes.

Mr. Wakeling briefly opened the case on behalf of the plaintiff, and produced the notice sent to him by the defendant before the buildings were commenced, dated 24th September, 1851, in accordance with the provisions of section 13 of the Metropolitan Buildings Act (7 & 8 Vict. c. 84), and also called evidence to prove that the requirements of the Act had been duly complied with, an account delivered, and proper receipt tendered.

The defendant did not appear to the summons.

His Honour gave judgment for the plaintiff for the amount claimed, and the costs.

IMPORTANT TO BUILDING SOCIETIES.

IN the Southwark County Court an action was recently brought by an operative named Moore against the trustees of the Rotherhithe Building Society. The sum sought to be recovered was 12*l.* 18s. 2d. and involved an important principle in respect to the expenses of building societies falling upon repudiators or staunch members.

It seemed that Moore had four shares in the above building society, for which he agreed to pay 9½d. a week upon each share. The 12th rule of the society's laws stipulated that members wishing to leave the society might at any time withdraw, after giving three months' notice of such intention, and whatever contributions might be paid in by repudiators should be returned free of any deduction.

Mr. Moore, wishing to withdraw, gave the requisite notices, at the due expiration of which he applied for his deposits in full, but according to his statement he was put off by being informed by the managers of the society there were no funds. The plaintiff farther stated that his object in placing his money in the hands of the society was not with the views of the promoters of building societies in general, viz. to obtain a house at the mere payment of rent for a time being, but to obtain a greater interest for his money than he could get in the savings bank.

Counsel, who appeared for the defendants, urged that Moore, or any member withdrawing, was not entitled to the actual sum paid in; that they were participators in gain or loss equal to non-repudiating members, and should equally bear their portion of expenses incurred in working the society. If this claim were allowed, the trustees of building societies would be placed in a very unenviable position, for they would not be able to deduct expenses from the numerous other members, and it might so happen that a building society might from a panic cause the whole of its members to withdraw, and thus the whole expenses of the society would fall upon the unfortunate trustees. In this case Moore had been tendered 12*l.* and had refused to accept it. Counsel then referred to the 22nd rule of the society, which empowered the directors to deduct from members' shares a percentage for working expenses.

The Judge said he had carefully looked through the rules of the society. According to the 12th rule, retiring members were, in his opinion, entitled to the absolute sum paid in, although the 22nd rule to a certain extent qualified the 12th.—Verdict for plaintiff, with full costs.

Notices of Books.

Temple Bar, the City Golgotha. By a MEMBER of the INNER TEMPLE. Bogue, 86, Fleet-street. 1853.

THIS little sketch is simply of a historical or narrative order, and neither treats of the question of the removal of the bar nor of its architectural pretensions. It is a light and readable narrative of the historical occurrences of a criminal character associated with the present bar, on which the heads and limbs of convicted traitors were at one time stuck as a presumed but not very effectual "terror to evil doers." The narrative is divided into two parts, the first being a sketch of events occurring from the time of the restoration of Charles II. 1660, to the death of Queen Anne, 1714; and the second a continuance of the narrative from the accession of the House of Hanover, 1714, to the 13th year of the reign of George III. 1772. During these intervals of time not a few heads, trunks, and limbs were planted on the top of the present Temple Bar. The first of these was the head of the unfortunate Sir William Armstrong, who was betrayed in Holland, and condemned without trial by the merciless and notorious Jefferies, who shortly afterwards was presented by King Charles with a ring, which was hence called "the blood stone."

The last of these dread and savage trophies was the head of Counsellor Layer, a Jacobite. Though the last, however, that remained on the arch, Layer's head was not the last there planted. It was put up in 1722, and there stood, at the end of a pole, weatherbeaten and blackened, for upwards of thirty years, till a storm of wind threw it down, when it was picked up in the street by an attorney. The last heads planted on the bar were those of Townley and Fletcher, two of those executed, in the butcherly mode of the time, after the battle of Culloden had finally destroyed the Pretender's hopes of replacing the House of Hanover.

The narrative of contingent events which led to these melancholy posthumous exhibitions on Temple Bar is instructive, as showing the futility of such barbarous measures. It is very well told; and is illustrated with a couple of lithographs of the Bar with its grim adjuncts.

The Etymological Compendium; or, Portfolio of Origins, &c. By WILLIAM PULLEYN. Third edition, by M. A. THOMAS. Tegg and Co. 85, Queen-street, Cheapside. London, 1853.

Two large editions of this volume, it is said, have already been sold, and the present has been revised and corrected. The origin of names, inventions, customs, sayings, &c. is an interesting and curious subject of inquiry; and Pulleyn's book is a varied and useful compendium of such origins, many of which, however, we have not the least doubt, though generally received, are quite erroneous. For these, of course, the present author is not responsible.

Miscellanea.

THE BELLS OF ST. CANICE'S CATHEDRAL.—A correspondent has favoured us with a melodious account of the first ringing of the bells at St. Canice's, Kilkenny, recently re-cast at the establishment of Mr. Thomas Hodges, Dublin. It broke out on Monday night, at about ten o'clock. Coming unexpectedly, and in the stillness of the night, the effect was startling. The next day crowds were listening with delight, whilst—

"Toll, toll, with a rapid vibration, with a melody silv'ry and strong,
The Bells from the sound-shaken belfry are singing their first maiden song;
Not now for the dead or the living, or the triumphs of peace or of strife,
But a quick joyous outburst of jubilee, full of their newly-felt life.
Rapid, more rapid the clapper rebounds from the round of the bells—
Far and more far through the valley the intertwined melody swells—
Quivering and broken the atmosphere trembles and twinkles around,
Like the eyes and the hearts of the hearers that glisten and beat to the sound."

They consist of a peal of six bells, the tenor weighing 22 cwt. and the treble about 7 cwt. set in the key of E. The frame-work, wheels, &c. upon which the bells hang, were put up by Messrs. Williams and Sons.

THE SCOTTISH SOCIETY OF ANTIQUARIES.—The last *conversazione* for the season of this society was held last week at Edinburgh, when there was a large attendance of members and friends. Among the objects exhibited were a number of rubbings from ancient sepulchral brasses and incised slabs, British and foreign, and especially from Oxfordshire. The original sepulchral brass of the Regent Murray, removed from St. Giles' Church, Edinburgh, during the "restorations" in 1829, was also exhibited. The society are endeavouring to secure its replacement over the tomb of the regent. Dr. Wilson delivered a brief lecture, partly descriptive of the brasses exhibited, and partly having reference to various suggestive examples of abortive discoveries in ancient art, the brasses furnishing an illustration showing how near the artists who executed them had come towards the art of engraving, and the blocks for printing words, in use among the Chinese prior to the Christian era, and the moveable letters in stamps used by the Romans in the second and third centuries, showing how nearly these nations had approached towards printing from moveable types.

THE PROPOSED FIVE HUNDRED AND EIGHTY NEW CHURCHES.—The new churches proposed by her Majesty's Commissioners to be built will be distributed, we are told, among the several dioceses in the following proportion:—Canterbury, five; York, seventeen; London, fifty-eight; Durham, twenty-six; Winchester, thirty; Bangor, eleven; Bath and Wells, two; Carlisle, six; Chester, twenty-one; Chichester, *nil*; Ely, four; Exeter, twenty; Gloucester and Bristol, twenty-three; Hereford, three; Lichfield, seventy-three; Lincoln, eleven; Llandaff, thirty-five; Manchester, eighty; Norwich, six; Oxford, fourteen; Peterborough, eleven; Ripon, sixty-seven; Rochester, seven; Salisbury, five; St. Asaph, five; St. David's, nineteen; Worcester, twenty-one; Sodor and Man, *nil*.—Total, 580.

PORTABLE HOUSES AND BUILDINGS.—Mr. C. F. Bielefield has filed a provisional specification for a patent for Improvements in constructing Portable Houses and Buildings. According to *The Inventor*, the front, back, and end of a house or building are made up of panels of a rectangular form, framed in wood, and externally covered with iron, plain or corrugated, and by preference galvanised, and on the inside the frames of panels are covered with *papier mâché*, or thick paper, or wood, or other suitable material, the spaces between the inner and outer coverings—excepting so much as is occupied by the framing—being air spaces, which will tend to keep the building warm. The panels go together by means of pilasters grooved to receive them. The parts of the ground plate or framing go together in squares, and fix to each other by screws and nuts. The floor is made in parts of a square form, the boards being fixed to the joists and the ground plate; a frame is notched out to receive the joists. The upright panels enter between the floors and a fillet fixed to this ground plate. The roof is made in rectangular parts by framing or connecting the rafters at top and bottom, so that when the parts of a roof are brought together, and are placed to the proper inclination, they are fixed by screws, and are retained from strutting by means of tie bars or rods. The frames of rafters are externally covered with iron (corrugated or plain), by preference galvanised, and where a horizontal ceiling is not to be used, then on the interior by *papier mâché*, wood, or other suitable material. The ceiling is also made in panels. The partitions are also made in panels, and go together by means of pilasters, in like manner to the ends, front, and back of the building; and in making partitions it is preferred to cover the frames with *papier mâché* on both sides: in this manner may partitions be made for the interior of ships or vessels, but other materials may be employed for covering the framed panels for the portable buildings.

WIDE TENDERS.—I take the liberty of sending you a list of tenders (opened on the 19th ult.), for additions to Great Brick-hill Manor-house, Bucks, for Mr. P. D. P. Duncombe; architect, Mr. E. B. Lamb; quantities not supplied. A CONTRACTOR.

	£	s.	d.
Glenn	1,451	0	0
Wardell and Baker	1,299	4	6
Cooper, H. W.	1,192	0	0
Myers	800	0	0

Tenders for furnishing a villa at Barnes; Mr. Stanham, architect; quantities supplied by architect.

	£	s.	d.
D. Taylor	1,435	0	0
Adamson	897	0	0
Hurst and Chamberlain	863	0	0
Geo. Stredder	833	0	0
Harrison	827	0	0
Thompson	793	16	3
Ward	793	0	0
Brown and Longhurst	749	0	0

REDEEM THE BRIDGES.—I see by your extract from Mr. Bennoch's pamphlet, the cost of Waterloo was 1,000,000*l.* and of Southwark 800,000*l.* Now few, if any, of the original holders of the shares will have them now, and the present holders having purchased at present prices, would be only too glad, I should think, to receive an offer of 3 per cent. for twenty years on the 1,800,000*l.* of the original cost; at the expiration of twenty years, the bridges to be the property of Government, and the payments to cease; so that for a charge of 54,000*l.* per annum for twenty years, an immense benefit would accrue to the people at large. It cannot be urged that this is taxing country for London benefit, for every countryman that crosses from Waterloo station feels the annoyance to his temper by delay, and the tax upon his pocket at the toll-house; and all of us, town and country, know what London-bridge is, and what a national benefit any relief to the traffic would be, were the new street and Southwark-bridge open; it would cause a diversion of, I imagine, fully one-third; and this benefit obtained at so comparatively small a cost, surely must be worthy the notice of our energetic Home Secretary. It is possible much better terms might be made: I am only putting a case for consideration.—J. C. N.

CONTRACTS ON MIDLAND GREAT-WESTERN OF IRELAND RAILWAY.—On Tuesday in week before last, the directors met at their terminus, Broad Stone, to open tenders for the works comprising the extension of their line to Longford and Cavan. The tenders were separate for three lots, viz. from Mullingen to Street 13 miles, from Street to Longford 12 miles, and from near Street to Cavan 26 miles. Many of the competitors tendered for the first lot alone; their tenders, if we are correctly informed, varying from 34,000*l.* to upwards of 70,000*l.* On this lot there were six bridges, some rather expensive; on the second lot there were but two small bridges; and on the third lot nine bridges and a tunnel 153 yards long, to be formed through a hill the bottom of which is gravel, and it is to be lined through with bricks set in Roman cement. The earthworks and bridges are to be formed for a double line, but the ballasting and permanent way are to be prepared for a single line for the present. The tenders were reduced to two, viz. those of Mr. Dargan and Messrs. Killin and Moores, Brothers, and ultimately the former was declared contractor, for the sum of 146,751*l.*,—which was 3,510*l.* above Killin and Moores', the latter being 143,251*l.*

THE SOCIETY OF MECHANICAL ENGINEERS held a general meeting on Wednesday. The following papers were read and discussed:—"On Improved India Rubber Springs, for Railway Engines," by Mr. William G. Craig, of Newport; "On Railway Axle Lubrication," by Mr. W. B. Adams, of London; "On a New Lubricating Material," by Mr. John Lea, of London; "On Cox and Wilson's Portable Single-acting Steam Engine," by Mr. T. J. Chellingworth, of Oldbury; and "On the Mathematical Principles Involved in the Centrifugal Pump" (second paper), by Mr. A. J. Robertson, of London. The last paper was occupied with an investigation into the advantages of the curved, as compared with the straight arm, and with suggestions for farther improvement. Some specimens of stamping at a single blow, from the manufactory of Messrs. Salt and Lloyd, and of ornamenting metals by placing perforated substances between plates during the process of rolling, from the manufactory of Mr. Winfield, were exhibited.

SANITARY CONDITION OF MANCHESTER.—In the course of a lecture at Manchester, on the consequences of defective sanitary regulations, by Mr. David Chadwick, the lecturer quoted a table, showing that in Manchester they had 84 per cent. more deaths from fever, 20 per cent. more from consumption, and 214 per cent. more from convulsions, than at Birmingham. From a return furnished to him by Mr. Geo. Southam, surgeon, he showed that the amount of epidemic disease in the pauper population of Salford had been reduced, in four years, 65 per cent. while the reduction in Pendleton and Pendlebury, in the same period, had only been 46 per cent. In Salford, very active steps had been taken during the last few years to improve the sanitary condition of the towns; whilst in Pendleton and Pendlebury, with the exception of the covering of the black ditch, comparatively no steps had been taken to improve its sanitary condition. It had no supply of water except from pumps; bad, and, in many cases, no drainage, there being now upwards of fifty streets entirely unpaved and unsewered. During the last eight years, in Salford, 105 streets had been paved, flagged, and sewered, at a cost of 40,098*l.*; 88 courts, passages, and places had been paved, flagged, and sewered at a cost of about 10,000*l.* total cost, 50,098*l.*; the whole of which had been paid for by the owners of the property in the streets. The total lineal length of the above streets and courts is 14,882 yards, or upwards of eight miles. There were also in Salford at the present time upwards of 80 streets in course of being paved, flagged, and sewered, or under notice for that purpose. Mr. Chadwick then referred to a map furnished by Mr. Councillor Brownbill, showing the exact locality of 611 cases of cholera and diarrhœa which occurred in Salford in the summer of 1849, the cause of which was undoubtedly the want of proper paving and drainage in all the chief seats of disease. The lecturer also went into a series of calculations, by which he showed that the cost of sickness and death, by disease, in 680 cases, which might be prevented, in the Salford Union, supposing it only possible to reduce the number of deaths from 28 to 20 in 1,000, amounted to 34,170*l.* per annum. This loss was calculating the cost of the sickness, loss of work, and funerals of the 680 cases. By decreasing, therefore, the number of deaths to the extent of 680 annually, it would save to the inhabitants of the Salford Union 34,170*l.*

THE SUBMARINE TELEGRAPH TO HOLLAND.—The work of laying down the electric telegraph from Ipswich to Orfordness, to be connected with the submarine communication thence to Holland, was commenced on Monday in last week. The brow of the first hill on the Woodbridge-road was selected as the starting point of operations. Iron pipes in which the cable will be enclosed are laid at a depth of about two feet from the surface. Between forty and fifty men are engaged upon the work, and nearly a mile is already completed. Earthenware pipes will be employed instead of iron for most of the overland way, the iron being found too expensive.

HOWARD AND THE GAOLS.—At the Parochial Library and Reading-rooms of St. George, Hanover-square, in Old Bond-street, an interesting lecture was given on the 25th ult. by Dr. Guy, of King's College, on "The Life and Character of Howard." The lecturer showed, by various well-selected passages, how completely the reform of our prisons was brought about through the determined zeal and perseverance of this one man, who had not only plodding industry and patience for constantly urging forward such a great work, but also that scientific insight which traces effects to causes, and marks true genius; and which gave to all his varied labours in the cause of humanity that unity of purpose and action which are needed to produce great results. In speaking of gaol fever, once the common scourge of prisons, it was shown that its complete abolition had followed the reforms of Howard; and the lecturer feelingly claimed for the working classes of England, and especially of our great cities, such an exemption from preventible disease and its attendant miseries, as it is in the power of legislative enactments to secure. The rector, Mr. Howarth, then spoke in favour of a movement begun in the parish for improving the dwellings of the poor.

"HEAT WITHOUT FUEL."—Five or six years since we inserted, under this title, in the *Builder*, a sort of semi-serious brochure, by "J. E. D." as to the possibility of evolving heat by friction, so as to produce steam, wherewith an engine might be worked, so as to sustain the friction and the heat, at least for domestic uses, if not also to yield a balance of power, over and above, for marine or other purposes. The idea seems to have been seriously taken up some time ago in a letter addressed to the *Presse* by Dr. Alexander Meyer, a physician, in which he maintained that it would be possible to obtain heat for all the purposes for which fuel is now employed, by means of friction, adding, however, that, not being acquainted with the mechanical means of testing his theory, he merely threw out the idea, in the hope that some competent person would turn his attention to it. He now writes to the *Presse* to announce that he has met with an intelligent and skilful mechanician, M. Beaumont, *who has practically solved the problem*, and that he will soon be able to exhibit to the public an apparatus by which any quantity of heat may be obtained by friction, without fuel of any kind, for the purposes of domestic use, or for the generation of steam for steam-engines.

WHAT IS FAME?—Being the other day on board one of the steamers that ply to Chelsea and back, as we were passing, to use a nautical phrase, right under the "bows" of Westminster's gorgeous palace, a girl asked an elderly woman, her companion, "what that large building was?" the dame, turning sharply round with her back to the Archbishop of Canterbury's residence, and staring at the "seat of the Legislature" right in front, replied *"That's Lambeth Palace: how they're doing on it up!"* Oh, Sir Charles! thought I, what is fame. It is Petrarch who touchingly says—

> "Ahi cicchi, il tanto affaticar che giova!
> Tutti tornate alla gran madre antica,
> E'l nome vostro a pena si ritrova."

But, hang it, here we have not only the name of the living labourer in the field of fame unknown, but the fresh and costly work itself ignored by one of the payers: of a verity, *the people* do require to be educated in art.—A QUILL.

BRISTOLIAN BRICKS.—"To what base uses may we come at last," says the immortal bard; and a proposal which has just been made by Mr. Rooke, the London contractor, would seem to be a practical illustration of the line. That gentleman has, we understand, offered through one of the directors, to pay the Great Western Railway Company the sum of 6,000*l.* "*to convey the ashes of the inhabitants of the ancient city*" to the clay-pits at Drayton, there to be used in the manufacture of *bricks*, thence to be transported to the Australian colonies and elsewhere. "The noble dust of Alexander might have stopped a bung-hole," we are told; but the vestiges of an old Bristol alderman helping to "keep the wind out" of the shed of an Australian digger, is an idea little less utilitarian. The Bristolians used to be always considered good fellows, but Mr. Rooke would make them regular *bricks*. However, we rather suspect the contractor meant the "ashes" of our *fires*, and not of our *sires*. —*Bristol Times*.

TENDERS

For dwellings for 108 families, in Nelson-street, Snow's-fields, Southwark, for the Metropolitan Association for Improving Dwellings of the Industrious Classes. Mr. Henry A. Darbishire, Architect.

Haward and Nixon	£22,890	0	0
Rowland and Evans	21,771	0	0
Smith and Appleford	21,355	0	0
J. and C. Rigby	21,340	0	0
H. and R. Holland	21,198	0	0
Lucas, Brothers	20,800	0	0
T. and W. Piper	20,575	0	0
Locke and Nesham	20,415	0	0
George Myers	20,370	0	0
John Jay	20,329	0	0
Richard Ashby and Sons	19,154	0	0
Samuel Grimsdell (accepted)	18,843	0	0
J. and J. Coleman (withdrawn)	17,995	0	0

For a block of buildings intended to be erected in Lime-street, Liverpool, for E. O. Tuton, esq. Quantities supplied. Mr. Cornelius Sherlock, Architect.

Turness and Kilpin	£6,050	0	0
John Nicol	5,650	0	0
Johnson and Robinson	5,550	0	0
Thomas Gevily	5,230	0	0
J. T. C. Mullin (accepted)	5,118	0	0

For the erection of the New Town Hall and Police Station at Banbury. Mr. E. G. Bruton, architect.

Castle and Son (Oxford)	£3,298	0	0
Young and Co. (ditto)	3,296	0	0
Hope (ditto)	2,982	14	0
Claridge (Banbury)	2,847	0	0
Davis (ditto)	2,840	0	0
Chesterman (Abingdon), accepted	2,586	0	0

TO CORRESPONDENTS.

"*Sandstone*."—A correspondent asks if there be any preparation for rendering sandstone impervious to moisture without discoloration.

"J. P. W." (shall appear), "G. P." "J. M. S." (send list of numbers wanted to Publishing Office), "C. P." "T. A. and Son," "O. C. N." (case has already appeared in our pages), "Mr. D." "A. M." (we decline interference in private matters. The foldings-rests with the newsvender), "Great Warley," "Z." "J. T." "A. G." "G. G." "A Country Parson" (a general answer would mislead), "W. H." (declined with thanks), "C. B." "J. C." (it has several fronts; the *principal* front is that towards the Mall), "A Working Man," "J. S." (we are unable to reply), "W. W. L." "T. C." (if iron were used, *large* columns would be unnecessary), "O. H." (thanks), "Crux," (in type), "Sam." "W. and Son."

ERRATUM.—We are asked to say that the tender of Mr. William Wallace and Son for building the Limerick Markets, was 19,417*l.* and not 16,261*l.*

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" al other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

MONEY LENT ON PERSONAL SECURITY.—From 5*l.* to 200*l.* For two years, one year, or six months.—Repayable by weekly, monthly, or quarterly instalments.—Finsbury Loan Office, 144, St. John-street-road, Clerkenwell. Established 1838 Registered pursuant to sec. 38, 7 & 8 Vict. cap. 110.—Open daily from Nine till Six. No delay

ARCHITECTURE.—YOUNG GENTLEMEN INSTRUCTED in the Principles of Architecture, and carefully taught ARCHITECTURAL and ORNAMENTAL DRAWING, GEOMETRY, and PERSPECTIVE; with the opportunity afforded them of cultivating the French and Italian languages.—Apply to Mr. A. W. HAKEWILL, No. 9, Adelphi-terrace, Strand.

SURVEYING, ARCHITECTURE, Engineering, Levelling, Draining, Draughting, Mapping, Measuring and Valuing of Land, Timber, Buildings, Drawing, Mathematics, &c. TAUGHT on the most approved system in a short course of Practical Lessons, by Messrs. HYDE, SMITH, and LEWIS, Civil Engineers, Architects, Surveyors &c. of extensive practice, who are preparing gentlemen for Surveyors, Architects, Engineers &c. Proficiency guaranteed. Terms very moderate. Steady and clever pupils may be introduced to engagements. For prospectuses, &c. apply at the Offices, 24, Guildford-street, Russell-square, London. Evening instruction given.—"An excellent establishment for surveying, architecture, engineering, &c."—*Magazine of Science.*

TO ARCHITECTS AND OTHERS.

MR. EDWARD L. PARAIRE is desirous of meeting Gentlemen who require COLOURED ARCHITECTURAL DRAWINGS. External, Internal, Isometrical Perspectives got up; outlines of same neatly coloured, with background, on terms that will ensure approval. Temporary assistance given in getting up Plans, Elevations, Sections, Detail, and Working Drawings. Mr. E. L. P. makes a consideration in his charge where competition drawings prove unsuccessful.
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A RESPECTABLE YOUTH will be received as APPRENTICE to an extensive HOUSE-PAINTING Establishment, where he will have the opportunity of learning every branch of the trade. A moderate premium expected.—Address, O. P. O. Victoria Wharf, Regent's-park Basin.

ASSISTANT and PUPIL WANTED in an ARCHITECT'S OFFICE. The former capable of general draughtsmanship, out-door superintendence of works, leveling, surveying, &c.; salary, 50l. The latter an out-door pupil. Apply by letter to S. S. care of Mr. Underwood, Stationer, Nottingham.

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CONSTANT EMPLOYMENT.—WANTED, a respectable young man as PAINTER and GLAZIER, who can make himself useful in the plumbing.—Address, W. F. 8, Quay-street, Guildford.

A SUPERINTENDENT of BUILDINGS WANTED, upon an estate in a most salubrious part of Dorsetshire. He must be practically acquainted with materials and building operations, competent to make out working drawings for cottages and farm buildings, prepare specifications and contracts, superintend their erection, and measure works. He must be intelligent, and of active habits, and his character must bear the strictest scrutiny. He will have a good house and garden rent free, and two guineas per week wages.

WANTED, on the same estate, a PERSON practically acquainted with BRICK-MAKING, to take the management of a brick-yard and kilns. He must be well versed in the treatment of clays, the method of firing, and the various processes of brick and tile manufacture.—Letters to be addressed to S. at Mr. Adams's Newspaper Office, 9, Parliament street, Westminster.

TO BUILDERS' FOREMEN.

WANTED, a FOREMAN, who thoroughly understands his business, to superintend some first-rate houses a few miles from town. References as to ability required, as also the amount of salary.—Apply, by letter only, to Mr. POWELL, near the Church, Surbiton-hill, Kingston, Surrey.

TO SCAGLIOLISTS.

WANTED, a MIXER, who can imitate the various marbles; also a POLISHER. None need apply but those who are fully competent.—Apply at the Office, Scagliola Marble Works, Buckingham street, Fitzroy square.

TO ARCHITECTS' ASSISTANTS.

WANTED, in the Office of an Architect of considerable practice, an ASSISTANT, who is a tolerable draughtsman, and acquainted with the general routine of business. Alacrity so qualified, desirous of improvement, would find the present a valuable opportunity.—Address, stating particulars, J. M. box 263, Post-office, Manchester.

WANTED, a respectable YOUTH, who has served some portion of his time to the Carpentering Business. He must write a good hand, and make himself generally useful.—Address, J. B. C. at Mr. Barnes's, Timber-merchant, Litchfield-street, Soho.

WANTED, in a Builder's Office, a Young Man as CLERK; it is requisite he should be a draughtsman, and competent to keep accounts.—Address, B. J. E. 5, Brook-street, Grosvenor square.

TO ARCHITECTURAL DRAUGHTSMEN.

WANTED, an ASSISTANT, accustomed to the general duties of an Architect's Office.—Apply, post-paid, to Mr. F. BARNES, Architect, Ipswich.

TO BUILDERS' CLERKS.

WANTED, in the country, a Person to SUPERINTEND a Builder's business; he must be thoroughly conversant with all the routine of the office, a correct accountant, and a good fair draughtsman. None need apply who cannot produce an undeniable character.—Address, H. K. Office of "The Builder," 1, York-street, Covent-garden, stating if brought up to the bench, amount of salary required, and age.

TO CARPENTERS, JOINERS, CABINET-MAKERS, &c

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WANTED, to place a Youth, for one or two years, to the Plumbing, Painting, and Graining, as an Improver. Address, W. C. 9, Ashley-terrace, City-road.

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WANTED, a SITUATION as FOREMAN of a BRICK and TILE MANUFACTORY, by a person who has a thorough knowledge of the business in all its branches. Good references given.—Apply to C. D. Office of "The Builder," 1, York street, Covent Garden.

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A BUILDER and SURVEYOR wishes to RECOMMEND a YOUNG MAN to fill a Situation in a Builder or Surveyor's Office, where trust and confidence, with considerable practical knowledge, would be valued.—Apply, by letter, pre-paid, to A. B. 72, Oxford street, Reading.

TO CIVIL ENGINEERS AND OTHERS.

A YOUNG MAN, 22 years of age, who has been engaged in a Civil Engineer's, Architect's, and Surveyor's Office, wishes for an ENGAGEMENT as an ASSISTANT in the above, or any other capacity.—Unexceptionable references can be given. A moderate salary would be accepted, and no objection to the country.—Address, B. H. 31, Thomas street, Grosvenor-square.

APPRENTICE.—WANTED to APPRENTICE (out-door), to a light mechanical trade, a respectable YOUTH, aged 16.—Address, stating nature of employment and premium required, which must be moderate, to E. B. HATHWAY'S Newspaper Office, Royal Exchange.

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AN ASSISTANT, aged 23 years, who has been the last four years with an eminent architect in London, offers his services at a moderate remuneration.—Apply by letter to H. A. C. Mr. Markham's, 11, Gower-street North, London University.

AN ARCHITECT and SURVEYOR, with 200l. at his command, WISHES to ENGAGE His TIME, and capital if required, in connection with some well-established office, or under any nobleman or company having works where his services may be available. None but principals treated with.—Address, G. E. 17, Albert-terrace N tting-hill.

TO BUILDERS.

A MIDDLE-AGED STEADY MAN, who has just vacated a situation which he filled ten years, wishes a RE-ENGAGEMENT as GLASS-CUTTER, GLAZIER, and PAINTER. Specimens of writing and painting may be seen.—Address, T. F. 34, somerset-street, Whitechapel.

TO BUILDERS

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TO ARCHITECTS.

THE Advertiser is desirous of an ENGAGEMENT. Is a good geometrical and perspective draughtsman, and accustomed to the preparation of contract and working drawings, and the general duties of an architect's office. Salary moderate. Satisfactory references can be given.—Address, L. 2, Bank Plain, Norwich.

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A PERSON, with an extensive connection among Contractors and Builders, is desirous of adding to his present business an AGENCY for the SALE of GRANITE. References exchanged.—Apply by letter addressed A. Office of "The Builder," 1, York-street, Covent-garden.

FREEHOLD BUILDING GROUND, of a first-class character.—TO BE LET, a very attractive PIECE of superior LAND, advantageously situate within three miles of the Post-office, with a considerable frontage to the high road, and most admirably adapted for erecting detached or semi-detached villas, which are much needed and constantly sought after. The respectable and healthy character of the locality, and its proximity to the metropolis, make it a very desirable situation.—For particulars apply to Mr. HERBERT TRICKETT, Surveyor and Estate Agent, 15, Chancery-lane, and 23, Paddington-green.

FREEHOLD BUILDING LAND, exempt from tithe and land-tax.—TO BE SOLD, or LET on BUILDING LEASES, about 12 ACRES, in the most healthy part of the county of Surrey, and at a convenient distance from a railway station, having a roadside frontage of about 1,300 feet, and possessing great advantages for a building speculation. Bricks may be obtained at 30s. per 1,000, delivered or made on the land, which contains a quantity of excellent brick-earth, sand, and gravel.—Plans may be seen and particulars known by applying to Mr. JAMES BRAGG, Surveyor, Devonshire Villas, Rotherhithe, Surrey.—N.B. Several eligible plots near the Crystal Palace, to be let for long terms.

FREEHOLD GROUND, BARNET.—TO BE SOLD, by PRIVATE CONTRACT, between 12 and 13 Acres of valuable BUILDING GROUND, having a frontage to the turnpike-road from Whetstone to High Barnet, and within three-quarters of a mile of the East Barnet Station, on the Great Northern Railway. This land is beautifully situated, with a warm and cheerful aspect, commanding fine views, and well adapted for building purposes. Its proximity to the railway station and to the towns of High Barnet and Whetstone, and its easy distance by turnpike-road to all parts of the metropolis, render it worthy the attention of building societies, as well as for private speculation.—For particulars apply at the Office of Mr. THynne, 11, Great George street, Westminster.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money advanced, and bricks may be had, delivered on the site of the intended building, at 30s. per thousand.—For particulars, apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

TO BUILDERS AND OTHERS.

HAMPSTEAD. — BELSIZE-PARK. — TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot near London, approached from the Finchley-road, near the Swiss Cottage, and from the Hampstead-road through the well-known avenue of stately elms, and bounded on the north by Belsize-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr. C. J. RICHARDSON, Architect and Surveyor, 2, Keppell-street, Russell-square.

CLAPHAM-PARK. — FREEHOLD BUILDING LAND TO BE SOLD or LET.—A few plots of FREEHOLD LAND in this healthy and respectable locality. This land is approached by dry, wide, handsome roads and footpaths; has an abundant supply of water and the most perfect drainage, being about four miles from the City; it presents altogether one of the best situations for building in the neighbourhood of London.—For terms inquire of Mr. CLIFTON, on the premises.

TO CAPITALISTS, BUILDERS, AND OTHERS.

WESTON-SUPER-MARE, SOMERSET.—The only FRONTAGE LAND to the SEA remaining unbuilt upon in the town.—TO BE SOLD, the Fee Simple and inheritance of and in ALL those several LOTS of FREEHOLD LAND (in one or more lots), as now marked out for building in an intended NEW SQUARE of about twenty large houses FRONTING AND OPEN ON THE WEST SIDE TO THE ESPLANADE AND THE SEA, OVER WHICH THERE IS AN UNINTERRUPTED VIEW. The square is intended to be 360 feet from north to south, and 250 feet from east to west, and to command a view on the east side with a handsome NEW STREET, about 40 feet wide and between 400 and 500 feet long. This valuable property is bounded on the south by Hewer-street, and on the north by the Hotel-field, and contains altogether nearly four acres of the finest building land. "The finest Building Stone at 1s 8d. per ton; best Lime 22s. per 100 bushels; best Building Bricks 21s. per Thousand, all delivered. The finest Building Sand on the spot, gratis. Timber, Bath Stone, &c. by Sea and Rails into the place, free from all Town and other Dues." These lots may be purchased or held on ground-rents at the option of the purchasers.—Plans and further particulars may be had of the proprietor, S. GUY PHILLIPS, Esq. Weston-super-Mare.

BUILDING GROUND TO BE LET, for a term of forty years, in the BELVIDERE-ROAD, Lambeth, suitable for the erection of a manufactory or workshop requiring good light and space. The ground is about 87 feet by 54 feet, having three frontages, and near the river.—For plan and particulars apply to Messrs. WIGG, POWNALL, and WIGG, No. 7, Bedford-row.

BUILDING LAND.—Some very eligible PLOTS of FREEHOLD BUILDING LAND TO BE LET for ninety-nine years, at low ground rents. Bricks on the ground. Money advanced.—Apply to Mr. RICHARD FIELD, Surveyor, 34, Coleman street, City.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 35, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Countinghouse on each estate.

ORPHAN WORKING-SCHOOL ESTATE, Haverstock hill.—Land-tax redeemed.—To BUILDERS and OTHERS.—TO BE LET, on building leases, for ninety-nine years from Christmas 1853, eligible BUILDING SITES on the above property, for semi-detached villas, rows of house, and shops. The increasing demand in the neighbourhood for the description of house contemplated, renders this a desirable opportunity for parties intending to invest in building property, while the beauty of the situation, adjoining the ornamental grounds of the corporation, offers peculiar attractions to gentlemen who may wish to build residences for themselves. The plans may be viewed, and particulars obtained, by application to the Secretary, at the Office of the Corporation, 25, Ludgate-hill; the Architects, Messrs. PEARCE and ASHDOWN, 23, Charing-cross; or to Messrs. TERRELL and CHAMBERLAIN, Solicitors, 30, Basinghall-street JOSEPH SOUL, Secretary.

April 20th, 1853.

TOLLINGTON PARK.—BUILDING LAND TO BE LET on LEASE, direct from the Freeholder. Term 99 years.—The situation is the best in the park, road and sewer completed, and with a three minutes' walk of the New Church.—For price and particulars, apply at Mr. G. A. YOUNG'S Office, 34, Ladle-street, Red Lion-square

TO BE LET on Lease, a WHARF and PREMISES, at Deptford-green, formerly in the occupation of E. G. Barnard, esq. The premises are extensive, have a large river frontage, and well adapted for the business of ship-building. A plan of the property may be seen, and further particulars obtained upon application at the Architect's Office, Guildhall, London. FERDINAND BRAND, Comptroller of the Bridge House Estates.

BROMPTON ESTATE.—Arrangements having been completed with the Commissioners for the Exhibition of 1851, the remaining portion of this estate is now TO BE LET or BUILDING LEASES. Plans may be seen, and full particulars obtained, at the Office of the Estate, Brompton-park, Old Brompton

PECKHAM.—Lansdowne-road, leading from the Kent-road to Peckham Rye, in a most commanding situation, the CARCASES of THREE PAIR of full size third-rate semi-detached COTTAGES TO BE LET ON LEASE, direct from the Freeholder, or the CARCASES TO BE SOLD, at a very reduced price, subject only to the original ground-rent.—For particulars inquire of Mr. ELI RICHARDS, 98, New Park-street, Southwark.—Would not object to a Builder taking a pair.

TO ARCHITECTS, SURVEYORS, &c

TO BE LET, the GROUND-FLOOR of 66, CONDUIT-STREET (next to Messrs. Cramer's, corner of Regent-street), suitable as offices for the above or for any profession or business requiring a first-rate West-end position.—For terms, &c apply on the Premises.

TO CONTRACTORS, WHARFINGERS, ANCHORSMITHS, AND OTHERS.

TO BE LET, on the north side of the River Thames, near the Regent's canal, and close to the Limehouse and Stepney Stations of the Blackwall Railway, a WHARF, with deep water, extensive frontage, and a powerful crane; also, Two Floors of Warehouses of 132 feet in length,—all now in the occupation of Messrs. Fox, Henderson, and Co.—For particulars, apply to Messrs. C. DOWSON and SON, Bridge Dock, Limehouse.

TO BUILDERS, PAPER-STAINERS, AND OTHERS.

TO BE LET or SOLD, extensive and well-situated PREMISES, near the Caledonian-road, Islington, comprising good dwelling house, with large range of workshops in the rear, yard, cart entrance, and every convenience suitable for the above business, or a Livery-stable-keeper.—Apply to Mr. LEREW, Auctioneer and Valuer, Cardington-street, Hampstead-road, near the Euston station.

BARNES, SURREY.—TO BE LET, on Building Leases, a considerable extent of the frontage next the High road leading from Hammersmith Suspension-bridge to Barnes.—For particulars, apply at the Offices of Messrs. WIGG, POWNALL, and WIGG, 7, Bedford-row.

WANDSWORTH. —TO BE SOLD by PRIVATE CONTRACT, a desirable LEASEHOLD ESTATE, consisting of two substantial and well-finished Semi-detached Houses, having coach-houses, stabling, offices, and gardens, with a parcel of building ground, containing a frontage of 440 feet, with an average depth of 170 feet, at an unexpired term of 83 years, having a lodge and private entrance. One half the money may remain on mortgage, at 4l. per cent. per annum. — Apply to Mr. E. PARSONS, Builder, Wandsworth.

TO CONTRACTORS AND THE BUILDING CONNECTION.

TO BE LET or SOLD, the exclusive right of BURNING BLUE LIAS LIME STONE on the whole of the Manor of Lyme Regis, for a term of six years.—For particulars, apply to Messrs JEFFERD, Plymouth.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 200 feet .... £1 16 6 } In sizes 40 by 30.
" 300 feet .... 2 14 0 } to 43 by 31.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

GLAZING WITHOUT PUTTY!!

The attention of the Public is respectfully invited to the following Testimonials in favour of

NIXON'S IMPROVED METALLIC VENTILATING GARDEN AND SKYLIGHT,

PORTABLE OR FIXTURES.

This method of Glazing and Ventilating can be done at the same prices as ordinary Sliding Sashes, of which T. Nixon has specimens at Kettering, and at the Exhibition, Dublin.

From the Rev. J. WETHERALL, Rushton Rectory.
Rushton, November 20, 1851.

Mr. Nixon,—I have no hesitation in stating that the skylight which you placed on the roof of my house, about sixteen months ago, has never admitted any wet, and has quite answered its purpose in every respect.

From Messrs. WALTERS and SONS, Manufacturers, London and Kettering.
London, November 26, 1851.

Mr. Nixon,—Sir,—The skylight fitted up on your improved principle, appears to answer exceedingly well: it is perfectly weather-tight; and we have much pleasure in bearing testimony to the utility of the invention.

From Mr WM. HENSON, Builder, Kettering.
Kettering, November 27, 1851.

Mr. Nixon, -Sir, -I believe your newly-invented skylight to be upon the very best principle, and would have been a great advantage to the public had it been found out sooner. From the experience I have had of its use, in several buildings I have had in hand, within the last eighteen months, I can with confidence bear testimony to its utility, it having answered its purpose beyond expectation.

From Mr. THOMAS LANCUM, Brewer, Kettering.
Kettering, December 1, 1851.

Mr Nixon,—The skylight you have fixed on my premises, twelve months back, has given me great satisfaction; and I believe it to be the best thing ever introduced.

From Mr. E. EDMUNDS, Rugby.
Rugby, March 23, 1853.

Mr Nixon, -Sir,—The skylight made by you has now been fixed more than twelve months, and I have much pleasure in stating, that I consider it in every way answers the purpose, having remained perfectly secure during the late severe storms; in short, we have all the advantage of a skylight, without the inconvenience of water constantly dropping from the glass, which is always the case in frosty weather with those glazed with putty.

T. NIXON has also an IMPROVED GARDEN HAND-GLASS, which can be Ventilated at pleasure, and may be increased in height by removing the top and fixing two or more frames together.

HAND-GLASS FRAMES.

	12 inches.	15 inches.	18 inches.	21 inches.	24 inches.	
No. 1.—	£1 16 0	£2 8 0	£2 14 0	£3 3 0	£3 12 0	per Dozen,
No. 2.—			£3 12 0	£3 18 0	£4 4 0	ditto.
No. 3.—					£5 8 0	ditto.

Sash Bar, No. 1 .... 5d. per foot run.
Ditto No. 2 .... 6d. per pound.
Ditto No. 3 .... 6d. ditto.

Lights made and glazed complete, 2s. per foot super. Large Lights according to size and quality.

VITRIFIED AND STAINED GLASS-WORK NEATLY EXECUTED. AGENT FOR NIXON'S OIL-STAIN.

AN APPRENTICE WANTED TO THE PLUMBING, GLAZING, AND PAINTING BUSINESSES.

KETTERING, NORTHAMPTONSHIRE.

PATENT and BRITISH PLATE GLASS. JAMES HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff of Prices for the above will be sent on application; they will also, on receipt of particulars, furnish estimates for any description of Glass now manufactured.—Patent Plate, Sheet, Crown, and Ornamental Window Glass Warehouse, 35, Soho-square, London.

FOREIGN SHEET GLASS,
packed in 200-feet Cases, 34s., 36s. and 38s. per case.
Patent Sheet Glass,
in sheets of 48 by 36, 3l. 9s. per crate of 300 feet.
GLASS TILES,
¼ of an inch thick,
packed in cases containing 50— 2l. 5s. per case.
JAMES PHILLIPS AND CO.
116, Bishopsgate-street Without.

TO BUILDERS, PLUMBERS, HOUSE AGENTS, &c.

JAMES MILLS'S BRITISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, CHURCH-STREET, SHOREDITCH, a few minutes' walk from the Eastern Counties Terminus.

J. M. respectfully calls the attention of the trade to his stock of ROUGH PLATE which may be had of the following thicknesses: ⅛, ¼, ⅜, ½, ⅝, ¾, &c., and 1 inch. Also CRATES of C.C. 40s., C.C. 35s., cases 48 by 30 of 200 feet 34s., ditto of 200 feet, 31s., 14 to 16 oz. glass in crates, 2½d. PER FOOT; 16 to 18 oz. in crates, 2¾d. PER FOOT. Sheet lead, pipe, plumbers' brass-work, closets, pumps, basins of every description. White lead, oils, colours. Extensive assortment of PAPER-HANGINGS of the newest patterns always on hand, at prices from 4½d. per 12 yards. SASHES PRIMED in ... and glazed, in any quantity, with promptitude, at very low charges. The full price given for OLD LEAD, or the same taken in EXCHANGE.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 26, SOHO-SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

CRYSTAL GLASS CHANDELIERS for GAS and CANDLES, of the newest and most beautiful design. Messrs. Osler having for many years directed their particular attention to the manufacture of this class of articles, with confidence solicit an inspection of their stock. Purchasers can select from a great variety of patterns to which additions are constantly being made.—44, Oxford-street, London: manufactory, Broad-street, Birmingham. Established 1807.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c.

ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridges, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 123 (having been at first No. 111).

PAN TILES, 52s.; Plain, 35s. per 1,000; superior White and Red Facing Bricks.—Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gas and other shaped Goods, Windsor and Nonsuch Oven Tiles and Bricks, Dutch and English Clinkers, Patent Malt-kiln, and Corn-drying finely perforated Tiles, 12 in and 9 in. Paving ditto, unequalled in quality and colour, at WARD'S old-established Honduras Wharf, Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

BRICKS.—A quantity of good sound Bright Stocks FOR SALE, at a low price.—Apply to Mr. JAMES WINTER, Brentwood, Essex.

TO BE SOLD, 50,000 very superior WHITE FACING BRICKS to be delivered at the King's-cross Station, or any Station on the Great Northern Railway.—For particulars apply to W. BOWACK, 2, Thorn-cottages, Cornwall place, Holloway.

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, and to judge for themselves.

Malm Place, half-washed Stocks, and Place Bricks, also on sale. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing.

Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

N.B. Light coloured pit sand of approved quality constantly on sale upon reasonable terms. This sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded Bricks to any pattern.

COWLEY, KENT, and ESSEX BRICKS; also Yellow and Pale Malm Seconds, Cutters, Paviors, Shippers, &c. &c.

KENTISH RAG STONE of the finest quality, and of the blue tinge so much approved by architects, can now be supplied, at a FURTHER and CONSIDERABLE REDUCTION in PRICE.

Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington Butts.

BRICKS.—TO BE SOLD for cash, SORTED STOCKS, at 35s.; GREY STOCKS, 28s. Apply to Mr GEORGE PEREIRA, Elizabeth place, Brixton-hill. Also a complete set of Brickmaking utensils for one stool. Also some valuable Plots of Ground, for fourth rate buildings, to let for 99 years. Bricks on the ground for 27s. per thousand.

BRICKS.—WANTED, a quantity of sound STOCKS and PLACE: also some HOLLOW BRICKS.—The person who sent samples some time since, may apply again.—Address to Mr. SAMUEL NEWMAN, Granville Estate, Lee, Kent

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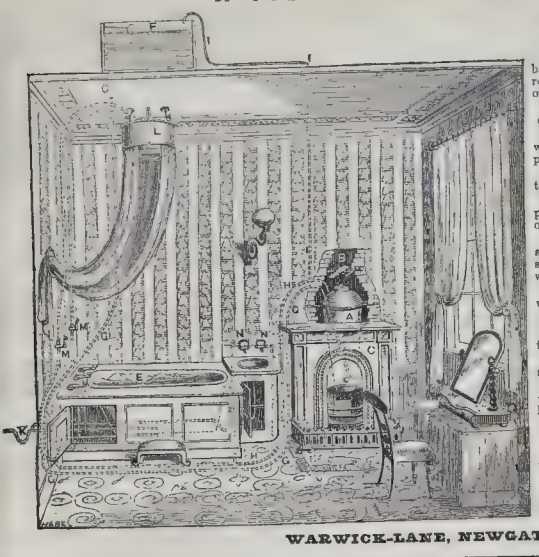
TO BRICKMAKERS.

J. LEACH, BRICKMOULD MAKER, inventor and only manufacturer of the IMPROVED STOCKS, to last a season, with regulating screw plates, brick-bowls, &c. &c.—47, Arlington-street, New North-road, Islington, London. References where they are in use.

300,000 PICKED STOCK BRICKS FOR SALE, of first-rate quality, within a quarter of a mile of the City, 39s. per Thousand. For particulars, inquire of T. BACON, Swan-yard, Shoreditch.

BRICKS, delivered in London, at the Eastern Counties Railway: Best Hard Building Stocks, 31s. to 40s.; Very Superior Hard Place, 20s. to 28s. To be seen near the Romford Station, in a field on the east, adjoining the railway, opposite the factory, Squirrell's-heath.—Address, T. ROSE, Post-office, Squirrell's-heath, near Romford, Essex.

J. TYLOR AND SON'S BATH APPARATUS.



To fix a Bath, the apparatus for heating which can be fixed in the same room, and the luxury of an Open Fire retained.

A. Copper Boiler of sufficient capacity to make a warm bath, clasped by an iron band to support it, and fixed in the breast-work of a chimney. A flue is carried all round, and the draught is regulated by a revolving damper, *B*, which covers the opening into chimney. When set, the Boiler is entirely concealed from view.

This Boiler can be adapted for any chimney, by making it of an oval or elongated orm.

A soot-door is fixed just underneath the damper for the convenience of cleaning, which, however, is rarely required, on account of the great draught round the boiler preventing any deposit of soot.

C. An ordinary stove front with sliding blower for the additional regulation of the draft.

E. Copper or tinned iron Bath, enamelled white marble inside, having three copper pipes, for the hot, cold, and waste water, which are indicated by the engraved levers on the cocks. The overflow is carried into waste-pipe *K*.

F. Cistern for cold water, say 100 gallons, which can be made of tinned iron, or any suitable material, either fitted into a recess or made of a cylindrical shape to stand on the floor of any room above the bath. The overflow can be carried into the waste or other convenient outlet.

G. Inch pipe from cistern to the pipe which goes to the bottom of boiler to fill it with water. A branch from this pipe also supplies the bath with cold water.

H. Inch pipe from the top pipe of boiler, to deliver the hot water into bath.

I. Half-inch pipe taken from the hot pipe *H*, and turned over the top of cistern, to relieve the boiler.

K. Inch or 1¼-inch pipe to take away waste water from bath into soil-pipe or drain, as may be most convenient, and must be well trapped before entering.

L. Round copper or tinned iron Shower Bath, suspended from ceiling, and filled with hot or cold water by branches from the pipes *G* and *H*, the supply being regulated by the two cocks *M M*, which are let in the wall, and have levers fixed on them, engraved, "hot and cold shower."

A thermometer can be fixed in the shower-bath to regulate the temperature.

N N. Wash-hand basin supplied with hot and cold water, by branches from the pipes *G* and *H*, the waste being carried into the overflow of bath.

By this simple arrangement, the boiler is always kept full of water, and cannot, by any means, be emptied by the action of the fire. The draught is so regulated by the blower and damper, that a bath can be made in twenty minutes, or an open fire kept continually alight.

WARWICK-LANE, NEWGATE-STREET, LONDON.

FARM AND COTTAGE PUMPS.

WARNER'S PATENT CAST-IRON

PUMPS, for the use of FARMS, COTTAGES, MANURE TANKS, AND SHALLOW WELLS.

Patent Pump..... £1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing..... 3 0 0

Larger sizes if required.

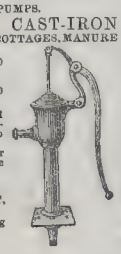
To emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and cheapest pump hitherto introduced.

May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers,

JOHN WARNER AND SONS,
8, CRESCENT, JEWIN-STREET, LONDON.

Every description of Machinery for raising Water, Fire Engines, &c.

The usual allowance to the Trade.

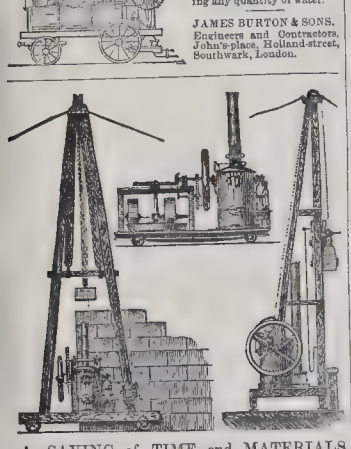


STEAM PUMPING ENGINES.—

PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready, to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c &c.

Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS,
Engineers and Contractors, John's-place, Holland-street, Southwark, London.



A SAVING of TIME and MATERIALS

with solidity of Building.

NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 46, Albert-street, Manchester.

TESTIMONIAL.

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,
"JAS. ABERNETHY.

FOWLER'S IMPROVED FARM and

COTTAGE PUMPS.

To be had of any Ironmonger or Plumber, 1l. 15s.

The usual allowance to the trade.

PUMPS of SUPERIOR CONSTRUCTION bored perfectly true by improved machinery, in various plain and ornamental patterns, for squares and market-places, roads, conservatories, liquid manure, ship, barge, brickmakers, contractors, gold diggers, brewers, chemical works, and in wrought and cast-iron, copper and brass, for hot or cold liquors, &c. &c. Long barrel and hydraulic lift-pumps, with handles on planks; and engines of various powers, for wells of any depth.



PUMPS on HIRE!—The largest stock in England of single and double pumps, from 4 in. to double 12 in. barrels, prepared for hand or steam power, ready for use on reasonable terms, at

BENJ FOWLER'S, Hydraulic Engineer,
Hot-water, Steam and Gas Apparatus Manufacturer, New Factory, Whitefriars-street, Fleet-street.

JOHN WARNER and SONS,

CRESCENT, JEWIN STREET, LONDON,

Galvanized Iron Tub Garden Engine, with Warner's Registered Spreader, is strongly recommended for durability and low price, viz. 3l. 3s.



May be obtained of any Ironmonger or Plumber in Town or Country, or of the Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

TO WATER COMPANIES, BATHS AND WASHHOUSES, BREWERS, DYERS, PALE-ALE BREWERS, &c.

MESSRS. ASHPITEL and WHICHCORD'S

PATENT VALVE, adapted for high-pressure or inequality of temperature. The greater the pressure the more perfect the valve.—Manufactured and sold by THOMAS POTTER, 44, South-Molton-street, London.

TO BUILDERS, LICENSED VICTUALLERS, AND OTHERS.

THE elegant COUNTER BEER-ENGINE,

&c manufactured (on request) by STOCKER BROTHERS, will be sent away on Tuesday, the 10th instant, until which day it may be viewed, on application to STOCKER BROTHERS the only Prize Medalists at the Exhibition of 1851, 3 and 4, Arthur-street, New Oxford-street.

THE PERMANENT WAY COMPANY

beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 300 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to an extent of 300 miles, resulting from a close investigation of its merits recently made by some eminent French Engineers.

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 26, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained, on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

ROYAL ACADEMY of ARTS, Trafalgar-

square.—The EXHIBITION of the ROYAL ACADEMY is now OPEN. Admission (from Eight o'clock till Seven), One Shilling. Catalogue, One Shilling.

JOHN PRESCOTT KNIGHT, R.A. Sec.

THE NEW SOCIETY of PAINTERS in

WATER-COLOURS.—Their NINETEENTH ANNUAL EXHIBITION is NOW OPEN, at the Gallery, 53, Pall-mall. Admission 1s.

JAMES FAHEY, Secretary.

THE AMATEUR EXHIBITION, Pall-mall,

is now OPEN daily, from TEN till DUSK, at the Gallery, No. 121, Pall-mall, opposite the Opera-house Colonnade Admission, 1s.; Catalogue, 6d.

E. C. BECKER, Sec.

Gallery, 121, Pall-mall.

OPENING of the PHOTOGRAPHIC

SCHOOL, ROYAL POLYTECHNIC INSTITUTION.—The spacious plate-glass house, 30 feet by 15, with the class-rooms and ladies' apartment, being completed, Classes or Private Lessons, embracing all branches of Photography, are now forming. A perfect Apparatus with Ross's finest Lenses has been procured, and every new improvement will be added. The School is under the joint direction of T. A. Malone, esq. who has been long connected with Photography, and J. H. Pepper, esq. the Chemist to the Institution. A Prospectus, with terms, may be had at the Institution.

COLOSSEUM, REGENT'S PARK.—

ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half-past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT, every evening from Seven till Ten; Music from Two till Five, and during the evening.

CYCLORAMA, ALBANY-STREET.—

LISBON and EARTHQUAKE.—This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755, is exhibited for a short time in all its original splendour, and by the aid of new machinery, with increased startling effects. Daily at Three; Evening at Eight o'clock.—Admission One Shilling. Children and Schools half-price to either Exhibition.

MR. ALBERT SMITH'S MONT BLANC

every evening at eight o'clock, except Saturday. Stalls, 3s. (which can be secured at the box-office ever day from 11 till 4; area 2s.; gallery, 1s. A Morning Performance every Tuesday and Saturday, at 3 o'clock. A View of the celebrated MER DE GLACE, from Montanvert, has been added to the Illustrations.—Egyptian Hall, Piccadilly.

PELICAN PERMANENT BUILDING

SOCIETY—OFFICES, 23, CLEMENT'S-LANE, enrolled under 6 and 7 Wm. 4, c. 32. Shares 50l., 27l., and 5l. each.

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CONSULTING ACTUARY.—Arthur Scratchley, Esq. M.A.

SOLICITORS.—Messrs. Jenkinson, Sweeting, and Jenkinson, 29, Lombard-street.

BORROWERS will find this Society possesses many advantages, the Tables having been carefully prepared by the Actuary, and each borrower can select his own time for repayment. For further information, Prospectuses, and Shares, apply to the Solicitors, or to Mr RAYMOND, Secretary, 23, Clement's-lane, City. The Subscription Day, the Second Monday in the Month.

ROYAL BRITISH PERMANENT

BUILDING SOCIETY (duly enrolled).

SHARES.

Class 1.—5s; Entrance-fee, 2s.; Subscription, 5s. per month.
Class 2.—25l.; Entrance-fee, 1s.; Subscription, 2s. 6d. do.

The Society will also consist of Paid-up or Deposit Shares of 5l. and 10l. respectively, carrying interest at five per cent. per annum, repayable at fourteen days' notice, and upon which no entrance-fee is charged.

The full amount of shares advanced. No payment of back subscriptions. Loans received from shareholders and non-shareholders, and five per cent. interest allowed. No fines on unadvanced shares. Discount on advanced payments. Law charges fixed. Improved and revised Rules. Prospectus gratis, and Rules 3d. may be had on application at the Society's Offices, 1, Ironmonger-lane, Cheapside.

D. R. WHITE, Manager.

N.B.—Agents wanted for the Metropolitan districts.

HEAL and SON'S ILLUSTRATED

CATALOGUE of BEDSTEADS, sent free by post. It contains designs and prices of upwards of ONE HUNDRED different bedsteads; also of every description of bedding, blankets, and quilts. And their new ware rooms contain an extensive assortment of bed room furniture, furniture chintzes, damasks, and dimities, so as to render their establishment complete for the general furnishing of bed-rooms.

HEAL and SON, Bedstead and Bedding Manufacturers, 196, Tottenham court-road.

AWARDED a PRIZE MEDAL under CLASS XIX. TO THE CARPET TRADE.—ROYAL VICTORIA FELT CARPETING.—The Patent Woollen Cloth Company beg to inform the Trade that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any they have hitherto produced, both in style and manufacture. The public can be supplied at all respectable Carpet-houses in London and the country. The Company deem it necessary to caution the public against parties who are selling an inferior description of goods as a Felted Carpet, which will not bear comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.

The Company's Manufactories are at Elmwood Mills, Leeds; and Bow-bridge-road, London. Wholesale Warehouses at 8, LOVE-LANE, WOOD STREET, CHEAPSIDE.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanence of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations, and is perfectly innocuous and free from the pernicious effects of white-lead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of or duction, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. C. B. MORLEY and CO; and by the Company's Grinding Agents in London, Messrs. CHARLES DEVAUX and CO., who are the agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 3, Tottenham-court, New-road, and 80, Upper Thames-street, London. In Manchester and Liverpool, by Messrs. LAWFORD and CO of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO, Timber-bush. Dry OXIDES and PAINTS, in kegs of 1/2, 3/4, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isle of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that, if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and two equivalents of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent for (most) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is purer white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work intended to be called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames-street.
LIVERPOOL	Mr. Richd. Cooke, 7, Sise-lane.
MANCHESTER	Messrs. Johnson and McGowan.
LEEDS	Mr. James Douglas.
SUNDERLAND	Messrs. T. and E. G. Jepson.
DEVONSHIRE AND CORNWALL	Mr. John Young. Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow
DUBLIN AND SOUTH OF IRELAND	Mr P. Luckey, 91, Middle Abbey-street, Dublin
BELFAST	Messrs. William Stevenson, jun. and Co.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, by its costliness hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of this Paint, with seven gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, as much the best instance, as well as cheapest way taken at competition prices this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.

For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.

A circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Docks).

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c

HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom.

Now supply this innocuous substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).

In 14lb. Kegs, and upwards, from the Depôts of their respective Agents:—

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Messrs. R. SUMNER and CO., Lord-street.
IPSWICH — RIDLEY and GRIMWADE
IRELAND. P. REILLY and SONS, 15, Cope-street, Dublin.

ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent men, of its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard-street, London.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanence, beauty, and economy, destroying all greenish vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 12s. and 24s. each

DAMP WALLS. PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet this year, and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price—1s. per gallon

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 28s. per cwt. or 4d. per stone.

C. BELL and CO. Steam Mills, 3, Wellington street, Goswell-street, London.

BRENT MOOR GRANITE QUARRIES, SOUTH DEVON.—W. TUCKWELL begs to inform Architects, Engineers, and Contractors, that he is prepared to SUPPLY any quantity of GRANITE from the above quarries. Apply to W. TUCKWELL, at the Depôt, Norway-Sufferance-wharf, Greenwich, where a stock for immediate use is always available

Offices in London, No. 3, St. Martin's-place, Trafalgar-square.

TO CONTRACTORS, BUILDERS AND OTHERS.

CHEESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order Specimens of the stone may be seen and prices ascertained, on application to Mr. F. TRESEDDES, 3, Pinners-court, Old Broad-street, London, Agent; or to Mr. J. J. TRATHAN, Manager of the Works, Liskeard, Cornwall.

Notice of the quality may be formed from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue."

By Professor AUSTEN.—"The figures which have produced this noble column have not hitherto been much worked, but are capable of great extension, the magnitude of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

THE PIMLICO SLATE-WORKS.

Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Railway Companies, Builders, and the Public generally.—MAGNUS'S ENAMELLED SLATE notwithstanding the vile imitations and infringements of his patent that are attempted, continues to carry off the palm, being now handsomer, more durable, and very much cheaper than marble.—Price 4d. per foot. Tryings and Jetties, Wine Cellar Fittings, Slabs, and every variety of plain Slate work, at prices that defy competition. 30 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, &c. They keep in stock in large quantities at Freeman's Wharf, Millbank-street, also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

SLATE MANUFACTURE, by STEAM MACHINERY, at BRINDLEY'S OLD ESTABLISHMENT.—Always on hand, a large assortment of useful size SLABS, of various qualities, and an extensive stock of ROOFING SLATES Price lists may be had upon application, or sent by post.—Works and Wharf, Bermondsey-wall, Dockhead.

SLATE QUARRY.—An INVESTMENT.—A Slate Quarry, immediately adjoining one of the most productive quarries in North Wales, of which a lease has been secured, is about to be opened by a private party. It is divided into Sixteen Partly Shares of 500l. each, 100l. to be paid down, and the remainder by four instalments of 100l. at three, six, nine, and twelve months from the date of subscription. A few of the SHARES remain TO BE DISPOSED OF. The quality of the Slate and facilities for working and shipment give undoubted assurance that the quarry will leave a profit of twenty per cent. per annum. The adjoining quarry, which is worked by a private party, pays a much larger dividend.—For particulars apply to Mr. ROBERT FLETCHER, Solicitor, 10, Coleman-street.

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RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

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Great Western Railway Station.... PADDINGTON.
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List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, lower Belgrave-place, Pimlico

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge. Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Perrie Stone; also Bancor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Firestone, &c. sold at the lowest possible prices for Cash Portland Head stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Norfolk Grey Paving Pitch Supplied, always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE. MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

CHEAP STONE.—PAVING, SINKS, STEPS, SILLS, &c.—E and W. STURGE respectfully solicit the attention of Builders and the trade generally to their YORKSHIRE TOOLED PAVING, rubbed and selfered ditto, sinks, sills, steps, and coping, all at very low prices for cash. A list sent free on application.

E. and W. S. have to announce that the great demand for stone and high rate of freight has caused a general advance, but that they have only made such advance in their prices to a small extent. Carriage is cheaper by the various railways and wharfs in London at a small rate per ton.

BRIDGE WHARF, CITY-ROAD, LONDON.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.



FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The wonderful grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially where expedition in execution is required, as in open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.

Another description is made porous, especially for filtering purposes, either of the consistency of mortar, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which, particularly calls the attention of Water Companies.

Specimens may be seen and further particulars obtained at the office,

8, John-street, Adelphi. EDWARD MENDHAM, Sec.

DISSOLUTION of PARTNERSHIP.—HENRY PASK (late Johnson and Pask), Baker-street Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his friends and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.



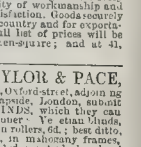


N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET CHANCERY-LANE.

SASH, SHOP FRONT, and DOOR MANUFACTORY, EMERY, Sash, Shop Front, and Door Manufacturer, begs to inform their Customers and the Public that they have removed to more extensive premises as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.





Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation.

By inclosing a postage stamp, a full List of Prices will be returned.

J. BAUGHAN, Sash and Door Manufacturer, and of a Variety of Joinery to the Trade, at prices that defy competition. Sashes made and fitted at 8d. per foot. A large quantity of doors in stock at 8s. each. Estimates given for every description of work, which for superiority of workmanship and material will be found to give the greatest satisfaction. Goods securely packed and forwarded to all parts of the country and for exportation by enclosing a postage-stamp. A full list of prices will be returned.—6, Great Ormond-street, Queen-square; and at 41, Kenton-street, Brunswick-square.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoin Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian Blinds, per square foot, 9d.; best holland blinds, on rollers, 6d.; best ditto, on spring rollers 8d.; large size wire blinds, in mahogany frames, 2s. per yard; cane blinds, in ditto, 1s. 6d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

FISHER and MILLS (late Shop Foremen to Messrs. Lawrence and Sons), JOINERS to the TRADE, 76, York-road, Lambeth. Shop-fronts, fittings, staircases, &c. Well-seasoned materials, and superior workmanship at the lowest possible prices. A quantity of doors and sashes always in stock. By inclosing a postage-stamp, a full list of prices will be returned.

The Builder.

SATURDAY, MAY 14, 1853.

THE Architectural Collection at the Royal Academy this year consists of about 100 designs and drawings, in the "North Room," a large proportion of which are "put away" so effectually, right up to the ceiling, that it is not simply difficult to see them, but impossible. Sir Charles Barry, R.A. exhibits a small model, illustrative of suggestions offered by him to the directors of the New Crystal Palace Company, for modifications of the design of the structure now in course of erection on Sydenham-hill; but with this exception, none of the architects connected with the Academy exhibit. Very few of the leading architects out of the Academy do so either; and it would seem as if, gradually, Architecture were to lose her standing here altogether. Warmly as we have advocated the establishment of "The Architectural Exhibition" out of doors, and anxious as we are that the committee should succeed in obtaining proper rooms and placing it on a permanent footing, we cannot but view with deep regret the want of consideration for our art shown at the Academy, and the consequent disconnection which seems to be taking place. Of this, however, on another occasion. In Sir Charles Barry's model, to which we have referred, a tower, surmounted by a dome, is introduced at the intersection of each of the three transepts; and there are a number of minor turrets, producing a much more striking effect than the arrangement which is being carried out. Several of the designs exhibited have been already illustrated in our pages, as, for example, "The Congregational Chapel at Clapham," by T. C. Tarring (1,100); "The Commercial Building in Gresham-street," by S. Wood (1,167); and "South-west View of Grittleton House, the residence of J. Neeld, esq. M.P." by J. Thomson (1,119). Relative to our engraving of the latter, we may here mention a request sent to us on the part of Mr. Neeld, that we should say, our view and particulars were given without his knowledge. Mr. Neeld seems to fear it may be thought it was "thrust upon the public" at his request. We willingly state, therefore, it was our own doing, and not his.

Amongst the other designs for residences exhibited are (1,101), "Mansion near Dundee," for A. Edward, esq. by Coe and Goodwin; (1,122) "Heronden, Kent," by W. J. Donthorn (with views of the Hall and Lodge); and a large Gothic Mansion, at South Grove, Halifax, by A. Smith, rather gloomily set forth. Mr. Scott shows the Reredos for Ely Cathedral, now in course of execution (1,110), an elaborate and beautiful piece of canopy-work, with groups of figures beneath: some slight colourings are judiciously introduced. Mr. Ashpitel sends a design (1,113) for the Wellington Testimonial proposed to be erected at the south end of London-bridge, and to contain the great clock of the Exhibition of 1851. A low tower of mediæval character holds the clock, and the figure stands beneath a canopy and spire. This is far preferable to the design for a clock-tower here to which we referred some time ago. In conjunction with his partner, the same gentleman exhibits an "Interior View of the Lambeth Swimming Baths," now in course of erection (1,182), the roof of which seems to contain an immense amount of timber. Mr. Allom has one of his effective drawings of Crescent, Terrace, and Gardens, now building, at Notting-hill (1,138); and Mr. T. Bury a clever View of Schools and Schoolhouses for the Trinity District, Weymouth,—to which the amount of light admitted would seem to be somewhat small. 1,124 illustrates the Polychromatic Decoration of Exeter Hall, by H. B. Garling, where the prevailing colours are blue and buff, and the result not very effective in the drawing. We made two attempts to see the room itself when lighted for a concert; but although we stated our purpose, and asked no greater favour from the persons managing the "Harmonic Union" than being allowed to go in on payment of the price set forth on the bills, experienced the want of courtesy which seems to be natural to all the persons connected with this building. As we were not disposed to encourage jobbing by paying a premium at an adjoining shop, we left without seeing the ceiling.

1,129 is a design, by R. Rawlinson, for Wellington Bridge, to replace by five arches the present bridge at Westminster. The designer proposes a double roadway for carriages, with a central colonnade, 12 feet wide, for foot-passengers, over which is a promenade approached by stairs. An architectural character not in accordance with the New Houses of Parliament, is given to it by arcades and triumphal arches at the approaches. There is a drawing, by M. D. Wyatt, of the interior of the Pompeian house now constructing at the Crystal Palace (1,139), which shows the Last Days of Pompeii have not come yet; and E. Falkener seems to further the object in view by contributing a number of careful Pompeian studies (1,130, 1,140, 1,141). The design submitted by Banks and Barry for the proposed Commercial Travellers' School at Pinner Hill (1,149), has four large towers with angle turrets, more warlike than scholastic in appearance. It obtained the third premium. 1,156 shows the interior of the most important and striking reproduction of the Early English style now going on in London, namely, the Catholic Apostolic Church in Gordon-square, by Brandon and Co.: a roof of later character is adopted. In 1,172,—Bridgewater Church, showing the proposed completion of the alterations by rebuilding and remodelling the tower and spire, by W. H. Brakspeare,—the spire would seem to be somewhat of the thinnest.

There is a novelty in 1,186, designed for Victoria-street, London, in accordance with the author's ideas for an improved system of street architecture, and we will let the designer tell his own story:—

> "The ground-floor is proposed to be appropriated to shops and warehouses, a mezzanine story over, and a basement story below, affording accommodation for the resident superintendent. The one-pair story is proposed to be appropriated to offices or shops, for the display and sale of light wares, and is to have a colonnade in front, forming a sheltered promenade (connected at intervals by bridges, which would also be carried across the intersecting streets) for ladies, children, aged persons, or others, who would thus be enabled to make their purchases, and to take air and exercise, in the heart of the busy city, free from the danger, annoyance, bustle, and inconvenience of our present crowded thoroughfares. The upper floors, or flats, are proposed to be formed into suitable dwellings for the industrious classes, who will thus be provided for near the scene of their occupations, from which they are now too often forced by necessary improvements. Each tenement is to be fireproof, and each story is to have separate and distinct means of access."

As the habits of our population alter, as our trade and commerce extend, as our central building frontages become more scarce and valuable, as our leading thoroughfares become more and more crowded and dangerous to traverse, and as our working population ascend in the scale of humanity, the necessity of an alteration in our City street architecture will force itself upon public attention, and will open a legitimate field for the profitable investment of capital, as well as the improvement of architecture. It will require the aid of many minds for its full development, and we recoguise in Mr. Henman one likely to assist.

Resuming our notice of the general collection. The peculiar excellencies that distinguish the "Village Spring" are to be remarked again in a larger, if not more important work, by Mr. Linnell (580), "A Forest Road," which, though a scene comparatively confined in space, has an almost magical appearance of reality from atmospheric effect on relative distances. Mr. Linnell's landscapes lead us to advert to Mr. Creswick's (375) "Happy Spring-time," a study of magnitude and value,—a little too chilly, and too like the season as we have it now, perhaps; but nevertheless to be appreciated highly. By the way, how much we wish it possible to work back to the good old time when summer did not defer its appearance till the autumn!

Mr. F. R. Lee, R.A. numbers amongst his present contributions two, bearing the same title of "The Poacher—scene on a Highland River" (35 and 109), in the former and larger of which he excels himself. Throughout the whole series of his six pictures, he has laboured with results far exceeding in merit those of a few seasons past; in some instances aided by his usual colleague Mr. T. S. Cooper, A. as in 424, "Cattle and Landscape." Mr. Rothwell's (453) "Maternal Solicitude," is like many another of his mothers and children,—very *lakey*, but very lovely. One can but admire the ease with which he gets such rich juicy colour. (463) "My Garden Door," is a curiously careful study by young Mr. Leslie, likely to advance his reputation for manipulative facility.

(469) "Edward IV.'s first interview with Elizabeth Woodville," A. Johnston, displays some exquisite handiwork as far as painting goes,—unfortunately the chief aim of the artist; and having attained a certain dexterity of execution, apparently incompatible with the nobler purposes of the painter, sacrifices story, ideality, and expression to the cherished yet erroneous object. (22) "Melancthon," discovered rocking his child to sleep, as related by D'Aubigné, in his "History of the Reformation," is less amenable to this accusation; for, though artificially interpretated, there is nature and sweetness portrayed in the wife, and superior character in the French traveller expressing admiration and surprise at the domestic occupation of Luther's friend: this deserves the line comparing it with some of its more favoured neighbours.

Mr. H. O'Neil has laboured hard to make the most of (559) "Katherine's Dream." His notions of earthly beauty exceed those with which he has conceived the spiritual portion of the composition. The unfortunate queen and her two attendants would have told the subject better, had they been alone: as it is, they seem all three interested in the vision. Why repeat the action of Griffith in the tapestry? In close proximity to this is (560) "The Incident which led to the Great Reformation,"—Queen Katherine's first discovery of Henry's love for Anne Boleyn,—gracefully rendered by Mr. W. J. Grant.

One of the "lions" of the collection is Mr. J. Philip's (581) "Life among the Gipsies at Seville." Spain, though offering so much material for illustration, has induced very few English "pictorial exponents" to draw on its resources. In these days of peripatetic possibility it seems unaccountable that such an opportunity for comparative novelty should be overlooked. Mr. Philip's acting drama is as strange as welcome; and with such allurements so enticingly set forth, we should not feel surprised to find, next year, at least twelve "Lives among the Gipsies," rivalling each other in gaiety. The scene represents two adventurous explorers, subjected to all kinds of antagonistic trials, bewildered (in spite of an assumed ease on the part of that handsome sprig of nobility) as much by the charms of the black-eyed mischief-loving light-footed Gitana, as the importunities of the old harridan for alms, who, mistrusting the extent of their generosity, makes sure of its amplitude by helping herself to purse and all. We know very well the young scamp who has so early become an appreciator of vinous humidity, and is luxuriating in the last squeeze of the wine-skin, having been introduced to him by Mr. Hurlstone on more than one occasion. Here is subject-matter enough

for three pictures; and the skill with which the whole is grouped and made one, without confusion or "scamping" of parts, testifies to the skill of the painter. The total absence of mannerism lends a charm to its beautiful execution.

There is much poetry in Mr. R. Ansdell's (395) "Sick Lamb:" it is conceived with feeling. Had it been placed to more advantage, its attractiveness would have been enhanced. Mr. A. Solomon has referred, not for the first time, to the *Spectator* for inspiration, and gives a very pleasing embodiment of "Phillis's Dismay at perceiving her Rival, Brunetta, accompanied by a negro Girl in a Petticoat of the Brocade with which Phillis was attired" (470). No one can paint this particular costume better than Mr. Solomon: he goes farther by investing his *dramatis personæ* with personality, period, propriety: they look the individuals of the age; and there is always a piquancy in his ladies which pleases. But why adhere to the same tales often told? Moreover, in the arrangement of part of the present picture he has followed an illustration by Stothard on the same subject more closely than is desirable.

We regard Mr. Anthony's (480) "The Monarch Oak," as a kind of canvas "Juggernaut" crushing dozens; or, like the Minotaur, its existence necessitating the extermination of at least seven worthier presences. It is not to be compared with his capital Fern picture of last year in any respect: it is a great mistake. We must not omit paying our tribute of unqualified praise to the little bit of true nature contributed by Mr. W. H. Hunt (534),—"Our English Coasts, 1852," wherein some sheep are studied with amazing perceptive faculty;—a transcriptive ability, indeed, in delineating nature literally. Mr. Hunt is struggling hard for the palm with Mr. Millais. (508) "Metastasio, when a Child, is discovered by Gravina singing extemporaneous Verses in the Streets of Rome," by Mr. R. McInnes, would have formed an excellent companion to his "Luther listening to one of his Ballads sung by a Beggar," exhibited years ago, had improvement been less rapidly and decidedly manifested. Mr. Tenniel, in (1227) "The Expulsion from Eden," proves himself to be more proficient as a draughtsman than a colorist, and vies with Mr. Armitage, though on a smaller scale, in exhibiting academical knowledge. (514) "The City of Refuge" is the sole contribution of the latter. Mr. W. C. T. Dobson always evinces a turn for the serious; and in (528) "Tobias, with Raphael his guardian Angel," recalls to our recollection, creditably, what has before been effected in Scriptural subjects. Unless of superlative excellence, they usually convey an impression of a former acquaintance: they bear so much resemblance one to another. Mr. J. Sant's "Infant Samuel (507), Speak, thy Servant heareth," most successfully combines fine colour and expression; and in these respects, as well as for its life-likeness, is worthy of being placed by the side of that by Sir Joshua Reynolds. (499) "Dr. Watts visiting some of his little Friends," has afforded matter to Mr. A. Rankley sufficiently interesting to serve as a medium for some vigorous painting: there is, besides, much grace and unaffected simplicity in the figure of the elder child, who is working by the window.

There are some dozen or two of really good pictures, which have such general claims to be noticed and admired, that the least we can do is to call attention to them by enumerating, (114) "The Early Lesson," by Mr. T. Faed,—a perfect *pearl* of a bit,—infinitely superior to his (488) "Sophia and Olivia," from the "Vicar of Wakefield" to our fancy; (257) "The Tax-Gatherer," Mr. G. B. O'Neill; (363) "The Launch," Mr. G. Smith, who makes Mr. Mulready his idol; and (1078) "Boys Snow-balling," Mr. W. H. Knight, as fair samples.

The "Polly Peachum" of Mr. C. Baxter (214), is as delicate a creation as his "Lucy Locket," at Suffolk-street; pert and pretty: they form a pair of fancy portraits to be coveted, and ought not to be separated.

These lead us to consider the real representations, the matter-of-fact portraits of ladies and gentlemen. Unfortunately, it does not fall to the lot of even Sir J. Watson Gordon, R.A. to paint (117) the "Provost of Peterhead," yearly. Being aware of this, he has made the most of opportunity, and the result is one of his finest portraits.

(54) "Dr. Christison, M. D." having all the appearance of being like, is at the same time a work of art.

Mr. J. P. Knight, R.A. has reflected George Dawson, Esq. M.A. faithfully and masterly. And when it is observed that Messrs. Pickersgill, R.A. and F. Grant, R.A. are in full force, ably supported by Messrs. Buckner, Sant, Lucas, Phillips, and others, who have rendered this department one of the most interesting features of the exhibition, it may easily be conceived how satisfactorily they sustain their respective positions.

ON THE CYCLOPEAN WALLS OF GREECE, AND THE ROCK-WALLS OF SCHLESWIG-HOLSTEIN.*

Any one who has given attention to the subject will certainly allow that our rock walls are susceptible of considerable improvement, both in regard to strength and to appearance. This improvement will be directed towards either the horizontal or the polygonal construction. Buildings with most recent improvements exclusively exhibit the former. In this country this is decidedly the more expensive, as our building stones are not laminated, and have not naturally parallel sides, but are separate blocks, which are much more easily hewn into polygonal than into square stones. Hence arises our first axiom for the construction of our rock walls. "We are nowise directed by our material to the horizontal square stone building, but rather to the polygonal form of construction."

A special advantage of the Cyclopean walls consists in the *size of the blocks*. A wall formed entirely of one mass of rock would be the most indestructible. The wall of Tiryns is built on this principle. The stones were taken as large as they could be moved; many are 9, 10, even 11 feet long, and 5 to 6 feet high. Generally there is no material, it must be owned, to be found of this size. Yet we often do wrong in breaking up the large stones, which would very much increase the strength of the wall, into small ones, for the sake of more convenient transport.

Our second general axiom is—"Let the stones remain as large as the means of transport in any place may allow."

In the old Cyclopean walls we find the *face* of the blocks sometimes projecting, according to the original natural roundness of the stone, as in the wall of the Via Appia, and sometimes hewn, so that the whole front presents a perpendicular surface, without projections and sinkings, as in the wall at Mycenæ.

The first kind of construction is, no doubt, the more economical, but the second is to be preferred, so far as there may be any fear of considerable inequalities offering a hold for destructive influences from without, whether of the air, water, man's hands, or particularly of vegetation fixing itself and penetrating into the joints. The first kind has been artificially imitated in the rustic wall, which is to be seen in great perfection in some palaces at Florence, especially in the Palazzo Pitti. Cyclopean walls, with a hewn face, were used even in the architecture of Grecian temples, and a specimen still remains in the temple of Nemesis at Rhamnus, in Attica, which dates from the best time of Grecian art. A wall built in like manner with our many-coloured granite blocks, if it were also polished, would form an appropriate, beautiful, and interesting decoration for the porches of country-seats, and for rooms where coolness is desirable.

For ordinary walls, our axiom is—"The faces are to be hewn to a level, or to be left in their natural condition, so far as they are insured against the hold of damp and vegetation; but they must never be deprived of their natural beauty by colour or lime-wash, as has unfortunately been done in modern times with most of our country churches, and with the beautiful and imposing substruction of the great wing of the castle at Kiel."

The joining of the stone is the most essential point of the polygonal construction. It is well known that the real durability of a brick wall depends upon the mortar, when quite dry, cohering both in itself and with the stone, at least as firmly as the component parts of the brick itself. Any cementing material which is more perishable or more soluble than the stone it has to unite, is generally a bad one. A great advantage of the Cyclopean walls arises from the very circumstance of their requiring no binding material; or, in other words, that the binding material is the stone itself. Full identity, and consequently equal durability, take place. The connection is produced by the close contact of the sides, which touch, and the pressure which the stones exercise on each other.

In the case of perfect vertical pressure throughout the surfaces in contact existing in square stones in isolated walls, and of the entire absence of all disturbance of this pressure, the closer the contact the better the connection; hence the ancients rubbed such square stones and the frustra of the columns against each other, so that the joining became almost imperceptible. But such a mode of proceeding with polygonal walls, especially when used as *revêtements*, is altogether unadvisable, on account of the unnecessary increase of expense. The joint sides are neither to be rubbed, cut, nor sawn, but only to be rough-hewn. It has already been mentioned that the inequalities of the sides, act as indents, which, aided by the heavy weight of the stones, make every movement and displacement of the blocks impossible. This is of more importance, because in *revêtement* walls the pressure of the earth against the inside forces the stones outward; and sometimes for economy, in several of our modern works the joint sides next the face do not form a right angle, but an acute one, so that the least movement increases the tendency of the individual stones to yield forward. In this case the filling the vacuities between the joint sides, inside the wall, should always be done with one stone in each, not with several, which would make the connection still more loose and uncertain. In no case should moss be used to fill up. So perishable a filling in is altogether objected to as a binding material. Even after the wall is finished it should not be used as a pointing to the joints for appearance sake, as it affords space and nourishment to seeds and roots, which might destroy the strongest walls, and the workmen are induced to make the joints bad and imperfect, when they can conceal the defects by the ornament of moss.

We could adduce examples of modern buildings of this kind, in which, within the year, the work had to be jointed anew, one with small stone instead of the bond of moss. Birds had nested in the moss joints. "The joint sides are therefore to be rough-hewn, so that they form as near as may be a right angle with the face of the work, and that side close on side for the whole thickness of the stone. Moss, whether a filling in or for ornament, is to be entirely discarded. In houses, concretion of the walls with cement is allowable as a filling in, not as a binding material, so far as it does not destroy in any point the immediate contact of the stones."

It has already been observed, that in our Duchies, as in every place where rock walls are formed out of erratic blocks, we are directed to the polygonal construction by the natural quality of the materials. Every attempt to produce horizontal lines in the polygonal walls necessarily imposes an expensive constraint in the hewing of the stones. Leaving the principle of only vertical pressure and horizontal surfaces of contact, and looking to the material, we should, both for economy and strength, decidedly prefer the polygonal system thoroughly carried out, so that each stone should have a wedge-shaped place in one or more arches. Generally, the polygonal dressing of the stone gives five-sided or six-sided stones (only the joint-sides are counted); and these, if they are mostly of a medium size, will, almost of themselves, form such an arch-construction, without the aid of the stone-setter. With a very small amount of skill, the workman can carry out this arch-construction intentionally and cleverly, so as to construct an imperishable wall. The ground of this as it were natural tendency of the polygons to arch-construction lies in the wedge figure, which necessarily occurs in every body of more than

* See p. 276, *ante*.

four sides, whose sides and corners are about of a size; and in four-sided bodies, when the angles on the same side are obtuse. A regular pentagon—the name being derived from the shape of the face of the block—contains five wedges, of which two together are every time serviceable; that is to say, a block so formed can lie at the same time in two arches. A hexagon has six wedges, of which the two serviceable each time are immediately increased by one through a slight irregularity of the figure. Hence it is evident that, among the possibly existing polygonal blocks, pentagons and hexagons are sufficient to form a strong polygonal wall, and that it is not necessary to proceed to heptagons; although here and there a heptagon may be as well employed as in other parts of the polygonal wall, a triangle, or even a quadrilateral (as the examples given show), which, moreover, answer to the irregular character of this construction. When, therefore, the expression "regular pentagon" is used, it is not meant that in the polygonal form regularity should be sought after. On the contrary, irregularity, both in the bedding of the whole wall and in the shape of the single blocks, belongs to the essential peculiarity of this construction; for which reason the ancients did not seek to prevent even the sharp angle of one stone from coinciding with the corresponding internal angle of another. Without doubt it is best in this respect to give full play to the Lesbian Canon, working the block accordingly, so far as it must fit into a joint of the wall already prepared; but hewing the other side in *straight* lines that the least material may be lost, by which both time and labour are spared. Such, at least, was the course pursued by the ancient Pelasgi; but here the field is still open for improvement. This kind of construction will, no doubt, be more employed when the use and knowledge of it have become practically known in applying its principles,—not to the unseen portions of churches, castles, and other great buildings, but to the most obvious,—namely, the façades and entrances, executed with our most prized building material. In hydraulic works, close-jointed polygonal *revêtements* will prove the most durable, as the pressure of the earth on the inside meets with much greater resistance to thrusting out any single stone than in walls of squared stone, and the waves on the outside find no gaping joint through which they can penetrate, as often occurs in square stone walls in like situations. At Napa Kiang, in the island of Loo Choo, east of China, Captain Basil Hall met with a bridge constructed of polygonal blocks of stone, of which he has given a view in his work on that island, which Sir William Gell has introduced into his collection already mentioned. Similar examples are not wanting in Greece. Mr. W. Mure gives, in the Monuments to the tenth volume of the Annals of the Archæological Institute, plate 57, the representation of a very beautiful polygonal bridge over a torrent of Mount Taygetos.

The three great advantages of polygonal construction are firmness, economy, and beauty, corresponding to the material. That the polygonal wall can compete with the square stone wall in regard to firmness and economy, we are taught by experience. In our Duchies it is difficult to authenticate even one stone in a rock wall, or in any wall, which has maintained its place more than a thousand years. But in Greece, innumerable walls of this description have the date of antiquity of at least 3,000 years. Neither hostile nor fanatic violence, nor the force of earthquakes, so frequent in that country, have been able to destroy them; while of the later works but little has been preserved, and that principally by the protection of man. Even among the older buildings, among which the square stone construction of regular blocks is to be found, the polygonal construction holds the first rank. For while, for instance, the massy square blocks of the gate of Mycenæ are eaten into by time, and appear thrust out of their place by earthquakes, the polygonal blocks of the ring-wall, of which an example is given, are only pushed by their own weight, and by each movement, more closely together. In fact, nothing is more likely to be the case. For whilst in the square stone wall *only two* sides of each block, the upper and the under, perform their office, that is, are active in the service of the wall, one bearing, the other loading,—in the polygonal wall *all* sides of each stone employed are either loading or bearing; and while in the square stone wall the vertical sides of the blocks are altogether inactive, and no binding together of the adjacent ones takes place, even when a superficial one is necessarily produced by inserted cramps, in the polygonal wall the connecting power entirely penetrates each stone in all directions, so that nothing could be more superfluous than to connect the stones in such a wall by cramps. The perfect polygonal wall consists entirely of intersecting arches.

To be convinced of the greater economy of this mode of construction, we will suppose the case of having to construct a square stone wall with the same material in place of a given polygonal one; for instance, that at Mycenæ. It is plain that the alteration of that wall, in which there are as few hewn stones as possible, into square stones of equal size, would considerably diminish the quantity of available material, while it would increase the outlay for time and labour. But the polygonal wall, while stronger in itself, ensures greater economy, by requiring a less thickness to answer its purpose.

Whoever builds, likes to build not only substantially and economically, but also handsomely. The beauty of a rock-wall differs from that of a brick wall or of a wooden edifice. Many a man who has accustomed himself to look upon every block of rock as ugly, who has painted, or even stuccoed over the most beautiful granite plinth of his own house, and the still more expensive stone of his cornice and window cills, will deny all beauty to the polygonal construction. Others will say the imposing size of the blocks, and the hardness of the stone, harmonise much better with the polygonal shape, remaining in a condition nearest to the natural one, than with the regular quadrilateral, in which the stone appears almost robbed of the worth of its own nature. Moreover, let the solidity and the propriety of the building, be a stipulation and at the same time a cause of its beauty. May time and future buildings teach those who have doubts better. Granted that the beauty of this mode of construction is not to be estimated only by the example adduced. The locality and the destination of the building must decide on the choice of the construction. Yet let no man fancy there is in this country a piece of wall which unites greater beauty with greater solidity than that wall at Mycenæ, whose ancient builders correctly bestowed the greatest care upon that part of the castle wall most visible to the town beneath.

Agamemnon and Ulysses have to thank the Cyclopean walls of Mycenæ and Ithaca that their often-repeated names have not remained unmentioned in the congress of German country proprietors on the shores of the Baltic. The Lion's Gate still stands, from which the former led his host against Troy; the terrace walls still stand, by which the latter ascended to his castle on his return,—the oldest and the most authentic remains of those times. Will no one of the present race be named in the far-off future as the founder of a new Cyclopean construction? The fame were as enduring as the work. The noblest, most imperishable material lies all around, in, and on the soil. Ye have not to bring it from afar, nor from the heights of lofty mountains. Ye have not even to split it for the purpose. Kind nature has done half the work. But hitherto, it seems, ye have not availed yourselves as ye ought of what was offered.

Let no retiring man shrink from the task,—let him, too, who wishes to carry out a construction, handsome and strong in its peculiar nature, surpassing in durability every other kind exposed to like influences,—*build Cyclopean walls of blocks of granite rock, according to the Lesbian canon.* C N O.

THE NATIONAL GALLERY.—I beg, through the medium of your columns, to call the attention of the curators of our National Gallery to picture No. 208 in that collection, merely described as "A landscape with figures," whereas, upon examination, it would appear to represent the handing over of the infant Moses to the Hebrew nurse, immediately after he was found by Pharaoh's daughter in the bulrushes.—T. C.

THE DUBLIN EXHIBITION.

BEFORE our present number comes before the public, the Great Industrial Exhibition of 1853, in Dublin, will have been inaugurated by the Lord Lieutenant. After the ceremony, the Lord Mayor was to receive his Excellency and a distinguished party at a banquet in the Mansion House. Our correspondents speak in high terms of the Exhibition, especially the fine-arts departments, where it differs from the Exhibition of '51, in comprising a very fine collection of British and foreign paintings. Every Royal Academician is represented, we understand; and there is a more complete collection of the works of Belgian artists than has yet been seen, including from King Leopold a portrait of Louis XVII. by G. Wappers; "The Temptation of St. Anthony," by L. Gallait; "St. Elizabeth of Hungary," by N. de Keyser; "The Game," an alehouse scene, by Henry Leys; "Rebecca," by Portaels; "The Interior of a Kitchen," by Van Meur; "The Egg Market at Antwerp," by Bossuet; "Dogs, a Monkey, and a Parrot," by Tschaggeni; "The Young Girl of Venice," by Van Eycken.

We hope to give a view of one of the most striking points in the building next week, with some particulars from personal observation. It will have the effect, we trust, of taking large numbers of visiters to Ireland this summer.

On Wednesday morning a special express train and steamer conveyed Lord Granville and a party of thirty invited visiters to Dublin, under the convoy of Mr. Roney, who had come over during the night expressly for the purpose. The day was a fine one and the journey delicious. The road from Chester to Holyhead, with the river Dee opening into the Irish Sea on one side, and the mountains of North Wales on the other, is one of the most beautiful in the country, and on this occasion, under a bright sun, the mountains here and there tipped and etched with snow, looked peculiarly so. The old castle at Conway, under which the train rushes, types of two ages, stood out against the sky, full of sharp shadows, and the Menai Straits sparkled like eyes at home. The distance from London to Holyhead, 263 miles, was done in six hours and three quarters: the pace through the tubular bridge was terrific.

SCENERY AND THE STAGE.

The Royal Italian Opera House.—As up to this time Mr. Gye has contented himself (and the public) with the repetition of stock operas, we have had nothing to record in the way of novelty. Verdi's "Rigoletto," which is to be produced forthwith, will doubtless give us something to say. Grisi has returned with voice but little different from that of her earlier days, and with powers of acting superior to anything that she had before exhibited. Her performance of "Lucrezia Borgia," created a storm in a house crowded to the ceiling. Ronconi, Mario, Formes, and Tamberlik, are as supereminently admirable as actors as singers, and afford examples which our English singers (when they come) may study with incalculable advantage.

The Princess's Theatre.—"Marco Spada," which has been running here for some time, has a ball-room scene of great magnificence, and an out-door scene, amongst classic ruins in Italy, of great beauty,—both highly creditable to the artists of this establishment. Mr. Kean is reaping the success which his efforts to improve the stage deserve.

The Haymarket Theatre.—Mr. Buckstone has not been lax in his endeavours to gratify the public, a comedy by Mr. Sulivain, "Elopements in High Life," and Mr. Browning's play, "Colombe's Birth-day," having been produced. Neither of them, however, has taken that hold upon the public which, for the sake of the manager, we should desire. Colombe's Birth-day, as a poem, has many beauties, and the heroine is most exquisitely rendered by Miss Helen Faucit, but it wants dramatic interest and variety. Higher power is needed for the chief male character. Mr. Barry Sullivan displays much intelligence and promise, but the part demands something more. The piece eminently deserves a visit, nevertheless, from all lovers of the drama. The "Ascent of Mount Parnassus" is still running most successfully.



WINDOW, TAORMINA, SICILY.

WINDOW FROM TAORMINA, SICILY.

A WINDOW from the Palazzo Corvajo Taormina, was engraved in the *Builder*, vol. iv. p. 216. The present specimen from the same town is not less curious. The string course is inlaid with Etna lava. A. B.

THE DECORATIONS OF THE ROYAL PANOPTICON INSTITUTION, LEICESTER-SQUARE.*

I HAD, from the first, arranged in my own mind to make a bold attempt to put in the chief part of the decoration in positive colours, the effects of which I had studied attentively in Italy and Germany, and I had carefully worked out the whole of the ornaments in strong relief with that view. The section here shown is precisely that exhibited to the building committee, and I confess that when I sent it, I felt much doubt as to the result. They allowed me to try the system experimentally on a large scale, and, when they saw the effect, they not only permitted my plan to be adopted, but allowed me to go to a very much greater extent than I had ventured at first to ask, by giving me the use of gilding. The manner in which this has been carried out will be clearly shown by one of the dome ornaments, which is of the same size as the original, and decorated like it. The plan on which I proceeded was this,—I put in the ground of the dome of a deep blue, beginning with the most intense colour at the bottom, and carrying it up lighter as it approached the top; the projecting faces of the ornaments were put in of a deep red, lightened like the blue, and the relieved edges were left white. This was sufficient to separate the positive colours on the one side, the ornaments being seen in profile, but on the other side the edges were hidden by the perspective, and the positive colours would have been thus seen directly against each other. To obviate this harshness, I had at first left a light margin round the outer edges, but eventually an edging of gold was put all round, and this has quite answered the purpose. This free use of gilding made me apprehensive of producing a gaudy effect; and numerous experiments were made, with a view of testing what comparative amount of gilding would best harmonise with certain proportions of the primary colours:—searched through every work that I could think of, but could find no experiments to demonstrate this. It was clear, for many reasons, that gilding did not take the place of yellow: for instance—if gold leaf be held up against the light, the yellow is lost, and a brilliant green appears. If a layer of gold leaf be driven into glass or paper by a violent electric shock, the gold is resolved into almost its ultimate atoms, nearly disappears, and a purple ground results. The paper here shown has thus been coloured by passing a flash of electricity through gold leaf folded within it. But a more practical proof is given by the effect of the mosaics in the Italian churches; these are commonly of the deepest positive colours, brought out strongly on a gold ground; were this gold exchanged for yellow, there can be no question that the effect would be harsh and gaudy in the highest degree; yet there is none of that effect produced by the gold, which only forms a rich and harmonious background.

Perhaps I may here be allowed a short digression. When I was in Venice, it happened that the mosaics at St. Mark's were being restored. Now, restoration often means in Italy what it often does in England—destroying the good old work and putting in inferior new. During this restoration, I managed to secure several pieces of which the old mosaics were composed, and likewise several of the new, and as such opportunities of comparison are rare, I have put them together for your inspection; and you will at once see how crude and harsh the modern mosaic looks by the side of the ancient. I have also put with them some gold mosaic made by Mr. Stevens, of Pimlico, which is decidedly superior to the modern Italian. I have given specimens to Mr. Powell, the glass manufacturer, who is trying experiments on the old mosaics. In the meanwhile, I would beg you to look at the specimen on the same card above Stevens'—it was made by the professor to the institution, at the first trial and with the first glass that came to hand: I think you will see, even in this rough experiment, that the art of gilding, as done in the old mosaics, is not lost. From what I know of the process, I am satisfied that the next specimen will not be distinguished from the ancient. If a red ornament be put upon a blue ground, the effect is harsh; separate them by a light line and this effect is removed: a gilt edging does the same, but a yellow will not, unless very light. Altogether, it would seem that gilding must be looked upon in the light of a neutral half-tint. To try this experimentally, the most obvious way was to form white light (as nearly as possible) with blue, red, and gold. The proportions usually considered necessary for making white light, which are adopted at the Government School of Design, are taken from Field's work, published in 1835, and are yellow 3, red 5, and blue 8 parts. It was necessary for us to verify these experiments, but our Professor of Natural Philosophy first theoretically arranged the colours, as he believed correctly, and we then most carefully tested them by revolutions on a disc. His theory and the practice agreed almost exactly, but they were both so different from the results given by Field, that we thought that we must have made some error, and tried them repeatedly in various ways, but with the same result. We then thought that the colours used might be impure, but we could not, on trial, find that this was the case. The result was so unexpected that no apparatus had been prepared for more delicate experiments. In the meanwhile, knowing very well the risk that I am running in going against an old opinion, I have no hesitation in saying, that, at all events, with the best colours used in decoration (that is, of most use to us practically), and put on in such purity as to satisfy the eye of a practised experimenter on light, as being as near as could be obtained to the prismatic colours, the harmonious proportions of colours, as shown by their making white light, are nearly red 3, yellow 5, and blue 8, or in 100 parts, red 19, yellow 31, blue 50. These discs being made moveable will show clearly enough the relative proportions, although the tints have been somewhat discoloured. Trying gold in the same way, the discs being in such positions as to allow the gilding to appear bright, the red, gold, and blue neutralized each other in the proportions of 15, 55, and 30; the gold thus taking one-third from the blue, and one-fourth from the red. We then tried them by gas-light. The yellow tint in this light told powerfully, and the red, yellow, and blue were as 12, 42, and 46. The red, gold, and blue as 9, 66, and 25, an immense difference. Now, this would seem clearly to prove that, with ordinary positive colours, at least one-half of the surface by day and two-thirds by gas-light might be gilt without producing a gaudy effect. This agrees very well with the custom of the mediæval artists in making the gold mosaics; with that of the later architects in the magnificent Italian ceilings, and with the practice of the Orientals (those great judges of colour) at the present time, in making a large proportion of the ground or ornament of their woven fabrics of gold. The proportion of the gold stars, &c. in the plain part of the dome is about one-fourth of the blue. In the ornamented parts above and below, the red is 20, the gold 40, and the blue 40. There is also the white relief of the edges of the raised ornaments, and the general mass of colouring may be considered to be red 10, gold 30, blue 60. I had intended to introduce some yellow glass into the skylights, but this could not be done on account of the interference with some photographic effects; and I believe that a very much larger proportion of gilding might be used with increased harmony in the general tone of colouring. A curious effect was observed during the colouring of the dome. Part of it had been done with the best ultramarine. I went into the building when the men were working by gas-light, and the inner ground-glass skylights not being fixed, the clouds were seen through the clear glass. The night was as cloudy, dark, and murky as could well be, yet, seen through the skylights, in comparison with my beautiful ultramarine, this cloudy atmosphere showed a depth of blue so ethereally clear, that the imitation appeared absolutely to be a dirty blueish-grey. This effect was removed when the ground glass was added.

With respect to the other decorations I wish to say that, had I been able at the outset to have managed it, I would have had the iron columns, &c. cast with diaper, or other decorations upon them, and thus have made the

* See p. 291, *ante*.

ornament form an integral part of the structure. As this could not be managed, I was obliged to resort to other means. The upper row of columns was coated with Parian cement, and in order to save time, they were painted twelve hours after the cement was done. It may be useful to mention that, although the painting and the gilding stood very well in most cases, yet the gold size being more delicate than the paint, required, in two or three instances, to be done again. The second row of columns is being coated with a new sort of scagliola, invented by Mr. Keene, the patentee of the well-known cement, who has also made the small lapis-lazuli shafts, which consist of glass cylinders blown very true, the edges being ground, and the inside lined with scagliola. By this means a perfectly glazed surface is produced without any fear of removal. The lowest row is coated with a peculiar description of yellow silvered glass, which I suggested with the idea that it would have a metallic look. I am not quite satisfied with the effect, although I believe that this row of columns has been more admired than any other. It may be useful to mention that at the suggestion of our managing director, the silvered backs were coated with a preparation of red sealing-wax, dissolved in spirits of wine. This formed a firm backing, which enabled the silvered plates to be handled with ease, and made them unaffected by damp. We tried filling in the backs with the liquid Martin's cement, in order to give the plates a solid bed; and the expansion was so trifling that none of the plates were broken. I believe that putty composed of lime and plaster of Paris would also answer.

On the ground-story there is a fountain with a large centre jet and eight disc jets, the top of the basin being flush with the floor. The plan is somewhat unusual, and was suggested to me by a small one that I noticed at the Castello di Ziza at Palermo. The work has been executed in enamelled slate from my drawings by Mr. Magnus, and the glass mosaic enrichments are by Stevens. Both these manufacturers have done their best. The lining round it on the floor will be of marble, principally serpentine, from the quarries at Penzance. The remainder of the ground-floor will be occupied by copies of statues, purchased from Messrs. Bailey, M'Dowell, Marshall, Stephens, Weekes, Theed, Adams, and Lawlor; by a complete series of engineering working machines, sent up in the most liberal way by Messrs. Whitworth of Manchester; and by the largest electrical machine ever made, which will be worked by a steam engine; the glass plate is 10 feet in diameter, that of the largest hitherto made being, I believe, only 7 feet. There will also be a complete laboratory, which, with the apparatus and machinery of all kinds at the command of the institution, will allow almost any experiment to be tried with facility.

In the lining of the walls a good deal of Derbyshire alabaster has been used. I look upon this as a very valuable addition to our decorative materials. It has a beautifully variegated, rich tint, with a fine surface, and (the principal value, in my opinion) it is so moderate in price, that we are not reduced to the thin slices with which we are obliged to be contented in marble, and which so impoverish design. Some alabaster chimney-pieces, designed and executed for the institution by Mr. Cundy, show this advantage very clearly. The glass mostly used has been the enamelled glass, made by Messrs. Chance of Birmingham.

The last point on which I have to trouble you is the lighting. The building will be lighted principally by a very great number of single Argand gas-lamps, suspended at regular intervals under the galleries, so as to form chains of single lights. They are being manufactured partly by Messenger of Birmingham, and partly by Cowan. From the brackets at the ends of the columns chandeliers of three or five lights will be suspended. These are being made by Mr. Brock's machine for cutting woods and metals; and this is so useful an aid in ornamentation that I shall say a few words upon it. I have here some specimens of filling-in work which he is executing for the iron railing of the gallery. It is very strong, being composed of three thicknesses of mahogany, crossed in the grain. The whole of this centre, including gilding, costs only one shilling. Each of the smaller ones costs about fourpence. Were this executed in papier-maché, plaster, or any other composition, I need not say what the extra expense would be. And this machine has the additional advantage that, from its requiring only a drawing to work from, a change of design demands only a new drawing, and not also a new mould.

In the building there are three kinds of gas used, viz. the Western, the London, and the Equitable. As it was very important to discover what damage, if any, would be produced by them on the elaborate colouring of the interior, a series of experiments was made by the Chemical Professor under instructions from the Council. The board that I now show is coloured with a stripe of every variety of the more delicate decorative materials used in the building, viz. gilding, size, distemper, and encaustic in zinc and lead, with varnish and without it. The gases were first applied, one after another, as they came unconsumed from the meter, being let into a box which covered a strip of all the colours, and they were allowed to pass very gradually through a small aperture into the air, twenty cubic feet passing over each stripe in the space of twenty-five hours. The gas was not artificially moistened or dried, and, as you may see, it did not at all injure the colours. The water formed during the combustion of 100 cubic feet was then allowed to remain upon another portion of the colours until it had all evaporated. Scarcely any more effect was produced than would have been by the same quantity of pure water. Each gas was then tested separately to see if it contained any trace of sulphuretted hydrogen, and only the very slightest could be found after three hours testing with acetate of lead. So that I rest quite satisfied with the assurance that the colours of the decoration will take no harm from the gas or its products, and that the quality of gas has been marvellously improved of late—at least in London.

T. HAYTER LEWIS.

CONSTRUCTION OF MODERN DWELLING-HOUSES.

THE remarks of "H. D." on the Construction of Modern Dwelling-houses with sitting-rooms on the basement, are so forcibly true, that in theory the general reader would wonder what advantages the builders or designers can bring forward that would at all compare with the disadvantages. The fault lies, as most faults do, at the very commencement,—the starting with one error leading to the many. In London and its suburbs, all houses of the class under discussion are erected by men (with few exceptions) who have not one farthing of capital, but whose capital is furnished from mortgage loans from the freeholder, who lots out his ground with such limited frontage and depth, that the third sitting-room is an impossibility on the ground story. It must be abandoned or arranged in the basement, unless the light to the windows in the rear is partially blocked, and the size of garden curtailed; the fault starts, therefore, with the overcrowding of the ground. To cure this evil would require a complete public agitation, as the freeholder depends not on the public, but on a limited class of speculative men, who reign for a few months to the world, owners of the property, they build for sale, and then many a timid man, with the fear of being robbed by building, comes forward and buys a house on such a piece of ground that, had he seen it before the house was put on, he would have considered it as hardly large enough to build a shed upon. A builder has no necessity to be the first to supply a want that would increase the cost without returning a remuneration. He knows the people must be housed, and if he makes houses as convenient as they usually are, —puts a smart paper and some graining in the rooms,—he feels assured they will let, and they will sell to pay a percentage. Take a case of a row of six-roomed houses, with gardens in front. Suppose a builder has put in front of the basement sitting-room small areas sufficient to clear the window. But to one house he makes an exception, and makes an area 6 feet wide, and the depth to the bottom, farther, makes the basement story 1 foot higher, and in addition adopts a system of ventilation. On completion he says to a tenant, I ask 30*l.* for this one house, and 28*l.* for the other; he knows that not one applicant in a thousand would pay the 2*l.* additional, so that in reality there is no encouragement for a farther outlay to secure the healthfulness of the house.

CRUX.

THE GENERAL MEETING OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE annual general meeting of the institute was held on Monday evening, the 2nd of May, to receive the report of the council on the state of the property and affairs of the institute, and to elect officers for the ensuing year.

The report showed that the progress of the institute was satisfactory,* and after reviewing the papers read during the year, &c. stated that—

"It is satisfactory to be assured that comprehensive measures are being taken by the different companies, under the sanction of Government, to ensure a supply of water to this metropolis, and that the grand question of conveying away the sewerage without polluting the river, is undergoing such investigation as may be expected to lead to important results; while the determination evinced by the constituted authorities to enforce the closing of intramural graveyards; the erection of fit dwellings for the labouring classes; the formation of public parks; and not least, the intention expressed of erecting numerous additional churches, are satisfactory proofs of progress in a right direction; nor should it be forgotten in this institute that the attention which is now given to improving the dwellings of the poor has received great impetus from the philanthropic endeavours and suggestions of our fellows, Mr. Roberts and Mr. Godwin. * * * * *

It appears that a committee of the House of Commons will be appointed to consider the subject of bridge accommodation for the metropolis generally, while among those contemplated or in progress, mention may be made of the new bridge proposed at Westminster, one in the vicinity of Charing-cross, one near St. Paul's, and the suspension-bridge now in progress at Battersea. Among other improvements reference may be made to the continuation of the street from Cannon-street to the south side of St. Paul's, by which that building will be presented in a novel and highly effective point of view; to the progress made in Victoria-street, Westminster; and to the new Cattle Market in Copenhagen-fields, Camden-town, in lieu of that which has for centuries been held in the very centre of the City; nor should mention be omitted of the buildings designed with apparently somewhat similar views, viz. the Crystal Palace at Sydenham, and the Panopticon of Science, in Leicester-square. The introduction of sculptural decorations into the Mansion House, at the suggestion of our fellow, Mr. Bunning, is a highly gratifying proof of the existence of an increased feeling for fine art in the metropolis. The building erected for the Industrial Exhibition, at Dublin; and the proposed restoration of the church at Doncaster, recently destroyed by fire, may, perhaps, be mentioned as the most remarkable architectural matters occurring at a distance from the metropolis.

The council cannot refrain from alluding with great satisfaction to that portion of the report of the Royal Commissioners which recommends the application of the surplus funds of the Great International Exhibition of 1851 to founding an institution which may serve to increase the means of industrial education, and extend the influence of science and art upon productive industry; nor can they omit to call attention to the opportunities for study which will be offered by the noble collection of casts from the best sculptures at home and abroad now in course of formation in the Crystal Palace at Sydenham, and to the progress which has already been made in the department of Practical Art at Marlborough House, where the sound principles of design and decoration urged by our members, Messrs. Owen Jones and Digby Wyatt, are appreciated, and from which an important document has just emanated in the shape of the first report.

The advantages offered by the Museum of Economic Geology must be too obvious to call for further eulogium in a society of practical architects.

Anxious to obviate complaints respecting the present accommodation, the council have to report that several propositions are now occupying the attention of the commissioners specially appointed to inquire for new premises. The council will be most happy to submit

* The institute now consists of 126 fellows, 19 honorary fellows, 17 honorary members, 86 honorary and corresponding members, and 107 associates.

to the members any feasible proposition which may be offered, by which better accommodation in a more convenient position may be obtained; at the same time they invite the co-operation of all interested in their endeavour to carry out the often expressed wishes of the members."

The council did not omit to acknowledge cordially the punctual and assiduous attention given by the librarian to the duties of his office, and the members in their turn thanked the council and officers.

The bye-law 17, which says, "No member who has filled the office of president for two successive years, shall be again eligible to the same situation until the expiration of one year from the termination of his office," was suspended, and Earl de Grey was re-elected president.

The following is a list of the officers elected for the ensuing year: Vice-presidents—Messrs. W. S. Inman, D. Mocatta, and T. H. Wyatt. Honorary secretaries—Messrs. J. J. Scoles and C. C. Nelson. Ordinary members of council—Messrs. H. Ashton, J. Bell, M.P. G. Godwin, J. H. Good, jun. R. Hesketh, R. C. Hussey, J. T. Knowles, G. Mair, R. W. Mylne, and H. Roberts.

ON THE OPENING OF THE CRYSTAL PALACE ON SUNDAY AFTERNOONS.

In sending you my thoughts, I stand not on the order of sending, but send at once; willingly intrusting them to your guardianship. Whilst I respect your opinion, I stay not to inquire respecting it in the first instance, for I consider the *Builder* to be an impartial host—one who receives his guests, of whatever station, powers, or opinions, upon the same footing;—a fair arena, in short, to which the heralds weekly invite the world, and proclaim the feats of arms; where the knights of the quill are the combatants; you the umpire always, though not unfrequently the *preux chevalier*, enforcing the stringent yet equal laws of polite combat; the audience the nation, since princes, mechanics, and all, read the *Builder*. Viewing, then, the *Builder* in this light,—for in any other it would not be a *Builder*, having nothing solid or substantial about it,—it is that I with puny weapon am encouraged to advance, and mix in the throng of giants, and add my tiny jingle to the sonorous clash and mystic sounds of "jangles" of every kind.

I beg to address you on the absorbing question of Sunday recreation; for "that is the question" involved in the "Crystal Palace" debate, upon the right solution of which problem, I verily believe, the future welfare of this vast community, to some extent, depends.

I thought the question had been rationally set at rest by Lord Derby, but to my surprise find that it is still discussed, and that amongst other strange acts and crude devices in connection with this question, there has been a meeting of "The Young Men's Society," in the City, to petition Parliament to close the region of *wholesome instruction* and *rational amusement* against the hard-worked population of this immense city; on the only leisure day in the week. The strained and artificial manner of observing the Sunday in England has been to me for a long time a matter of painful reflection. Like the window and bread taxes—now happily defunct—this peculiar mode of observing the Sabbath presses most unequally upon the various ranks of the community: the wealthy, with their villas, statue and picture-galleries, music, and conversation, passing a most delightful day of repose; whilst their poorer brethren, who constitute the great majority, are debarred from all such humanising recreation. It is to me a matter of surprise, that persons holding the high office of ministers of the Gospel should take a part in this contest against the public; but some there are who do so. Do the nations of the Continent, Protestant as well as of other denominations, go the less to church because they are enabled to enjoy the contemplation of works of art and science on Sunday? Certainly not. But in this country, not free from cant, the masses being denied the legitimate enjoyments of a day of repose, indulge in gross and demoralising pastimes. Were it proposed to establish on the heights at Sydenham a huge gin-palace, with oceans of "Barclay and Perkins's treble X," "purl," "old Tom," and "cream of the valley," it may be presumed there would be no such strenuous opposition. Nor is it to the "gin-palace" alone that our cruelly-dealt-with mechanics flock on Sunday, but places of still fouler character are crowded on the *holy day*,—made with us, and by us, the least moral of the seven; and this not through any marked depravity on the part of the people, the latter being driven to degrading pastimes through sheer necessity. It cannot be concealed, that on the Sabbath thousands of miscreants reap a harvest through the listless state to which the community with us is condemned. Why does the English mechanic get drunk in England and not on the continent? In order that he may get through the tedium imposed upon his existence in his own country. As the physical appetite becomes sated with sameness of food, so mental activity seeks relief through variety of occupation; and all hard-working men require relaxation, whatever be their station in life. We acknowledge the necessity of the "fly wheel" in "mechanics" to carry the action beyond a certain point, at which, but for this extraneous aid, that action would stop. The same principle holds good in the mechanism of the mind: some constantly recurring stimulant is required to *recruit* and *sustain* its working powers. The hard-worked English mechanic—he who does so much towards establishing British preponderance in the scale of nations—having no means of giving a wholesome change and impulse to his thoughts, flies to beer, and is literally compelled to put an enemy in his mouth to steal away his brains. And this anomalous state of things exists amongst a nation politically free! Can such things be, and not excite our special wonder? It seems that the great problem propounded to man, so far as his earthly career is concerned, is, how to enjoy liberty. We English have political liberty and very limited social enjoyment: I speak of the masses. The nations on the continent, on the contrary, possess—as Pitt remarked to his French acquaintance at Boulogne, on his first visit to France—"more social freedom than they are aware of, though very little political liberty." We, who are free, do all in our power to counteract the blessings of liberty: the enslaved nations of the continent continue, through the means of well-understood social enjoyment, to palliate in no small degree the miseries of tyranny. To the English I would shout, *more social freedom*; to the continent, I would whisper, *more political freedom*; whilst I would implore *all* to petition for the opening of the people's palace at Sydenham on Sunday afternoons.

An Old Boy.

PROVINCIAL NEWS.

Rochester and Chatham.—The houses and property adjoining the western, or Strood side of Rochester bridge, are now in course of demolition, in preparation for cutting the proposed canal or ship-passage to facilitate the construction of the new bridge, which will be commenced so soon as the necessary powers have been obtained.

Brympton.—On Thursday, in week before last, the parish church, dedicated to St. Andrew, was reopened after restoration. It had been newly seated throughout with open oaken benches. The old stone screen has been repaired and cleaned, the chancel laid with figured encaustic tiles, the nave with plain tiles with Hamhill-stone intersections, and a new east window put in by Powell. Mr. Shout was the architect, and Mr. Chick the builder employed.

Taunton.—The restoration of the beautiful tower of St. Mary's, Taunton, is about to be commenced. Mr. Giles, of Taunton, is the local managing architect, and the committee have, at his wish, appointed Mr. Ferrey the consulting architect.

Cardiff.—An extensive addition to the Taff Vale Railway engine-shed here has been just completed. The rapid increase of traffic on this railway, which is said to be one of the best paying lines in the kingdom, has rendered this addition necessary. The contractors were Messrs. James and Price, of Cardiff.

Saltley.—The *Birmingham Gazette* states that the building for the Reformatory Institution for Criminal Boys, at Saltley, is progressing satisfactorily, and in a month or two will be prepared for inmates. The committee of the institution, it is said, have now under consideration measures for establishing a similar asylum for criminal and destitute girls.

Sheffield.—Shares to the extent of 4,000*l.* having been taken for the erection of a large public hall for concerts, &c. and a committee appointed, negotiations are at present in progress for the leasing of an appropriate site.

Huyton, Lancashire.—The new church of St. Bartholomew, Roby, in this parish, was consecrated by the bishop on Tuesday in last week. It has been built by subscription, and endowed both by the Earl of Derby as patron, and by the Rev. Ellis Ashton, vicar of Huyton. The church at present contains sittings for 112 persons only, 58 free; but it has been constructed with a view to enlargement.

Bourn.—A new bridge is to be erected here according to plans and specifications furnished by Mr. Walter, of Cambridge, architect. Four tenders for the contract have been lodged, namely,—

T. Austin, Little Shelford, for.....	£250	0	0
W. Goode, Haslingfield	236	10	0
J. Rowling, Trumpington	215	15	0
J. Harradine, Bourn	160	0	0

The committee virtually agreed to accept Mr. Harradine's tender, though the final decision was postponed, to admit of one or two considerations being entertained, involving expenditure somewhat beyond the funds already raised.

Sale Moor.—At Sale, near Stretford, according to the *Manchester Courier*, the foundation-stone of a new church, about to be erected in the parish of Ashton-upon-Mersey, was laid on Saturday in last week. The site is about half a mile from the railway station at Sale, on the road leading to Northenden. 2,940*l.* have already been obtained, and a contract for the erection, amounting to 2,318*l.* has been entered into. The total expense, including endowment and repair fund, will be 3,900*l.*; so that about 1,000*l.* more will be required. The church, which is dedicated to St. Ann, will be a Gothic edifice, in the Decorated style. The tower is to be placed at the north-west angle of the nave, and will be three stories high. In the first story is the principal entrance to the church. Surmounting the tower will be a light spire, 60 feet high. In the east end will be a four-light, and the west end a five-light window, both filled in with tracery. The sides are to have three and two-light windows. The transepts also will have three-light windows, all filled in with tracery heads. The whole of the church is to be built of stone; that for the dressings and moulded work is to be procured from Lymm, and the wall-stone from the neighbourhood of Penistone. The extreme length of the building will be 100 feet, and the width across the transepts 60 feet. The church will consist of nave, transepts, and chancel; the whole to have open timber roofs. The edifice will accommodate 500 persons; and provision is to be made for warming the building with hot water. The architect is Mr. William Hayley, of Manchester; and the builder is Mr. Robert Neill, also of that city.

Greenheys (Manchester).—A united Presbyterian chapel, with schools built in 1851 attached, has been recently erected here, and was opened on Sunday in last week. The building has been erected by voluntary contributions from a design by Mr. J. E. Gregan, architect. The material is brick, with stone and stock-brick facings. The form is that of the Roman Basilica without the apsis. The chapel is 82 feet long, by 48 feet wide, within the walls. The main entrance, with a vestibule, is in the end next Coupland-street. The ceiling of the central part or nave is a panelled semi-circular vault, the apex of which is 40 feet high from the ground-floor. The building is lighted with gas, and heated by a warm-water apparatus. In the body of the chapel the pews are 3 feet wide from centre to centre, and in the galleries, 1½ in. less. The building is capable of accommodating about 700 persons. The cost of erection is about 2,770*l.* and, with iron palisading to surround it, gas, warming apparatus, &c. will amount to about 3,200*l.* It has been erected by Messrs. Hay, Nish, and M'Kean.

Burnley.—It is in contemplation to repair and restore the parochial church of St. Peter, Burnley, which is the mother church of this chapelry. The insecure state of the roof induced the incumbent and wardens to consult an architect, and Mr. Thompson, of Kendal, after a survey, has pronounced the edifice to be in a very dilapidated and even dangerous state, many of the principal timbers of the roof being much decayed, and unfit to sustain the heavy weight of flag-slates which rests upon them, and which, having lost their bearing, admit the rain and wind into the church, and render it extremely cold and damp. The alterations he considers necessary include the re-construction of the present roof, with new timber and light slates, the lowering of the pillars which divide the nave from the side aisles, and the erection of arches upon them, the erection of clerestory windows to light the nave, and the removal of the organ and choir to a more appropriate position. The estimated sum required will be at least 4,500*l.* towards which subscriptions amounting to 600*l.* have already been promised.

Hessle.—The old parish church of this village, after being altered and improved, was reopened on Saturday before last. The old pews have been removed, and new oaken seats, with low backs of equal height, and fixed with an incline, have been substituted, each facing the pulpit. The western door has been blocked up. The old window on the left side of the gallery has been replaced by a new one, at the expense of Mr. J. R. Pease. One or two of the windows in the north aisle have been renewed. It is calculated that upwards of a hundred additional sittings have been gained by the alterations. An apparatus has been provided for supplying hot water to pipes, which extend under the main aisle and round the church. The estimated cost of the improvements is about 600*l.* The churchwardens have contributed 150*l.* out of the church-repair fund, and 250*l.* more have been raised by voluntary subscriptions.

Newcastle-upon-Tyne.—In respect to the proposed public building in St. Nicholas-square, the recommendation of the Town Improvement Committee has been confirmed; and the first premium of 100*l.* has been awarded to Messrs. Lawson and Heniker, of London, architects; and the second, of 50*l.* to Messrs. Johnson and Knowles, of Newcastle, architects. The two plans selected out of the thirty-three exhibited are said by the local *Courant* to be extremely dissimilar in design, in architectural appearance, and more especially in regard to estimates.——"An elegant pillar," says the *Gateshead Observer*, "has been erected in the Central Railway Station, as a receiving-office. Letters being here deposited, they will be carried 'from pillar to *post*,' and dispersed all over the country. A grateful correspondent suggests that a bust of Rowland Hill be placed upon the pillar, and offers a crown in aid of a subscription to carry out his 'capital' idea."——In addition to the new place of worship of which the foundation-stone was laid on Wednesday, says a recent number of the *Gateshead Observer*, considerable progress has been made in the erection of chapels between Neville and Clayton-streets, in the vicinity of the Central Railway station, for the Presbyterians and the Baptists.

Middlesbro'.—A new chapel, built by the Wesleyan Reformers in Wellington and Brougham streets, was opened on Sunday in last week. The building is from a plan by Mr. Johnson Wortley, and is capable of seating 650 persons. There is a partition near the centre to separate the schools, which number 200 children, from the congregation, and by means of a slide they disappear without the disorder attendant on removing from their seats.

Glasgow.—An attempt has been made to get Government to alter the original plans for the extension and improvement of the City Post-office, which, according to the local *Post*, comprise a money-order office upstairs; but without avail.——Some extensive alterations are about to be made in Ingram-street, one side of which, from Candleriggs to Brunswick-street, is to be pulled down, and extensive warehouses erected by Sir James Campbell, who has just had finished other buildings on the north side of same street.——Messrs. Tennant and Co. have contracted for the erection of another gigantic chimney-stalk at their chemical-works, St. Rollox. The height is to be 300 feet, and the cost of erection will be 1,500*l.* A stalk, 250 feet in height, has recently been completed by the same company at a cost of 1,000*l.* Their great stalk, of 440 feet in height, cost nearly 10,000*l.*——The suspension-bridge, says the local *Gazette*, is approaching completion, and will probably be opened at an early date. Victoria-bridge is also in a forward state, and may be finished during summer. The arches have been covered over with a dense layer of asphalte, intended to prevent the percolation of water through the interstices of the masonry; while the structure is faced with granite from the vicinity of Dublin, which is similar in appearance and quality to that of Aberdeen.

Guernsey.—A parliamentary paper, printed last week, says the *Jersey Times*, contains an estimate of the erection and expense of maintenance of an iron lighthouse on the west end of the island of Guernsey, obtained by the Admiralty from Mr. Alexander Gordon. The expense of constructing the tower is estimated at 5,600*l.*; but, if with a green stone tower, the work would not cost less than 10,000*l.* and could not be finished in less than eighteen months' time.

THE WAGES MOVEMENT.

THIS movement still continues unabated.

At Colchester the carpenters have struck work in consequence of their employers refusing to advance their wages. Others have threatened to follow their example.

The Reading carpenters have mostly struck work on the same ground, and some of them have come to London, as business is here brisk and hands in demand. In some instances, however, the Reading masters have arranged to advance the wages of the best workmen.

At Dartford the brick-makers are out on strike, and two of them, who with others had signed a written contract to work at brick-making for 3s. 8d. a thousand, but struck for 4s. urging as a reason the rise in the price of bricks, have been sentenced to one month's imprisonment for breach of contract. Between 100 and 150 of their fellows were present when the sentence was pronounced.

At the Devonport meeting of masons, lately, when they resolved to respectfully request an advance of 6d. a day, it was stated that the present rate of wages paid in Devonport was 16s. a week, but that, taking the loss of time arising from bad weather, &c. the average wages throughout the year did not in many instances exceed 12s. a week. It was stated also that in Plymouth the rate of wages paid by some masters was 18s. a week, but that the general rate was 17s. There had been a strike lately for 18s. and some of the masters had acceded to the request of the men. The painters at Stonehouse have also met and solicited an advance of 6d. a day. Their present rate of wages is said to be generally 18s. a week.

At Torquay it has been decided to give efficient carpenters and joiners 19s. a week.

The Cardiff carpenters were on strike on Monday, in last week, for an advance of 3s. a week, when they mustered to the number of 136, and paraded the streets, causing no little excitement: there is every prospect, our local correspondent informs us, of both masters and men remaining firm, for some time at least.

The Wolverhampton masons, who threatened to turn out on Monday in last week, unless their wages were increased from 24s. to 27s. a-week, did so, the master builders having objected that the high price of provisions alleged as the reason for an advance was limited to butchers' meat, and that other provisions had fallen in price, and therefore having declined to give the advance demanded, chiefly, however, on the ground that the notice was short, and came at a time when most of the contracts of the season were taken on terms pre-supposing the maintenance of the existing rate of wages. They had offered an advance of 1s. 6d. a week, to commence on 1st June, but these terms the men refused, offering, in their turn, to accept an advance of 2s. on condition that before the employers should attempt a reduction, or the employed ask an increase, three months' notice should be given on either side, and the wages in the winter season to be 24s. The employers refused, and the men turned out. On Monday also, the bricklayers, after about four days' notice, refused to work without an advance of 2s. a-week during the summer months. This demand was also refused by the builders, and the workmen, numbering about 300, assembled in large numbers, and assumed a somewhat intimidating aspect, where a few others were continuing at work. This proceeding caused a slight disturbance, which extended to Bilston. Meetings took place subsequently between the employers and deputations from the masons and bricklayers, which have resulted in the men accepting a rise of 1s. 6d. weekly, to be continued during the summer season; and on the completion of existing contracts, the summer wages to be 26s. and the winter standard, 24s. The masons generally resumed work on Friday, and it is expected that the bricklayers will be also generally employed at an advance of wages. It is anticipated that the masons and bricklayers of the mining district will follow the example of the men at Wolverhampton. A meeting of operative plasterers was convened for Monday last at Wolverhampton, but we have not yet heard the result.

The journeymen carpenters of Leicester turned out last week, for an advance of 6d. a day. The masters offered an advance of 3d. and in some cases 4d. and nearly all the workmen resumed work on these terms.

The stonemasons of Nottingham struck on Monday in last week for an advance of wages. The masters offered them 3d. a day, or 1s. 6d. a week additional: this, however, was refused. In most departments of labour there has been an advance there. The carpenters, week before last, succeeded in effecting a rise of 1s. a week.

The Sheffield plasterers struck on Monday in last week for an advance from 4s. to 4s. 4d. a day, and to commence work on Monday morning at seven o'clock, and leave off on Saturday afternoon at four o'clock, which we are informed has generally been acceded to by the masters.

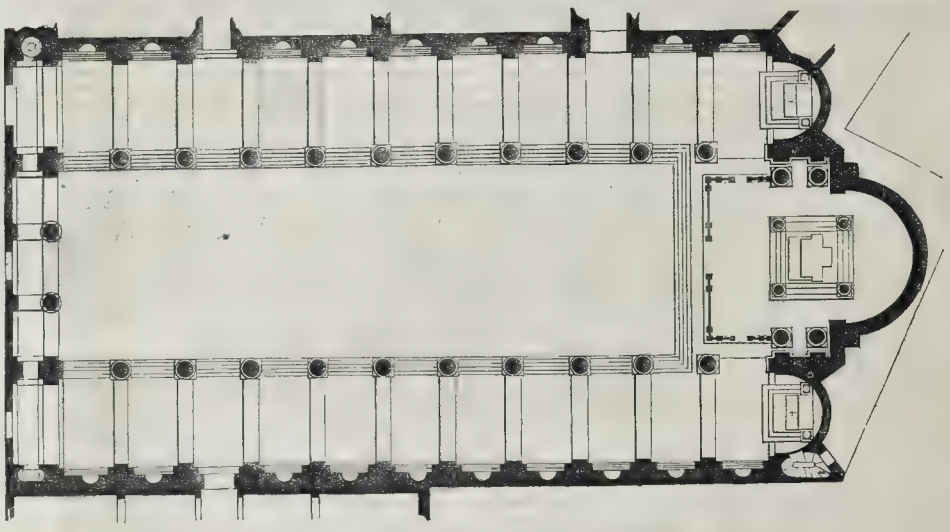
At Birkenhead, about fifty boys, employed in Mr. Laird's yard, struck for increased wages on Monday week, and went home, leaving about 100 men out of work, as they were unable to go on without boys to carry the rivets! On the next morning, however, after a night's reflection, they returned to work. The boys are said to be now earning more money than they ever did in their lives before.

The East Retford joiners, carpenters, and cabinetmakers, who were out on strike, have agreed to the masters' qualified acceptance of their terms,—advancing their wages, but refusing their proposal as to tea interval.

The operative bricklayers of Leeds have just obtained an advance of 6d. a day: their wages are now 27s. a week.

The strike of joiners at Wigan still continues. The masters offer to give an advance of 2s. a week, but refuse to concede the tea half-hour. The men decline to resume work unless the half-hour is granted to them. The plumbers are also on strike, their demand being an advance of 3s. a week, namely, from 21s. to 24s. Two of the employers have agreed to give the sum required. It is probable the strike will soon terminate. The turn-out of brickmakers has not yet ended. The employers have agreed to give the advance asked for, 4d. a thousand; but refuse to lessen the size of the moulds half an inch, as demanded by the men.

The Glasgow house-painters have obtained the consent of their employers to an advance of 12½ per cent. on their present wages—the same to be continued to them till the spring of next year, when, at the desire of both parties, it is intended that the wages for the following year will be arranged by a mutual committee, to meet for that purpose. The contest between the slaters and their employers has been brought to a close, the strike ending in a compromise, by which the men obtain an advance of 1s. a week on their present wages. A movement against the arrestment of wages for debt according to Scottish law, has been got up amongst the tradesmen and masters here. Some difference of opinion on the subject seems to have been expressed at a recent meeting of the promoters of the movement.



PLAN OF ST. PETER'S R.C. CHURCH, LONDON.

ST. PETER'S R. C. CHURCH OF ALL NATIONS, LONDON.

THIS church, long projected, and intended to minister to the religious necessities of the large number of foreign Catholics resident in and constantly hurrying through London, is about to be erected on ground purchased of B. Bond Cabbell, Esq. M.P. in December last, for the sum of 7,500*l*. The site is at the north end of Hatton-garden, between that street and Victoria-street, and will have a better frontage when the city improvements in that neighbourhood take place. As will be seen from the accompanying engraving of the interior, the Basilican form has been chosen for the new building, the dimensions of which will be about 200 feet long by 100 broad. The pillars and the whole of the sanctuary will be of marble, it is proposed: some of the columns, besides two altars of white marble, have arrived from Italy. Above the aisles are galleries and rooms. The roof is to be of iron. Attached to the church will be a large college of priests of all nations, and extensive schools for native and foreign children. The architect is Signor Francesco Gualandi, of Bologna, who will have the assistance of an English architect in carrying out the works. The plan has the sanction of the authorities of the Roman Catholic Church; and subscriptions to defray its expenses are being levied throughout the continent. G. W.

VENTILATION OF WORKSHOPS.

PRINTERS' ROOMS.

FOLLOWING in the well-intentioned remarks of one of your correspondents on this subject, I desire to complete the voids left by him, by some matter-of-fact considerations; and knowing that the *Builder* is read by many employers, I believe that the question may be *ventilated*, and probably the workshops too. In order that I may not occupy too much of your valuable space by a general complaint of workshops, I will confine myself to one class which suffers from the slow poison of bad ventilation.

The daily newspapers are manufactured in as foul dens as can well be constructed. In most of these establishments there are about fifty men employed in each. The room is large, perhaps of moderate height; but the latter consideration is not made an essential one. The men are occupied at their work from about four in the afternoon till five, six, or seven next morning. The evil arises from this cause,—*Gas is burned during the whole of the time.*

Perhaps no men value the introduction of gas more than compositors; but the fearful heat, the foul smells, the stifling atmosphere, and unavoidable ill-health consequent upon it, can be but little known to the employers; or, in justice to them, I think the evil would not exist.

I would not have troubled you with this grievance, unless I thought that you could aid me in suggesting a remedy; and that you may be the better enabled to do so, I will point out the first cause:—It seems never to have entered into the mind of him who constructed or adapted the room where fifty men were to work, that gas would be burned there for more than twelve hours at a time; and therefore the places are totally unfit for the purpose. Now this positive injury is inflicted upon men solely by the ignorance of architects, not at all by the employers, who mostly suffer, in a pecuniary sense, afterwards, by expensive and futile attempts to remedy the defect.

The atmosphere in these rooms is like the blast of a furnace. I repeat, that the evil is with the architect; and no benevolent desire on the part of the employer can properly remedy it.

I wish that architects and builders would *conspire*, so that working men might not be hurried to a premature grave!

A WORKING MAN.

PROFESSOR AYTOUN'S LECTURES ON POETRY AND DRAMATIC LITERATURE.

THE distinguished audience which has been drawn to Willis's Rooms, St. James's, by Professor Aytoun's first two lectures, gives gratifying evidence of the existence of a taste for poetry, which some would deny to the present generation. In his second lecture, on the 9th, the professor contrasted French and English tragedy, with few compliments to the former; described the Epos, or conjunction of events necessary for the Epic poem; and contrasted with great skill and elegance Homer and Virgil. Following with an account of lyrical poetry, he asked "What Song the Syrens sang;" and suggested, with much dry humour, that if our drawing-room syrens (Oh! there be some that we have heard sing!) would but choose songs in their own language, and sing them so that the words could be heard, there would be hopes for the cultivation of lyric poetry amongst us. He closed with a masculine and eloquent view of the conjunction of epical, lyrical, and dramatic poetry at the national games of Greece; the rhapsodist declaiming Homer's immortal verses, Pindar celebrating the deeds of the victors, and a skin-clad band with the thyrsus in their hands, on a covered cart, the germ of the Greek stage.

The third lecture was to be given on (this) Friday, the 13th; the fourth, on the 16th; the fifth, on the 20th; and the last, a review of modern British poetry, on the 24th inst.

CITY THOROUGHFARES.

THE paragraph signed A. Z. in your last week's paper, suggesting the widening of Ludgate-hill, to meet the increased traffic, seems to me wide of the mark.

The new street from London-bridge to St. Paul's is very good as far as it goes, but the great evil of the choke at Ludgate-hill will still exist, and would not be met by widening it. The fact is, there wants another outlet in the direction of Blackfriars-bridge. This may be obtained by continuing the new street where it comes in contact with Bread-street; by widening a small part of Fish-street at the north-east end, the rest being good; widening Little Knightrider-street, on the south side, and so on through Great Knightrider-street, which requires little, if any, alteration; then making a new cut of street diagonally down the hill south of St. Andrew's Wardrobe, through a block of buildings of inferior value, and thus arriving at Earl-street, by which means the traffic from Surrey, over Blackfriars-bridge, eastwards, would be taken away from the narrow gorge of Ludgate-hill.

If this plan were not adopted, another line, from Great and Little Carter-lane, might be formed by widening and rounding effectually such parts of those streets as require it, and the upper and lower parts of St. Andrew's-hill, by which means an easy and already in great part well-formed line would be obtained to Earl-street.

One or both of these improvements would be of great use, at comparatively small expense when compared with the expensive and inefficient plan of altering Ludgate-hill.

Perhaps the City authorities may have one or both of these improvements in contemplation, but, whether or not, they are now submitted to you, as a probable means of encouraging or inducing them to move in a right direction.

A view of the site and an inspection of Horwood's large map would show the comparative facility with which these improvements might be effected.—H. B. H.



ST. PETER'S R.C. CHURCH OF ALL NATIONS, LONDON.—Sig. F. Gualandi, Architect.

NOTES OF WORKS IN IRELAND.

WE are informed that Messrs. John Ryan and Son have been declared contractors for the erection of oat and butter-markets at Limerick, for the sum of 3,200*l.*

The Wesleyan Methodist body in Coleraine purpose erecting a new church similar to that in Donegal-square, Belfast.

The new church at Roses Point, to be built under the auspices of Mr. Cooper, of Markree, is to be commenced this summer. Mr. W. D. Butler (we are told) furnished the designs, and Mr. Caldwell is the contractor.

A local journal states that the contract for the erection of the new pier and breakwater at Galway, according to plans by Mr. Roberts, C.E. (as described by us in a previous number of the *Builder*), has been taken by Mr. Dargan, at 151,000*l.*

The Ecclesiastical Commissioners propose building a church at Ballybunnion, county Kerry; and proposals have been received for it, according to plans by Mr. Welland, architect.

The cost of new graving dock at Dublin is estimated at 40,000*l.* To those familiar with the locality in which it is to be constructed (Ringsend), the accomplishment of this work, which has long been agitated, must appear a desideratum. We have on previous occasions, as yet to no effect, drawn attention to the obstruction offered to the traffic of this neighbourhood by that well-known nuisance, "Ringsend Drawbridge."

The Strand Barracks at Limerick have been purchased by Mr. Burgess, builder, for the purpose of converting them into a large foundry.

A new hotel is to be erected on the lands of Killincarrick, adjacent to the proposed railway station at Delgany, county Wicklow, according to plans by Messrs. Louch, architects.

Messrs. Killen and Moore, Brothers, have contracted for the construction of the Castleblaney line, to be opened to Clones this year, and to Ennis in 1854, for the sum of 235,000*l.*

The Linen-hall at Loughrea is undergoing repairs and alterations.

A district model school is to be erected at Kilkenny, by the Commissioners of National Education. Proposals have been received.

The foundation-stone of a new Roman Catholic church has been laid in the county of Galway, by Rev. John Etheridge.

Lough Corrib drainage-works have been resumed by the Board of Works.

It is proposed to light Killarney with gas, and to flag the new street. The works at the extensive Railway Hotel are progressing.

The plans for the new club-house at Cork have been finally decided upon, and it is said that operations will be forthwith commenced.

The old market cross at Tuam, built in the twelfth century, has been conveyed to the Dublin Exhibition.

A collection of 10,000*l.* is proposed, for the purpose of restoring the Roman Catholic primatical chapel at Armagh.

A sailors' home at Limerick is projected; and some ground, with about 60 feet frontage, in Frederick-street, has been granted for the purpose.

The estimate for enlarging the city gaol amounts to about 6,984*l.*

VAUXHALL BRIDGE.

IN reference to the paper in your Journal of last week, "London Bridges," as Vauxhall Bridge is omitted, perhaps the accompanying dimensions may be useful to your readers.

Vauxhall Bridge was constructed in 1816, Mr. James Walker, iron engineer.

	Feet.
Length between abutments	806
Width of roadway	36
Height of centre archway above high-water mark	27
Ditto, above low water	39
Arches, 9	—
Span of each	78
Eight piers, each of width	13
Waterway	702

OCTAVIUS HANSARD.

HOUSE AGENTS AND BUILDERS.

MARYLEBONE COUNTY COURT.—BRYDEN *v.* LAMB.

THIS action was brought to recover 50*l.* house agency commission upon the sale of one of defendant's houses for 2,300*l.*

Mr. Cook, clerk to plaintiff, stated that a lady called at their "Tyburnia" office respecting houses to let or sell. In consequence of this he saw Mr. Lamb, who gave him authority to let or sell 89, Gloucester-terrace. Their card of terms was given to defendant, which was 5 per cent. up to 100*l.* and 2½ up to 5,000*l.* Had 82, 83, and 88,—houses in the same terrace,—of defendant's, to let or sell.

Mr. Burton, a house agent, said he was formerly clerk to plaintiff. Mr. Lamb said to him upon one occasion, "You may put 88 and 89 on your books with my other houses." In October, 1851, Mr. Roy called at their office, and he gave him a card to view 89. Mr. Roy, through this, became the purchaser.

Cross-examined.—Was introduced to Mr. Lamb by his, defendant's, foreman. The counterfoils now produced were not written at the same time. No. 89 was not written in the book at the same time as the other houses. It was omitted in consequence of business calling him away at the moment.

Mr. Roy stated that plaintiff gave him a number of cards to view houses. He could not say if the house 89 was amongst them. He did not go to view 89 through plaintiff's agency. He went in consequence of what his, witness's, uncle told him. When he saw it Mr. Lamb was occupying it. Could not say distinctly how he came to see Lamb about it Purchased it for 2,300*l.*

By defendant's attorney.—Had known Lamb years before, as a client of theirs. Went over the house, and the adjoining ones, with Mr. Thompson, the architect of the houses. Certainly did not purchase the houses through plaintiff's introduction.

Defendant's solicitor said he was instructed by Mr. Lamb to denounce the claim. His client was an East-India merchant, and had built several houses in Gloucester-terrace, which, saving the one in dispute, he had instructed plaintiff to let or sell. He should show that the defendant never intended to let or dispose of the house 89. He built it for his own occupation, and it was much against the wish of his family he let Mr. Roy have the house. He believed house-agents looked upon builders as the most easy class to be imposed upon, or there would not be so many fictitious claims constantly before the Court.

Mr. Lamb said he fitted up 89 for his own use, and never contemplated letting it. It never was in the hands of any house agent. Never had a bill in the window. It is not true what Burton has stated. Decidedly he never gave any instructions to Burton, or any one else, about the house. Mr. Thompson, the architect, introduced Mr. Roy to him Mr. Roy was desirous of having a billiard-room attached to his house, and the architect showed 89 for that purpose. Is positive he never gave any instructions to plaintiff, or to any one, to dispose of 89.

By Mr. French —No doubt had seen plaintiff's cards. Did not instruct Mr. Thompson to sell or let any of his houses. Did not dispose of the house till after a long negotiation, and then it was much against the wishes of his family. Had uniformly denied Bryden's authority to let the house.

Mr. Thompson was here called, upon which the Judge (Adolphus) said he could not see the necessity of calling the architect. He thought the defendant's evidence irresistible. He thought Mr. Lamb's statement far more likely to be correct than Mr. Burton's. There might very naturally be a mistake upon Burton's part, but unless defendant had perjured himself, there could not be a mistake on his part. Mr. Roy had also confirmed Mr. Lamb's evidence. His judgment would be for the defendant, with costs.

Notices of Books.

The Hand-Book of Mediæval Alphabets and Devices. By HENRY SHAW, F.S.A. London: William Pickering. 1853.

THE object of this work by Mr. Shaw is to give the architect, the decorator, and the student of ornamental design, such a series of examples of alphabets and numerals as may be found practically useful. It contains thirty-six plates, with examples ranging from a tenth century MS. in the British Museum, and a twelfth century copy of "Josephus," down to the sixteenth century, all beautifully and correctly executed. Illuminated drawings, wood-cuts, and monumental brasses are the authorities used.

During the middle ages, and especially in the twelfth century, the lizard was the favourite animal introduced into all kinds of ornamental design.

"When the colouring of these letters was of a simple character, the outlines were usually red, the foliage and figures without colour, but relieved by having the intervening spaces pricked in with various tints. In more highly finished examples, the letter (in its ordinary form) was represented in burnished gold, and the foliage, and other accessories by which it was surrounded and interlaced, formed a mass of the most varied and gorgeous colours, brought into harmony with each other by the admirable taste almost invariably shown in their arrangement. In these specimens, the letter, and the whole of the details, are made distinct by a strong black outline.

A delicate light blue and bright green were generally introduced into the titles and initial letters of the commoner Latin MSS. of this period written in England and France, and continued till the middle of the succeeding century." * * * *

"In the thirteenth century a completely new character was given to illuminated letters. The larger ones, composed chiefly of scroll-work, became more intricate, and lost in minuteness of style and over-elaboration the boldness of character and simplicity of treatment of the preceding age. In the smaller initials, figures were more abundantly employed, and groups, representing the leading facts in the volumes themselves, were frequently given within the circumference of the letters.

The backgrounds are often masses of burnished gold, while the latter is surrounded with the most delicate draperings, foliage, and grotesque monsters.

During the fourteenth century the same (or, if possible, a more elaborate) character continued to pervade illuminated letters and pictures; and to the early part of this century may be attributed the introduction in England and France of large initial letters of purple, red, and gold, containing figures of men and animals, and terminating in spiral scrolls, which extend along the upper and lower margins of the volume, often supporting small groups of single figures of dogs, hares, apes, &c. or the various sports and pastimes of the period."

It was in the early part of the sixteenth century that the highest degree of skill in illumination was arrived at; and at the head of those who practised it stands Jules Clovis. His paintings were chiefly executed for the libraries of Cosmo d' Medici, and the Cardinals Grimani and Farnese. Few specimens have reached this country. "The French, German, and Flemish illuminations, though different in character, were but little behind those of their Italian rivals in point of merit, as may be seen by an examination of the many specimens still existing from the hands of Memling, Lucas Van Leyden, and other celebrated painters; but in England the art of miniature-painting declined from the latter part of the fifteenth century, owing to the general employment of foreigners, chiefly Flemings. Among the finest examples accessible to the public, of works of the fifteenth and sixteenth century, may be mentioned the 'Pliny' in the Douce collection of the Bodleian Library at Oxford" (singularly fine), "and the 'Sforziada' in the British Museum" (from which Mr. Shaw has selected an alphabet) "as specimens of Italian art. The 'Hours of Anne of Brittany,' in the Louvre; the Bedford Missal, the *Roman de la Rose*, &c. in the British Museum, as French; and as German or Flemish, a copy of the Penitential Psalms in the Soane collection, attributed to Lucas Van Leyden; and numerous volumes of an equally high character of art in the Douce series, and in our national museum."

Those who consult the book aright will see that we may use lettering in accordance with the spirit and character of early architecture, which shall yet be perfectly intelligible to the least instructed.

A Manual of the First Principles of Drawing; with the Rudiments of Perspective. By C. H. WEIGALL. London: Reeves and Son, Cheapside. 1853.

THE success of Mr. Weigall, as a teacher of drawing, at the City of London College for Ladies, and elsewhere, gives weight to his precepts. The book is quite rudimentary (as it professes to be): it is clearly written, and illus-

trated, and will be found useful by those who wish to gain an insight into the first principles of drawing.

Miscellanea.

Want of Power for Sanitary Improvement.—The authorities of St. James's parish, Westminster, during the last visitation of cholera in this country, did much good by the employment of an intelligent bricklayer's foreman, who visited and inspected the various houses in the parish, and in numerous instances offered those suggestions which enabled the occupiers themselves (with expressions of gratitude for the information afforded them) to cleanse and trap privies, fill up cesspools, and whitewash and ventilate rooms; or made such report as justified the parish authorities in requiring the removal of many serious nuisances and the purification of dwellings, under the provisions of the Act of Parliament. They accordingly appointed a sanitary committee in December last to consider their power forthwith to appoint some competent person as an inspector of the houses in the parish, so that preparations might be timeously made against the anticipated advent of the Asiatic cholera. This committee communicated with the Central Board of Health on the subject; but they found that so far from having any such power, they were liable to actions of trespass for empowering any one to enter houses for any such purposes. The only power they had must be based on the complaint of two householders, or the certificate of the medical or relieving officer of the parish, stating the existence of any nuisance of which they may chance to become cognizant. Even this advantage the Poor-law Board have strictly prohibited the officers from carrying out to the slightest neglect of their other duties, which, in truth, are onerous enough and invidious enough already. The Sanitary Committee of St. James's, therefore, have printed and published a report, pointing out their powerlessness to do the good they intended, and so to set an example which might have been followed out by other parishes; and they hope, by rendering the present state of the question public, to draw the attention of our legislators and others to it, so that a remedy may be forthwith provided.

The Bristol Society of Architects are reported to have held their annual meeting on the 3rd inst. Mr. P. W. S. Miles in the chair, when prizes for drawings were given to Mr. J. H. Wallis and Mr. J. Cook. The council said in their report:—"An important local competition for architects, viz. that for the Bristol General Hospital in June last, we regret we cannot allude to in terms of satisfaction. The course adopted by the committee in refusing to make public the report of the architect called in to assist in their decision, after the appearance in the public papers of intimation, apparently authentic, that motives unjust to the competitors caused the retention of that report, induced the architects of this society, both competitors and non-competitors, to make a public protest against so unusual a course of procedure, they deeming it a duty to their profession generally to impress upon committees, whenever opportunities occur, that architects, who of necessity devote gratuitously a large amount of time and talent in the preparation of designs, have a right to expect decisions so open and straightforward that no single competitor can have cause for complaint." The receipts for the year were 87*l.* 17s. 7d.; the expenditure, 82*l.* 16s. 4d.

Liverpool Architectural Society.—The annual general meeting of this society was held on Wednesday evening in last week, at the Royal Institution, Mr. Verelst in the chair. The paper read was on "The Application and Treatment of Porticoes in modern Buildings," by Mr. W. H. Leeds. The students' designs were exhibited, and the first-class prize was awarded to Mr. F. H. Price, and the second to Mr. A. Jevons. The president then reviewed their proceedings during the last session, and congratulated the members on the satisfactory progress of the society. Mr. Forrest then read a paper on photography, after which the proceedings of the session were closed, and the meetings of the society were adjourned until October.

Moore Testimonial, Dublin.—The committee appointed to arrange for the erection of a monument to Moore, the poet, are of opinion that in the present progressive state of the subscriptions, it would be premature to decide upon the precise design or expense of the pedestal on which the statue should be erected: in proportion to the amount of the funds ultimately available, the pedestal might be of a simple or a highly ornate character. It appears, however, that the committee are in a position to adopt a design for the statue, and it has accordingly been determined to invite the sculptors of the United Kingdom, by public advertisement, to send in models.

Lectures on Drawing.—Four lectures on some of the principles which are essential to correct drawing, illustrated by various models, are being delivered, more especially to the industrial classes, by Henry Twining, Esq. at the Freemasons' Tavern, Great Queen-street. The third will be given on Thursday, 19th May, and will treat of the more advanced problems required for correct representation, and the influence which the judgment is permitted to exercise with regard to perspective. The payment is merely nominal.

The Iron Trade.—The speculators, as was to be expected, are now beginning to be caught in their own snares. "A reverend divine of great wealth," it is said, "who had contributed largely to the combination, has been rendered pennyless." Another very large speculative holder of iron, indeed the ringleader of the combination, is reported to have failed, with liabilities amounting, some say, to half a million, and the immense accumulation of produce which he and others are supposed to have locked up, will ere long deluge the market. Some of it, fortunately, however, only exists on paper. Even the most noted, and (at one time at least) fortunate of all the speculators of this money-making era, is reported to have burnt his fingers in the iron furnaces to such an extent, that 50,000*l.* have slipped through them, which even he could not catch again before they fell. The result is already manifesting itself in the midland districts in complaints, by the stanchest upholders of the speculative prices, of shaken confidence—present slackness—diminished demand—further concessions, &c. These are, of course, attributed to the "ill-advised policy" of the recent reductions, whereas the "ill-advised policy" of reckless speculation ought to bear the brunt of these its own mischiefs, and of more to come.

Paris.—The tomb of Napoleon the Great, in the dome of the Hôtel des Invalides, is now nearly completed. It has been executed by M. Visconti, the architect, and is embellished with statues and basreliefs by Pradier and other noted sculptors. It is in porphyry and marble, and is a magnificent structure. It has cost not less than 240,000*l.* and has taken twelve years to complete. According to the *Literary Gazette*, now that it is finished, it is—to be taken down; his present imperial majesty having reflected that it is not becoming that the "august founder of his dynasty" should repose in the Invalides, when the old kings of France were buried in the Abbey of Saint Denis; and having accordingly resolved that his body shall be removed to that abbey, and a tomb be erected for him there. The celebrated obelisk of Luxor is threatened with removal from the Place de la Concorde to the courtyard of the Louvre.

Treatment of Builders.—In these days of competition, we had need be gifted with much patience and forbearance, for the way we poor builders are treated would imply that our time is of little value. For example, an advertisement appears in the *Builder*, inviting tenders for works: we send our tenders to the place appointed, and here the matter ends in most cases; no list being given, and if asked for, the reply is, "We do not give the list, as it will be sent to the *Builder*, headed 'Blind Builders;'" and that is not very pleasant to the poor wight who has made the *faux pas*. But, sir, what need any man fear jokes, if it is all fair and above board? The fact is, there is such a thing as *sub rosâ;* if not, why the desire to retain the list of tenders, which is all the satisfaction we have (and surely that is very small), after, perhaps, days of trouble in making our estimate?—J. T.

Telegraphic.—The laying down of the submarine telegraph between Dover and Ostend took place on Thursday in last week, with perfect success. Independently of the French lines, it will connect with the general continental system. The length of the cable will be seventy miles, and it will comprise six distinct wires.

Connection of the Railways.—Now that we are on the eve of "reform" among the metropolitan bridges, I cannot resist addressing you on a subject equally occupying the public mind, viz. the general connection of the railways—"our modern highways"—in London. What should we say to a break in the *ordinary* thoroughfares, owing to the river? Now is the time for viewing these two great subjects together, and so effecting a comprehensive improvement. Of piecemeal alteration we have had enough:—"doing and undoing" is sadly expensive. To come, however, to particulars,—why should not all the railways intercommunicate at Farringdon-street? The entire southern system might be united at Waterloo station, and, thence proceeding, cross the Thames at Blackfriars, either by a separate bridge, or by one built (in lieu of the present) to accommodate both general and railway traffic. I am glad to find that a station in the very heart of town finds great favour in Lord Palmerston's eyes; and having no doubt that it does too in yours, I trust you will use all the weight of your influence in forwarding the object.—Rail. Progress.

Manchester Infirmary Grounds and Wellington and Peel Statues.—It is proposed to alter the infirmary grounds. There are two plans before the improvement committee, one of which, according to the local *Courier*, has met with the approval of the trustees of the infirmary, and the other is the suggestion of the improvement committee. According to the former, it is proposed that the pond shall be filled up, and that a low wall be erected along the entire area. Along the centre of the area will be an extensive promenade, having small pillars to mark the boundary, and on them statues, &c. At each extremity of the ground, at the two ends of the building front, will be placed the Wellington and Peel monuments. To this plan the improvement committee object: they propose that the whole be thrown open as a promenade without any obstruction other than a chain of pedestals. Neither plan is definitely decided on, but there is every probability, it is thought, that the one proposed by the improvement committee will, with some modifications, be ultimately adopted.

New Motive Power: The "Bottled Boreas in Paris.—A M. Jullienne has picked up, probably out of the *Builder*, the idea of the Baron de Bode's bottles of compressed air as a motive power, and is, it is said, applying it to carriages on common roads. A "four-in-hand" may thus, it is declared, be carried in the coat-pocket, as Gulliver did those of Lilliput; for the *Presse* assures us that he saw "a carriage containing two persons proceed for twenty minutes at the full speed of a good horse (in harness we suppose), with a cylinder of compressed air of so small a volume that he could have conveniently put it into his pocket." It is proposed to have depôts in Paris at which the cylinders may be loaded or charged, and the necessary apparatus is such, it is said, that it can easily be applied to all sorts of carriages, from a gig to an omnibus.

Stamping, Punching, and Forging Metals; Pile Driving, &c.—A patent has been taken out by Mr. Solomon Andrews, an American engineer, for some machinery for cutting, punching, stamping, forging, and bending metals, crushing metallic ores, and, by a modification, for driving piles. The invention consists of a heavy hammer, made very long in proportion to its size, at the bottom of which can be adjusted the necessary tools, cutters, dies, punchers, crushers, &c.; the principle secured by patent being the means employed for raising it and allowing it to fall with full effect, by help of a toothed rack and pinion. A piece of metal, it is said, may be cut off, forged, punched, stamped, and delivered from the machine in the form of a nut, ready for having the thread cut. In order to prevent the punches and other tools from becoming hot when operating on metal at a red heat, both it and the hammer are made hollow, and filled with water, the upper part being stopped to prevent the fluid from being thrown out,—an absurd idea unless the water be allowed to evaporate and escape, which it cannot well be if stopped up within the metal. For pile driving the rope or chain is attached to the lower end of the hammer, and made fast to a cord-wheel on the pinion shaft.

TENDERS

For the erection of a tunnery, at Burton-on-Trent, Staffordshire, for Messrs. Allsopp and Co. Mr. Josiah Houle, architect, London.

I. and C. I'Anson	£10,796
Hayward and Nixon	10,136
H. and R. Holland	9,886
Little and Son	9,389
Jay	8,995
Mansfield and Son	8,960
Locke and Nesham	8,810

For repairs, &c. to 33 houses situate in Brick Lane, Spitalfields. Quantities not supplied.

Christopher	£2,061	0	0
Downes	2,016	0	0
Crawley	2,000	0	0
Copeland	1,985	11	0
Emmeray	1,880	0	0
Harmer	1,814	0	0
Tolley	1,769	0	0

For finishing alms-houses for indigent foreigners, at Norwood. Mr. E. R. Lamb, architect. Quantities supplied.

Myers	£1,460
Colls and Co.	1,234
Wardell and Baker	1,175
Hopkins and Roberts	1,140

TO CORRESPONDENTS.

Newcastle-upon-Tyne Competition.—"Omega" asks for information as to the decision.

"H. M." "J. H. T." "G. W." "Quondam," "J B" "J D. W." "S. H." "W. J" (the heights have been given in our pages. "Dr. S." (next week). "Mr. H." "R. R." "G. G." (Chippenham). "One who has been journeyman," "P. Q. W. H." "A Hidden Friend." "M. D." "J. R." Kensington. (Adjoining owner could stop it. Eaves may not project beyond own ground). "R. A." "Archdeacon L. F." "Z." (declined with thanks). "Vitrified Clay." "J. P. C." "E. H. C." (We do not know that the plans are in England. We may perhaps obtain them). "J. V." "G. M." "F. P." (thanks). "G. L. P." (We do not know of an architectural lending library. *Students* of the Institute of Architects have the advantage of the library there). "A. L." "W. R." "F. P." "W. C." "J. Mc. M." "J. D. W." "O. H." "T. R. W."

ADVERTISEMENST.

TO ROAD-MAKERS, MASONS, BRICKLAYERS, AND OTHERS.

NOTICE is hereby given, that the Surveyors of Highways of the Parish of Lambeth, will MEET at the VESTRY-HALL Church-street, on FRIDAY, the 20th day of MAY, at SEVEN o'clock in the evening, to appoint TWO EFFICIENT WORKING FOREMEN, to look after several gangs of men employed on the highways. Wages, 30s. per week each. Applicants to be not le s than 25, nor more than 40 years of age.—Applications, in the handwriting of the parties, with certificates as to character and ability, to be sent to the Clerk, before THREE o'clock on the day named, and endorsed, "Application for Working Foremenship."—By order of the Board,

THOMAS ROFFEY, Clerk.

Office, No. 20, Walcot-place East. May 13, 1853.

TO PARENTS AND GUARDIANS.

A BUILDER, in one of the Midland Counties, has a VACANCY for a PUPIL, who would have an opportunity of acquiring a knowledge of the general business. Address, C. B. A. care of Mr Egley, Bookseller, 35, Upper Berkeley-street West, Hyde Park square.

AN Architectural Artist, in good practice, has a VACANCY in his Office for a PUPIL, possessing some knowledge of drawing, for a term of Two or Three Years. He will be instructed in every branch of architectural and perspective drawing. Premium very moderate.—Address, pre-paid, to DELTA, Office of "The Builder," 1, York-street, Covent-garden.

TO SCAGLIOLISTS.

WANTED, a MIXER, who can imitate the various marbles. Also a POLISHER. None need apply but those who are fully competent.—Apply at the Office, Scagliola Marble Works, Buckingham-street, Fitzroy-square.

TO GAS-FITTERS.

WANTED, TWO steady WORKMEN for best work, and who are competent to superintend and direct orders.—Apply to TIMOTHY SMITH and SONS, Birmingham.

TO BRICKLAYERS.

WANTED, an active WORKING FOREMAN who thoroughly under-stands the business, and can give an unexceptionable reference.—Address, post-paid, stating by whom last employed, age, wages, and residence, to A. Z. care of Mr. Were, No. 33, North Audley-street, Grosvenor-square.

WANTED, by an ARCHITECT in the City, an ASSISTANT, who must be a good DRAUGHTSMAN, and otherwise fully qualified.—Address, stating age, references, and amount of salary required, D. A. Z. care of the Housekeeper, 32, Bucklersbury, City.

Also, an ARTICLED PUPIL will be received, for a term of four or five years.

TO THREE-BRANCH HANDS.

WANTED, for the Country, a Young Man, who is a good Plumber, and has no objection to fill up his time with painting and glazing.—Apply to Mr. W. RUDD, Grainer and Decorator, 48, Chiswell-street, any morning before Nine

WANTED, by a Young Man in his twentieth year, RE-EMPLOYMENT in a BUILDER'S OFFICE; writes an expeditious hand, and for three years has kept a set of builder's books; thoroughly understands house-agency, and can be well recommended.—Direct, R. W. No. 5, Great Western-terrace, Kensall-green.

TO BUILDERS, SMITHS, AND IRONMONGERS

WANTED, a SITUATION as WORKING FOREMAN. One who has had considerable experience in house-smithing, particularly in kitchen work, baths, and the circulation of hot water.—Address, T. H. 79, Metropolitan Buildings, Somers Town.

WANTED, to place out a YOUTH, aged 16, in the neighbourhood of London as an in-door APPRENTICE to a BUILDER, Stonemason, &c. for a term of Three Years; he has been accustomed to the business. A premium will be given.—Apply to Mr. E. MOORE, 10, Brighton-place, North Brixton.

TO BUILDERS, ARCHITECTS, &c.

WANTED, EMPLOYMENT by a YOUNG MAN, who has a practical knowledge of CARPENTERING, and is willing to make himself generally useful in either of the above branches. Writes a good hand, and can keep accounts.—Address, H. S. W. 9, Gilbert's-buildings, Westminster-road, Town or Country.

TO ARCHITECTS AND SURVEYORS

WANTED, by the Advertiser, a SITUATION as above, to get out working detail and other drawings; has a knowled e of taking out quantities, perspective and tinting, and is willing to make himself useful. Salary moderate. No objection to the country.—Address to T. W. A. Johnson's Post Office, Blackfriars road.

TO ARCHITECTS.

WANTED, by the Advertiser, a SITUATION in a London Office; is a good draughtsman, with a thorough knowled,e of perspective, and conversant with the requirements of an architect's office. A moderate salary only required. Unexceptionable references can be given.—Add ress, R. S. Post-office, Norwich.

AN Experienced Practical Man, wishes for an ENGAGEMENT as CLERK of WORKS, or GENERAL FOREMAN. Can keep accounts, measure up work, &c.; understands all branches in building. Unexceptionable references.—Direct to X. Y. Z. Mr. Lavers's, Stationer, 31, Great Portland-street.—May 11, 1853.

TO ARCHITECTS.

A CLERK of WORKS, who has been engaged for London Architects nearly twenty years, and has just completed extensive works in the City, is OPEN to a RE-ENGAGEMENT.—Address X. L. 3, York-place, York-street, Hackney-road.

TO ARCHITECTS

AN experienced practical SURVEYOR in measuring, estimating, taking off quantities, &c. would be glad to enter into an ARRANGEMENT with an Architect for the same.—Address, ALPHA, Post-office, Mount-street, Lambeth.

TO ARCHITECTS AND SURVEYORS.

AN ASSISTANT of thorough practical knowledge, and well versed in the general routine of the profession, is now open to a RE-ENGAGEMENT. The highest testimonials.—Address, B. C. L. 5, Oxford-terrace, Clapham-road.

TO LOCAL BOARDS OF HEALTH AND CONTRACTORS.

THE Advertiser is open for an ENGAGEMENT as SUPERINTENDENT of WORKS; has a thorough knowledge of building, iron-work, and all kinds of pipe-laying, draining, &c.—Address, S. S. BROOMFIELD, Villas, Ealing, near the turnpike, Middlesex.

TO ARCHITECTS, BUILDERS, &c.

THE Advertiser desires a SITUATION for a steady BOY, who has been educated in a Blue Coat School and School of Design, and has shown great talent for drawing. The institution would appreciate him for seven years to a tradesman of the Established Church. Address MAUND and PALMER, Bromsgrove.

TO ARCHITECTS AND SURVEYORS.

THE Advertiser, a young man, who writes a good hand, is a good accountant, acquainted with construction, prices of materials, and has had some experience in drawing, designing, measuring, and estimating, is desirous of an ENGAGEMENT. References unexceptionable.—Address, ALPHA, 46, Moorgate-street, City.

TO ARCHITECTS, BUILDERS, AND OTHERS.

A THOROUGH, Practical, and Experienced CLERK of WORKS, fully competent to get up fair and working drawings, and who has had the management of buildings of great extent, is desirous of a RE-ENGAGEMENT in any similar capacity.—Address, S. 1, Ladbroke-gardens, Notting-hill.

TO BUILDERS.

A BUILDER'S CLERK will be disengaged in a week, and OFFERS his SERVICES to any gentleman requiring an educated and efficient assistant. Unexceptionable references to present and other employers, and as a comfortable rather than a lucrative situation is sought, a small salary only required.—Address, H. E. Office of "The Builder," 1, York-street, Covent-garden.

TO ARCHITECTS.

A YOUNG MAN, who served his articles in a London office, and has just terminated an engagement of seven years in the country, is desirous of a RE-ENGAGEMENT either in town or the provinces. He is a good and expeditious architectural draughtsman, under-stands getting up competition drawings, and has been engaged on works in both plain and tinted lithography. Any architect more particularly concerned in ecclesiastical work, or in publication, would find the services of the advertiser valuable. Salary required, 120l. per annum.—Address (post-paid), to T. N. Mr. Brown's, Stationer, 193, Strand, London

TO CARPENTERS AND BUILDERS.

THE Friends of a YOUTH wish to place him out for Four Years, to a respectable BUILDER in the Country. He has been at the trade three years. A Premium will be given. Address to A. Z., at the Office of "The Builder," No. 1, York-street, Covent-garden.

TO BUILDERS.

AN ACTIVE, MIDDLE-AGED MAN, of strictly industrious and sober habits, wishes a RE-ENGAGEMENT as SHOP FOREMAN; he has held a responsible situation in that capacity in a large building establishment upwards of ten years. References of the highest order. Address, W. R. Office of "The Builder," 1, York-street, Covent-garden, London. N.B. None but respectable builders need apply.

TO LAND AND TIMBER SURVEYORS, VALUERS, &c.

WANTED, a PARTNER in a very old-established and extensive country practice, who is in every way qualified to take an active part in the enclosure of commons, in land-surveying, mapping, and in the general routine of a surveyor's office. It would require from 700l. to 800l. to be paid down. None but principals, or their duly-authorised agents, need apply.—Further particulars may be obtained by letter addressed to Mr. WINDER, Sherborne, Dorset.

TO BUILDERS AND OTHERS.

HAMPSTEAD. — BELSISE-PARK. — TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot near London, approached from the Finchley-road, near the Swiss Cottage, and from the Hampstead road through the well-known avenue of stately elms, and bounded on the north by Belsize-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr C. J. RICHARDSON, Architect and Surveyor, 2, Keppell-street, Russell-square.

BUILDING LAND.—Some very eligible PLOTS of FREEHOLD BUILDING LAND TO BE LET for ninety-nine years, at low ground rents. Bricks on the ground. Money advanced.—Apply to Mr. RICHARD FIELD, Surveyor, 34, Coleman street, City.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston: term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 35, Old Jewry

Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate

TOLLINGTON PARK.—BUILDING LAND TO BE LET on LEASE, direct from the Freeholder.—Term 99 years.—The situation is the best in the park, road and sewer completed, and within three minutes' walk of the New Church.—For price and particulars, apply at Mr. G. A. YOUNG'S Office, 34, Eagle-street, Red Lion-square.

TO BE LET on Lease, a WHARF and PREMISES, at Deptford green, formerly in the occupation of E. G. Barnard, esq. The premises are extensive, have a large river frontage, and well adapted for the business of ship-building. A plan of the property may be seen, and further particulars obtained upon application at the Architect's Office, Guildhall, London. FERDINAND BRAND,

Comptroller of the Bridge House Estates.

BROMPTON ESTATE.—Arrangements having been completed with the Commissioners for the Exhibition of 1851, the remaining portion of this estate is now TO BE LET on BUILDING LEASES.—Plans may be seen, and full particulars obtained, at the Office of the Estate, Brompton-park, Old Brompton.

TO BUILDERS AND OTHERS.

SEVERAL PLOTS of eligible BUILDING GROUND in the suburbs and environs of London TO BE LET, on favourable terms, either in large or small quantities.—For particulars, apply to Mr. E. A. SPURR, Architect and Surveyor, 3, Newton-road, Bayswater.

TO BUILDERS AND OTHERS.

FOREST-HILL, SYDENHAM.—BUILDING GROUND TO BE LET, at the upper part of Forest-hill, within three minutes' walk of the railway station.—The plans and particulars of which may be seen at the Office of Mr. AITCHISON, Muscovy-court, Trinity-square, Tower hill.

THE Vestrymen of Richmond, Surrey, intend LETTING BY TENDER, on building leases, for ninety-nine years, from Midsummer-day, 1853, THREE PLOTS of FREEHOLD BUILDING GROUND, land-tax redeemed, most eligibly situated in the Queen's-road, near Richmond-hill and the Park, and within a few minutes' walk of the Railway Station, containing respectively 845 feet, 320 feet, and 272 feet of frontage.—Particulars and plans of the ground may be had of Mr. RICHARD BREWER, Surveyor, Hill-street, Richmond; Messrs. HUME and BIRD, No. 10, Great James-street, Solicitors; or of HENRY SMITH, Esq. Solicitor, Richmond, to whom Tenders are to be sent on or before the 25th inst. The Vestry do not bind themselves to accept the highest Tender.

Richmond, Surrey, May 10, 1853.

FREEHOLD BUILDING LAND, about 2½ acres at SURBITON-HILL, KINGSTON (the choicest spot of this beautiful neighbourhood, ornamentally planted), near the Station, and laid out in sites to suit private individuals, TO BE LET, on ninety-nine years' building leases.—Particulars at the Offices of Mr. J. BURGES WATSON, Architect, 39, Manchester-street, Manchester-square; also other BUILDING GROUND, of considerable extent, at Norwood, Brixton, Hampton Wick, Hook, West Cheam, Hanwell, Hampstead-road, and Cricklewood.

ELIGIBLE PLOT of BUILDING GROUND for FIRST-CLASS VILLA RESIDENCES to be LET in the best part of St. John's Wood (upon the Eyre Estate). Term, 86 years. Rent, 10s. 6d. per foot. Roads and sewers formed.—Apply to MESSRS. LUCKWOOD, Surveyors and Auctioneers, 1, Burwood-place, Edgeware-road; and 9, Upper Baker-street.

ELIGIBLE FREEHOLD BUILDING LAND, within five minutes' walk of the East Barnet Station on the Great Northern Railway, about 25 acres TO BE SOLD in the entirety, or a portion only.—Apply at Mr. LEBREW'S Offices, 3, Cardigan-street, Hampstead-road, near the Euston Station.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views.—Money advanced, and bricks may be had, delivered on the site of the intended building, at 30s. per thousand.—For particulars, apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

TOLLINGTON PARK.—Valuable FREEHOLD BUILDING GROUND TO BE LET, on Lease for ninety-nine years, at low ground-rents, suitable for the erection of second and third-rate houses. Omnibus communication from the City and West-end every five minutes. Money advanced.—For particulars, apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

NORWOOD, CROYDON, CHERTSEY, ACTON-LANE, NORTH WOOLWICH, near the Victoria Docks, and HOMERTON.—BUILDING GROUND TO BE LET. At NORWOOD within three minutes' walk of the Jolly Sailor (Norwood) Station, and little more than a mile of the Crystal Palace, commanding equally magnificent views with the Palace, having frontages from 50 feet and upwards, by depth varying from 150 feet to 200 feet and upwards, and an extreme width more than double the fronts. A pure water of the South Lambeth Company laid on to the houses now erecting. Also at THORNTON HEATH, Croydon, within three quarters of a mile of the Croydon Station. Also in ACTON-LANE, Middlesex, within five minutes' walk of the Station. Also at HALLSVILLE, North Woolwich, close to the New Victoria Docks and the Railway Station: and also at HOMERTON. At the three latter places small houses are required, and are usually let before completed.—For further particulars, apply to WILLIAM FRANCIS LOW, Esq. Solicitor, 67, Wimpole-street, Cavendish-square.

ST. JOHN'S PARK, HAVERSTOCK-HILL, HAMPSTEAD.—About 33 Acres TO LET on Building Lease, laid out in handsome terrace and convenient plots for single and semi-detached residences. Frontage 15 feet, 20 feet, 30 feet, 35 feet, 40 feet, 46 feet, &c. &c.; each with depths varying from 90 feet to 180 feet. This Estate offers some of the finest sites in the environs of London, close to the Hampstead-road station of the Blackwall and Fenchurch-street Railway, and within a few minutes' walk of Primrose-hill, the Regent's-park, or Hampstead-heath. A considerable portion of the sewerage is already complete, and the roads are being rapidly formed through the whole estate.—For particulars apply to Mr. E. J. KELLY, Architect, 33, Thavies-Inn, Holborn-hill, or Mr. C. M'DUFF, Solicitor, 37, Castle-street, Holborn.

BRICKFIELD in FULL WORK TO BE LET, ten miles from London, close to a canal, and the field contains excellent brick-earth, with immediate possession. The plant, &c. at a valuation, and coming-in about 1,500l. Apply by letter, pre-paid, to Cambridge, Office of "The Builder," 1, York-street, Covent-garden.

TO BLUE LIAS LIME MERCHANTS, &c.

TO BE LET, or DISPOSED OF, the SOLE and EXCLUSIVE RIGHT of TAKING and SHIPPING BLUE LIAS LIMESTONE from the whole of the Manor of LYME REGIS. The present and prospective demand for hydraulic lime is very large, and the quarries inexhaustible.—Apply to Messrs. JEFFERD, Plymouth.

TO CAPITALISTS, BUILDERS, AND OTHERS

WESTON-SUPER-MARE, SOMERSET.—The only FRONTAGE LAND to the SEA remaining unbuilt upon in the town.—TO BE SOLD, the Fee Simple and inheritance of and in ALL those several PIECES of FREEHOLD LAND in one or more lots, as now marked out for building in an intended NEW SQUARE of, about twenty large houses FRONTING AND OPEN ON THE WEST SIDE TO THE ESPLANADE AND THE SEA, OVER WHICH THERE IS AN UNINTERRUPTED VIEW. The square is intended to be 200 feet from north to south, and 200 feet from east to west, and to communicate on the east side with a handsome NEW STREET, about 40 feet wide and between 400 and 500 feet long. This valuable property is bounded on the south by Regent-street, and on the north by the Hotel-field, and contains altogether nearly four acres of the finest building land. "The finest Building stone at 1s. 8d. per ton; Lias Lime 22s. per 100 bushels; best Building Bricks 31s. per Thousand, all delivered. The finest Building Sand on the spot, gratis. Timber, Bath Stone, &c. by Sea and Rails into the place, free from all Town and other Dues." These lots may be purchased or held on ground-rents at the option of the purchasers. Plans and further particulars may be had of the proprietor, S. GUY PHILLIPS, Esq. Weston-super-Mare.

WALTHAMSTOW.—The FREEHOLD of FIFTEEN ACRES of LAND TO BE SOLD, either in one lot or in plots, with good frontages to the high road leading to Woodford or Chingford. Apply at Mr. ODELL'S Estate Office, 13, Nelson-terrace, Trafalgar-road, Queen's-road, Dalston; or to CHESTER CHESTON, Esq. 1, Winchester-buildings, Broadstreet, City.

DOWNSHIRE-SQUARE and CRESCENT, CASTLE-HILL, READING. The above property (land-tax redeemed) has now been recently laid out for building purposes in lots suitable for the erection of detached and semi-detached villas, varying in cost from 400l. to 2,000l.—a class of residence much needed in Reading—is now offered on moderate terms) for SALE or on LEASE for Ninety-nine Years. The situation of the Estate, which is on the west side of the borough, is remarkable for its salubrity. It commands beautiful and extensive views. Provision is made for the most effectual sanitary arrangements by an efficient system of drainage carried throughout the estate. Every means has been taken to render the estate attractive by the appropriation of a large central space for a pleasure-ground by the ample width of the roads and the ornamental character of the fences, &c. A portion of the land has been appropriated for stabling. For terms and further particulars, apply to C. G. GUYETT, Esq. 10, Lincoln's-Inn-fields, London; Messrs. POULTON and WOODMAN, Architects and Surveyors, 1, Greyfriars-road, Reading; or to Mr. JOHNSON, Estate Agent, Castle-street, Reading. A bird's-eye view of the estate, showing the allotments and the general character of the edifices to be erected, can be seen at the Offices of the Surveyors.

GOVERNMENT OFFICES and GENERAL FREEHOLD LAND SOCIETY.—The FIRST PUBLIC MEETING will be held at EXETER HALL, on THURSDAY, 19th MAY, instant, at HALF-PAST FOUR o'clock. Shares will be issued, and the ballot for allotments of the estate announced. Application for prospectuses, &c. may be made to the Secretary, Mr. FREDERICK PURDY, No. 4, Exeter Hall.

TO COLOURMEN AND OTHERS

BRITISH FIRE and WATER-PROOF PAINT.—The Advertiser, having discovered the materials of which this desideratum of Paints can be made in the United Kingdom at moderate costs, will DISPOSE of his DISCOVERY for a Remuneration, with proof of the efficacy and individuality of his information.—Letters, free, to ALPHA, 36, Paddington-street, M'Kylebone.

THE MELBOURNE and COLONIAL HOUSE, INVESTMENT COMPANY. — Provisionally registered.—To be incorporated under the 7 and 8 Vict. c. 110, and by Act of the Legislative Assembly at Melbourne and Sydney. Capital, £500,000 in 40,000 Shares of £25 each.—Deposit, 10s. per share.

TRUSTEES.

The Right Honourable Viscount Drumlanrig, M.P.
Sir Coutts Lindsay, bart. Grosvenor-square.
Lewis C. Hertslet, esq Fitzroy-park, Highgate.

DIRECTORS.

The Right Honourable Viscount Drumlanrigg, M.P. Comptroller of her Majesty's Household.—Chairman.
L. C. Hertslet, esq. (firm A. Moberly and Co.), Union-court, Old Broad-street.—Deputy Chairman.
W. R. Anderson, esq. 21, Billiter-street, City, merchant.
William Arton, esq. Colonial Merchant, 15, Langbourne Chambers, Fenchurch-street.
George Angell, esq. 45, Friday-street, Cheapside, Merchant.
James Duncan, esq. Melbourne.
E. Ward Jackson, esq. Norton, Stockton upon-Tees.
John Jamieson, esq. Director of the Australian Mercantile Company.
William Jones, esq. 3, Davies-street, Berkeley-square, and Leigh Lodge, Somersetshire
T. J. Jones, esq. Melbourne.
Archibald Kintrea, esq. Great George street, Bermondsey.
Edward Lozier, esq. 56, King William-street, City, Director of the "Timber Press ving Company."

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BROKER.—Oliver Raymond, esq 6, Bank Chambers, Lothbury.
SOLICITORS.
Messrs. Sutton, Cranmacy, and Prudence, Basinghall-street, city.
Messrs. Stevens and Bonnor, 49, Pall-mall.
SHIPPING AGENTS.
C. M. Major, esq. 21, Billiter-street, City.
W. R. Anderson, esq. 21, Billiter-street, City.
SECRETARY (pro tem).—Mr. Thomas Beggs.
Offices—No. 13, Gresham street.

This Company is formed for the purpose of providing Melbourne and the other districts of the Australian Colonies with cottages and houses suitable to the wants of all classes of their population, in a style of English convenience and comfort, and in quantities proportioned to the demand. The project recommends itself at once to public favour, inasmuch as good house accommodation is one of the first necessities of civilised life, and is, under all circumstances, essential to the improvement of the people. It is the great want of Australia at this time; and the Company, in providing houses, will not only promote the interests of the Colonies by giving a fixed and settled character to its population, thereby rendering trades and occupations more valuable, and giving the best security to property of all kinds, but will realise for itself a certain and large profit.

This becomes apparent by a reference to the facts of the case. Emigration, which has been going on for years, is steadily increasing, and to so great an extent that the increase in the Melbourne District alone is estimated at about 2,000 weekly. There is no adequate accommodation for those great numbers, most of whom are English emigrants, and who feel the want of a comfortable home as the greatest privation. Above 15,000 persons are living in tents, and the rents asked and obtained are enormous. A family house, which can be obtained in London for 40l per annum, realises 500l per annum in Melbourne. The private letters which have been published in the daily papers give much valuable information on the subject.

The following is an extract from a despatch, No. 30, from Lieut.-Governor Latrobe, to the right Hon. Sir John Pakington, received January, 1853, in which he states that—

"At this time, the town and its suburbs, and the villages for several miles round Melbourne, notwithstanding the steady stream setting through it, and upon the roads to the gold fields is are absolutely choked with the teeming population. The most extravagant rent is paid for the most indifferent accommodation, temporary or otherwise. Enormous profits to be realised from house-rent hold out every temptation to the resident inhabitants to submit to inconvenience," &c. &c.

"Hundred of tents may be seen pitched in prescribed localities, in the vicinity of the city; and it is acknowledged that, during the past weeks, as at the present time, large numbers of new comers arriving, unprovided with accommodation, have, in the first instance, to pass both day and night without shelter at all.

"The fact is that, viewing our present prospects, every fourth vessel sent to these colonies ought to be freighted with building material of ready construction, galvanised or corrugated iron, canvass, felt, slates, flooring-boards," &c.

A writer on the buildings of Melbourne gives the following description of the emigrant's or mechanic's house, which realises, as a minimum rent, 50l. per week, or 130l. per annum :—

"These buildings are generally two-roomed cottages, built either of stone, brick, concrete, or wood, roofed with shingle; each room is on a level with the ground, about 11 feet wide, 14 feet deep and 9 feet high, both rooms having a plain lath-and-plaster ceiling, and the walls neither papered nor coloured."

It is proposed by the Company to construct houses in this country of the very best material, provided with all conveniences, and quite ready to be erected immediately upon arrival at their destination. They are prepared with plans, and are able to show that they can supply two-roomed fire-proof hollow-brick cottages, much better in every way than those described above, at 85l. in London, or 70l. in Melbourne, and that they have contracts at this time ready to be entered into by competent parties to supply comfortable seven-roomed cottages for 75l. each in London, or 100l. in Melbourne. In fact, houses very much better than those now in use in the Colonies might be supplied to the occupier at a greatly diminished rent, and leave a large profit to the Company.

It is clear that this want must be supplied by the mother country. The high rents for workshops, and the price of labour, in Australia, render the houses, constructed there of colonial timber, so disproportionate to the cost of similar houses in England, that any competition with the Company in the colonies is quite out of the question. The difference of the price of labour alone is a sufficient guarantee that it will be, for an inconsiderable length of time, much cheaper for colonists to import houses from England than to undertake the construction of themselves.

Melbourne, the town which the Company have selected as the first field of operation, occupies a most important position. It extends over a space of two miles, on the banks of the Yarra Yarra, and has already risen to great importance As it is the capital of Port Philip, which presents the nearest point of approach to England, and which is in many other respects attractive, especially to the British emigrant, it is certain to advance rapidly, and to become the seat of a large, prosperous, and wealthy population.

The Directors, having gone carefully into estimates and calculations of expenses, have the most entire confidence in the practicability of the scheme, which must, with proper management, realise the most satisfactory results

Applications for shares to be addressed in the usual form to the Broker, OLIVER RAYMOND, Esq. 6, Bank Chambers, Lothbury; to the Solicitors; and to the Secretary, at the Company's Offices, 13, Gresham-street, City, where Prospectuses may be obtained.

FOWLER'S IMPROVED WROUGHT PUMPS for CONTRACTORS, BRICKMAKERS, EXCAVATORS, and OTHERS.



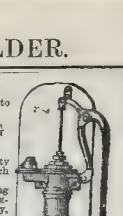
The attention of this house for more than fifty years past having been almost exclusively paid to the manufacture of every description of pump-work for every variety of purpose, attention is respectfully requested to their very superior Wrought Pumps, with plain or sliding telescope suction, galvanized and ungalvanized. A large stock of all sizes is kept ready to finish off from, according to length required, at the shortest notice.

This description of Pump-work varying in almost every case, it is impossible to quote a general price, but the fullest particulars will be given on application.

A large stock of Wrought Pumps, from 3 inch single to double 15-inch barrel, is also kept on hire prepared for hand or steam power, on reasonable terms, at

BENJAMIN FOWLER'S
ENGINE-PUMP MANUFACTORY,
Whitefriars-street, Fleet-street, London.

TO BUILDERS AND PLUMBERS.
The attention of the Trade is called to
JOHN WARNER & SONS'
PATENT VIBRATING
STANDARD PUMP,



which is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the vibrating standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 30 feet; also, Garden Engines constructed on the same principle.

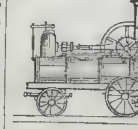
JOHN WARNER & SONS,
8, Crescent, Jewin-street, London,
Manufacturers and Patentees.

APPOLD'S PUMPS.—Mr. Charles Tetley, the unsuccessful plaintiff in his recent action against us in the Court of Exchequer, having entered a disclaimer of the majority of the points claimed by his patent of 1846, is now advertising his "Centrifugal Pumps," and forbidding the use by the public of certain Centrifugal Wheels. "Appold's Pump," he says, "is fully described in, and forms the substantive matter of Tetley's Patent."

It is right, however, that the public should know that this pump, which was presented to the public by Mr. APPOLD at the Great Exhibition of 1851, and which we are manufacturing, cannot be comprehended in any patent, being a combination of principles and appliances which have for many years been known and published.

EASTON and AMOS.
Grove, Southwark, April 30th, 1853.

STEAM PUMPING ENGINES.—
PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready, to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

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JOHN WARNER and SONS,
CRESCENT, JEWIN STREET,
LONDON,
Galvanized Iron Tub Garden Engine, with Warner's Registered Spreader, is strongly recommended for durability and low price, viz. 3l. 3s.



May be obtained of any Ironmonger or Plumber in Town or Country, or of the Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 22, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers	from 5½d. per yard.
Painted Marble, Granite, and Oak Papers	from 9½d. do.
Superior Dining and Drawing-room Papers	from 1s. do.
Satins and Flock	from 3s. do.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 500, OXFORD STREET, where all goods can be obtained on the same terms as at the factory.

GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 116, Whitechapel, near the Obelisk, and 500, Oxford-street.

TO BUILDERS AND LANDLORDS.
PAPER HANGINGS.—Messrs. JENNELL and CROSBY inform the trade they have their new spring roller now ready to publish, block and machine, as well as many thousand pieces of last year's patterns which they can offer at VERY REDUCED PRICES FOR CASH.—9, Queen-street, Southwark-bridge-road.

PAPER-HANGINGS.—R. HORNE, PAPER HANGING MANUFACTURER, 41, Gracechurch-street, City, invites builders and the trade to inspect his extensive stock of PAPER HANGINGS in Flock, Embossed, Velvets, &c., which, by the aid of powerful machinery, he is enabled to offer at the following prices, in stock quantities, for cash only, viz.:—

Stout lining paper		5d.
Superior ditto	6d. and 7d.	
Bed-room papers, in great variety	at	8d.
An excellent cabinet paper	at	8d.
Sitting-room ditto, on blended grounds	7d. to	9d.
Hand-made marbles	9d. to	1s 6d.
Good satin papers	1s. 6d. to	2s.
Flock papers	2s. 6d. to	2s. 6d.
Hand-made granites	3s. to	4s. 6d.

Per Piece.

Every novelty in French and English panelled decoration always on hand; also excellent imitation of fancy woods.

N.B. Patterns sent into the country, by post, showing the style and quality of the above, on receipt of two stamps, and the goods despatched with promptitude on receipt of a remittance to the amount of the order given.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters, Centres, Medallions, &c. &c., from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.
Machine Printing Works, Royal Mills, Wandsworth, Surrey;
Block Printing Works, 451, Oxford-street, London.

TO ARCHITECTS.
COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

THE HIGHEST STYLE OF ARTISTIC LITHOGRAPHY WILL BE FOUND IN THE WORKS PRODUCED BY
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Landscapes, Architecture, Shipping, and Figure Subjects—Portraits direct from Life on Stone, or from Paintings, Drawings, or Daguerreotype—Medical and Scientific Subjects, executed in a superior style peculiar to this establishment. Calotypes copied.

The large Staff of Draughtsmen required by Messrs. DAY and SON to execute the
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FOR HER MAJESTY'S STATIONERY OFFICE,
Offers to solicitors, engineers and surveyors, stationers and printers, throughout the country, great advantages for the rapid and economic execution of their lithography. If required, a plan received by the morning post may be lithographed, and despatched by the return post.

To meet the growing demand upon
LITHOGRAPHY FOR COMMERCIAL PURPOSES,
Messrs. DAY and SON have just erected the largest premises for the purpose in the world. In soliciting orders from Manufacturers and others for
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And every other description of Lithography and Colour Printing, Messrs. DAY and SON promise a style of work of unequalled excellence, with economy and rapidity of execution. The smallest consumers of the productions of Lithography in any part of the kingdom should apply to Messrs. DAY and SON for estimates, and it will be found, owing to the extent of this Establishment, that its manifest advantages, viz. superiority of work, great speed, and moderate charges, can be secured with satisfaction and saving to the customer.

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As perfected and practised by Messrs. DAY and SON, has assumed a position hitherto unattained for artistic excellence, rapidity of execution, and economy of production. The first and only perfect realization of a painting in colours, "The Blue Lights" (after Turner), executed at this establishment, secured for itself the designation of a Painting Print. Other examples of great merit, more particularly illustrating rapidity and economy of production, combined with artistic excellence, will be found in the three important works by

MATTHEW DIGBY WYATT, ESQ.
Namely, "THE GEOMETRICAL MOSAICS OF THE MIDDLE AGES," "METAL WORK AND ITS ARTISTIC DESIGN," and "THE INDUSTRIAL ARTS OF THE NINETEENTH CENTURY."
These works, although elaborately printed in colours and gold, have been sold at the price of uncoloured works. The last-named, consisting of 160 plates, issued in Fortnightly Parts of four plates, proves the possibility of adapting Chromolithography to Periodical Works—to book plates requiring long numbers cheaply and quickly—and to geological or other coloured maps.
Messrs. DAY and SON are prepared to estimate and undertake Works of any extent, and to meet every requirement as to quantity and speed, or necessity as to price.

STEEL AND COPPER-PLATE PRINTING OF EVERY DESCRIPTION.

LADIES, Amateurs of Drawing, will find the reproduction by themselves of their own Sketches, by means of Lithography, a most delightful occupation for leisure time. Materials and instruction can be had of
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H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.
These Pencils are prepared in various degrees of hardness and shades.

H H H H for drawing on wood.	F F light and shading.
B H H for architectural use.	F for general use.
H H for engraving.	B black for shading.
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
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M medium.	

Sold by all the principal Stationers in town or country.

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PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices:—

Steel Drawing Pens, with ivory handles	4s. 0d.
do. do. brass mounted do.	4s. 6d.
do. do. German silver do.	4s. 6d.

And every other instrument of the best workmanship equally low

TO ARCHITECTS AND DRAUGHTSMEN.
TO BE SOLD, Cheap, a very complete set of MATHEMATICAL INSTRUMENTS, in mahogany case, comprising traverser in joints, capable of describing circles of 2 feet radius; proportional compasses, two pairs of other compasses, with needle points; parallel and other pens, scrumcrels, triangle, &c.—To be seen at ALLISTON'S Hair-cutting Rooms, 416, Strand.

TO STEAM-BOAT PIER PROPRIETORS AND OTHERS.
To be DISPOSED of by PRIVATE TENDER, the FLOATING PIER or DUMMY, lately used as a public pier for landing Steam-boat Passengers at Vauxhall Bridge; with the rising Bridge or Gangway from the same (the latter being nearly new), also the Wood Staircase from the rising gangway to the bridge; with the Lead Covering to the stairs &c. &c. The particulars of which may be obtained at the Vauxhall Bridge Office, and of Mr. ALEXANDER JOHNSON, C.E. Masonry Court, Trinity square, Tower hill. The Tenders to be sent to the Vauxhall Bridge Office, on or before TUESDAY, 24th inst. at ONE o'clock, p.m. addressed to THOMAS JEFFERY, Esq. Clerk to the Commissioners, and endorsed on the outside "Tender for the Floating Pier," "the Rising Bridge or Gangway," or "the Staircase," as the case may be.

TO MANUFACTURING CHEMISTS, PLUMBERS, BUILDERS, &c.
ANDREW CLARK and COMPANY, PLUMBERS,
THE BEAR GARDEN LEAD WORKS, SOUTHWARK,
Invite the attention of Manufacturing Chemists to their Patent method of
UNITING LEAD TO LEAD WITHOUT SOLDER.
Leaden Chambers, or any leaden vessels, made or repaired by this process, making them complete, without the introduction of any foreign metal.

PLUMBERS and BUILDERS can be SUPPLIED with SHEET LEAD and PIPE, cut to any dimensions, and EXCHANGED for OLD LEAD, on the LOWEST TERMS.

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THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 200 feet ..... £1 16 6 } In sizes 40 by 30.
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IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 6 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 6 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 26, SOHO SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

FOREIGN SHEET GLASS, packed in 200-feet Cases, 24s., 26s. and 28s. per case.

Patent Sheet Glass,

in sheets of 48 by 36, 2l. 2s. per crate of 300 feet.

GLASS TILES,

of an inch thick,

packed in cases containing 50 SF. 5s. per case.

JAMES PHILLIPS AND CO.

116, Bishopsgate-street Without.

TO BUILDERS, PLUMBERS, HOUSE AGENTS, &c.

JAMES MILES'S BRITISH and FOREIGN WINDOW-GLASS WAREHOUSE, 18, CHURCH-STREET, SHOREDITCH, a few minutes' walk from the Eastern Counties Terminus.

J. M. respectfully calls the attention of the trade to his stock of ROUGH PLATE, which may be had of the following thickness:—

⅛, ⅛, ⅛, ⅛, ¼, ⅜, and 1 inch. Also CRATES of C.C.C. 30s.; C.C. 28s.; cases 40 by 30 of 200 feet, 24s.; ditto of 300 feet, 30s.; 14 to 16 oz. glass in crates, 7d. PER FOOT; 18 to 18 oz. in crates, 9d PER FOOT. Sheet lead, pipe, plumbers' brass-work, closets, pumps, basins of every description. White-lead, oils, colours Extensive assortment of PAPER-HANGING of the newest pattern always on hand, at prices from 4½d. per 12 yards. SASHES PRIMED in oil and glazed, in any quantity, with promptitude, at very low charges. The full price given for OLD LEAD, or the same taken in EXCHANGE.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY, Grey and Chalk Lime, by the barge or yard

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1850, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of this cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 31, King-street, Liverpool.

6, South Wharf, Paddington.

PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT.—The difficulty of procuring this valuable Cement of uniform colour and strength has hitherto prevented its more general use. Contractors and Builders will find that these two important qualities may be depended on with the greatest certainty in that manufactured by CHARLES J. HILTON, at his Roman and Portland Cement and Plaster of Paris Works, Faversham, Kent, at which place, as also at his Wharfs in London, 6, Upper Thames-street, City, and Great Scotland-yard, Westminster, orders can now be received to any extent.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Parrs White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 200 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.

Agent for Southampton, R. L. FLUDER, American Wharf.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaves scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON 6, South Wharf, Paddington.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JAGGS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

TO CONTRACTORS AND OTHERS.

WILLIAM PETERS (late Poynder and Medlicott), 7, North Wharf, Paddington, and Wouldham Hall, Grey Stone Lime-works, on the Medway, near Rochester, begs to inform all large consumers of Grey Stone Lime, he can supply them upon the most advantageous terms, in quantities of not less than 50 or 100 cubic yards, per barge, alongside any wharf in London or elsewhere.

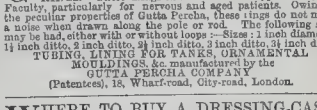
PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other.—DOES NOT WASH OFF.—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 22, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.



NOISELESS RINGS.

GUTTA PERCHA CURTAIN & CORNICE RINGS.—These Rings have been much approved by the Faculty, particularly for nervous and aged patients. Owing to the peculiar properties of Gutta Percha, these rings do not make a noise when drawn along the pole or rod. The following sizes may be had, either with or without loops:—Sizes 1 inch diameter, 1¼ inch ditto, 2 inch ditto, 2½ inch ditto, 3 inch ditto, 3½ inch ditto.

TUBING, LINING FOR TANKS, ORNAMENTAL MOULDINGS &c. manufactured by the GUTTA PERCHA COMPANY (Patentees), 18, Wharf-road, City-road, London.

WHERE TO BUY A DRESSING-CASE. In no article perhaps is caution more necessary than in the purchase of a dressing-case, for in none are the mercenous arts of the unprincipled manufacturer more frequently displayed. MECHI, 4, Leadenhall-street, near Gracechurch-street, has long enjoyed the reputation of producing a dressing-case in the most finished and faultless manner. Those who purchase one of him will be sure of having thoroughly-seasoned and well-prepared wood or leather, with the fittings of first-rate quality. The prices range from 1l. to 100l. Thus the man of fortune and he of moderate means may alike be suited, while the traveller will find the Mechian Dressing-case especially adapted to his necessities.—4, LEADENHALL-STREET.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c.—JAMES LYNE HANCOCK, Sole Manufacturer (and Licensee), Goswell-mews, Goswell-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now manufactured from 1-8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE for FIRE ENGINES, LIQUID MANURE, and for conveying HOT WATER to BATHS in DWELLING-HOUSES and BREWERIES, manufactured to resist great pressure of any length and size to order.

*** Testimonials may be had on application at the Manufactory.

N.B. VULCANIZED WASHERS and SHEET RUBBER for Steam and Hot-Water Pipes, and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

AWARDED a PRIZE MEDAL under CLASS XIX. TO THE CARPET TRADE.—ROYAL VICTORIA FELT CARPETING The Patent Woollen Cloth Company beg to inform the Trade that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any they have hitherto produced, both in style and variety. The public can be supplied at all respectable Carpet-houses in London and the country. The Company deem it necessary to caution the public against parties who are selling an inferior description of goods as Felted Carpet, which will not bear comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.
The Company's Manufactories are at Elmwood Mills, Leeds; and Borough-road, London. Wholesale Warehouses at
8, LOVE-LANE, WOOD-STREET, CHEAPSIDE.

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE,
Manufacturers of
PATTINSON'S OXICHLORIDE of LEAD.
The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders with due dispatch, now proceed to bring this new and valuable preparation of Lead before them from its and the public quite sure that it will not in the present case be overdone, because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.
Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of oxide of Lead, it being well known that common White Lead is a mechanical combination of one equivalent of oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.
But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of B dy; by which term is meant the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this respect in particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.
In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.
LONDON ..... { Messrs. Blundell, Spence, and Co. 9, Upper Thames-street.
Mr Richd. Cooke, 7, Sise-lane.
LIVERPOOL ..... Messrs Johnson and McGowan.
MANCHESTER ..... Mr James Hessler.
LEEDS ..... Messrs. T and E. G. Jepson.
SUNDERLAND ..... Mr John Young.
DEVONSHIRE AND CORNWALL ..... { Mr Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND ..... { Mr Wm Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND ..... Mr John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND ..... { Mr P. Lalicker, 91, Middle Abbey-street, Dublin.
BELFAST ..... { Messrs. William Stevenson, jun. and Co.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.
The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior material as a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.
The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark.—In Hull, by Messrs. BLUNDELL, SPENCE, and Co.; when ground and dry by Messrs. T. B. MORLEY and Co.; and by the Company's Agents across Acres in London, Messrs. CHARLES DEVAUX and Co. wholesale agents, 53, King Williamstreet, City; Mr. CHARLES JACK, wholesale and retail agent, 8, Tottenham-court, New-road, and 89, Upper Thames street, city. In Manchester and Liverpool, by Messrs. LAWFORD and Co. at Norfolk street, Liverpool. In Leith, by Messrs. R. ANDERSON and Co. Sole Agents for the OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.
The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.
For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, by its costliness hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.
The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of this Paint, with even gallon of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in the first instance, as well as durable on every future consideration. To a contractor for The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.
For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.
A circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London opposite the London Docks).

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.
HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.
LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom,
Now supply their innoxious substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).
In 14 lb. Kegs, and upwards, from the Depôts of their respective Agents:—
LIVERPOOL { Mr. T. BROUGH, South John-street.
R. SUMNER and CO. Lord-street.
IPSWICH.—RIDLEY and GRIMWADE.
IRELAND.—P. REILLY and SONS, 15, Cope-street, Dublin.
ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.
Price Current and Prospectus, containing Testimonials from the most eminent men, of its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard street, London.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, destroying all greenish vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s 6d. and 21s. each.
DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 20s.; and guaranteed.
BLACK MINERAL PAINT, very permanent, half the usual price; only 2s. per gallon.
PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 28s. per cwt. or 1s. per 4 lb.
G. BELL and CO. Steam Mills, 3, Wellington-street, Goswell-street, London.

BATH STONE OF BEST QUALITY.
RANDELL and SAUNDERS,
QUARRYMEN AND STONE-MERCHANTS,
BATH.
(DEPOTS.)
Great Western Railway Station.... PADDINGTON.
Great Western Railway Station..... BRISTOL.
Hope-street, Mount-pleasant ..... LIVERPOOL.
Castle-fields ..... MANCHESTER.
List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

Medieval Works,
Memorials,
Fonts, Screens, etc.
AT A VERY ECONOMICAL RATE.
SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-street, Pimlico.
MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.
A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS
A liberal discount to the Trade.
MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.
Circulars sent on application
N.B. The "Royal Blue" Omnibus passes the Works every ten minutes from the Bank.

TO BUILDERS, MASONS, AND OTHERS.
AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.
The large stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St Anna, Statuary, &c.
Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.
Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Hearthstones. Yorkshire Paving, Granite, Curb, &c.
And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.
All goods carefully packed and forwarded to any part of England.
JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the Trade in London selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement Plaster, Bricks, Tiles, Baths, Fire goods, Fire stone, &c. sold at the lowest possible prices for cash. Portland Pedestalstones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulins let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Borough-market, Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Normandy Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

SLATE MANUFACTURE, by STEAM MACHINERY, at BRINDLEY'S OLD ESTABLISHMENT.—Always on hand, a large assortment of useful size SLABS, of various qualities, and an extensive stock of ROOFING SLATES. Price lists may be had upon application, or sent by post.—Works and Wharf, Bermondsey-wall, Dockhead.

SLATE SLAB.—The whole, or part, of CARGO, containing 80 Tons, FOR SALE. Various thicknesses planed, with sawn edges.—For further particulars, apply to Mr. PROSSER, 11, Adam-street, Adelphi.

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By Professor Ansted.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension, the magnificence of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

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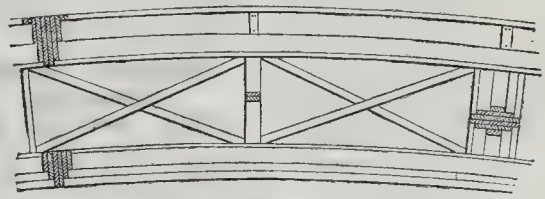
The Builder.

SATURDAY, MAY 21, 1853.

THE world has often heard of "Great days for Ireland," but we know of none that is more entitled to that epithet than Thursday, the 12th of May, 1853, which saw the consummation of an undertaking (calculated to increase immensely the industrial resources of the country, and advance its best interests), commenced and carried out wholly by Irishmen,—an undertaking which is the greatest exhibition of self-reliant energy in the right direction which the country has yet shown. Our readers are already acquainted with the circumstances under which it has been effected at the sole risk of Mr. William Dargan, one of the great captains of industry peculiar to our æra, and whose name will be ever worthily connected with his country's history,—none the less so either because there may now be reason to believe that the money he has expended, amounting, as we understand, to nearly 80,000*l.* will be returned by the payments of visitors. At the close of the opening day the subscriptions for season tickets had reached the sum of 14,700*l.* We will not stop to recapitulate the events of his progress in life, further than to contrast him, at one end of twenty years, as the superintendent of the works on an Irish railway, at a salary of a few guineas a week, and at the other with 60,000 men in his pay, conducting works of enormous magnitude, and amassing a colossal fortune. In carrying out his views he has been most ably assisted by Mr. P. C. Roney, whose energy, admirable temper, command of languages, and indomitable perseverance, have enabled him to surmount all difficulties, and to produce the successful result which thousands witnessed on the 12th.

The weather was magnificent, and the fine streets of Dublin, thus seen in their best, and crowded with visitors, must have astonished those who know Ireland only in connection with famine, misery, outrage, and murder, as set forth in the newspapers. Sackville-street, with its Nelson column, the Post-office, the Four Courts, the College, and the Bank, were prominent objects of interest. The latter, formerly the palace of the Irish parliament, is one of the most effective buildings, externally, of modern times. The original building was completed not longer ago than 1794, and yet its architect's name is forgotten! It is of the Ionic order, as most of our readers know, but when the House of Lords wanted a new entrance, they forced Gandon, much against his will, to put up a Corinthian portico. A casual inquiry has led to a record of the architect's annoyance. "What order is this portico, Mr. Gandon?" said a lisping dandy to him, when it was in progress. "Order," replied the architect; "why the *order* of the House of Lords, and be d—d to them!"

The crowd were all pressing one way, and that was towards Merrion-square, where the building for the Exhibition is erected. An external view and plan of this will be found in our tenth volume (p. 593): an interior view and section in our present volume (p. 8), and we give to-day another view of it as it now appears.* When our plan was published, it was intended that the structure should consist of three large halls, side by side, but the demands for space extending, and additional area becoming necessary, two other halls were added, making five, together with various other smaller apartments, and a long range of buildings at the back for carriages, models, and agricultural implements. The central hall shown in our view, is 425 feet in length, and 100 feet in height, covered by a semicircular roof upon trellis ribs, in one span of 100 feet. On each side of this centre Hall, and running parallel to it for the same length, are two halls 50 feet wide, with roofs similar to that which covers the main nave or hall of the building. The height from the floor to the roof of each of these halls is 65 feet. In addition to these three halls are four compartments of 25 feet wide, running the whole length of the building: two are placed between the Centre Hall and the side halls, and two on each side of the latter; divided into sections of 25 feet square, forming convenient spaces for the purposes of classification. Over these compartments are spacious galleries, also running the length of the building. To the south of the Central Hall, left of the spectator, is a hall devoted to foreign contributions; adjacent to which is the Fine Arts Court, corresponding in position to the Machinery Court. Branching off from the Fine Arts Court, are the Antiquarian Court, refreshment-rooms, and a court abutting upon the yard of the Dublin Society, usually occupied by farming implements. At the western end of the northern court are extensive refreshment-rooms, with a fountain playing in the centre. Light is effectively admitted from above. The construction of the building is strongly marked on the elevation, and forms in fact the ornamental character of the design. There are also external galleries which are attractive features on the exterior, and will be useful in providing access to the roof for repairs. The materials of the building, we need scarcely say, are iron, timber, and glass. There are 65 tons of 40 oz. ribbed glass in the roof-lights. The main ribs of the great hall are 25 feet apart, resting on trusses (a portion of which forms the roof of the adjoining gallery), and connected by a trussed wall-plate, as we may term it, which also forms the support of the intermediate ribs. The portion of the first-mentioned truss immediately under the arched rib is supported by two cast-iron columns, 5 feet apart from centre to centre, which again fit, with turned bearings, into cast-iron bases secured to rubble blocks. By this arrangement it will be perceived that the roof of the Gallery adjoining is constructed so as to act as a buttress. The main ribs of this and the other arched roofs have been already described, but the annexed engraving will serve to remind our readers that each rib of the main hall is divided into two portions, united together,



and kept as under, by timber struts assuming to some extent the lattice form. The upper portion of the rib is composed of ten thicknesses of plank, varying from 1½ to 2 inches, disposed so as to give the preponderance of strength to the upper side. The better to resist the tendency to extension that would arise from a force, as of wind, &c. acting on one side, the lower portion and main connecting struts are each formed of six layers of plank, also varying from 1½ to 2 inches thick; and to give additional rigidity to the connection between the upper and under portions, in the centre of the main struts, which occur 25 feet apart, sheets of plate iron, a quarter of an inch thick, have been introduced. As each rib was built, cast-iron shoes were applied to it, at intervals of 8 feet 3 inches, for receiving the purlins, which were T shaped (12 inches wide, by 12 inches deep, and 4 inches thick). Each was composed of a piece of plank, with two others spiked to its sides, at what was intended to be its upper edge, and shaped at the ends so as exactly to fit the cast-iron shoe affixed to the rib. The purlins were prepared on both edges to receive the intermediate ribs, which are left hollow, from the slight amount of duty to be performed by them. The columns under the arched ribs, 38 feet long, are in one casting, except the bases, which were cast separately and fixed in their places and levelled accurately. Both shaft and base being turned smooth and exactly fitting at their junctions, it only remained to drop the column into its place.

The boarding of the roofs is covered with canvass steeped in coal tar. A layer of brown paper was interposed to prevent the tar appearing on the under surface. It was then covered with boiled tar or mineral paint, and finally limewashed.

The flooring of the halls is formed of 3-inch deals, laid with a narrow space between them for the reception of dust, as was the case in the Crystal Palace. The galleries form, on the plan, squares of 25 feet each way, and are supported by wrought-iron trellis trusses, resting on projecting casts on the iron columns, which they serve also to connect together. Each truss consists of a top and bottom rail formed by two pieces of 3-inch by ⅜-inch angle iron, and is divided into three bays by similar angle iron uprights, which again are bound together by cross straps of 3-inch by ¼-inch flat iron. These gallery beams were carefully tested previous to any of them being fixed. The vibration is considerable, notwithstanding the introduction of wrought-iron diagonal tie bars. Each of the galleries is 325 feet long, and 25 feet broad. The northern and southern halls are 375 feet long, 50 feet broad, and 38 feet high to the springing of the arches, making the total height about 65 feet. The hall for the fine arts is 325 feet long and 40 feet broad. The hall for machinery in motion, which exhibits the same external appearance as that for the fine arts, is 450 feet long, 40 feet broad, and 26 feet high. Some of the work is roughly done,—the gallery-girders, for example, and the flooring, wherein the openings might have been kept more regular; but on the whole great praise is due to those employed.

As to the decoration; the prevailing colour is blue—all the flat spaces between the ribs being so painted. On the face of the ribs are thin lines of red, and the sides of the ribs are buff. More red might have been usefully introduced; but the want of this will be less felt if tapestry and carpets be hung in the galleries. Heraldic shields are painted in the spandrils of the arches, and banners are suspended above them. The iron columns are painted a dark flat blue, with white capitals. These would have been better lighter, as was evident in parts of the building where the painting was unfinished: being so dark, they are lost to the eye, and the appearance of stability is lessened. While on this subject, we may say that the exterior wants glass and

* See p. 329.

stronger colouring, to give it life; the latter will, we believe, be added—at least, in the roof.

The effect of the central hall, notwithstanding what we said above, is exceedingly beautiful. There is an organ at each end, sculpture on each side and in the centre, with fountains in progress. On the opening day an immense orchestra is occupying the end shown in our view, crowded with performers, who execute admirably a number of anthems. At the foot of it sit the Lord Lieutenant and the Countess of St. Germans, with dignitaries of all kinds around them; and a blaze of beauty, such as could scarcely any where else be seen, fills the whole body of the hall and the galleries. The Executive Committee are reading an address, and we hear the chairman say, in conclusion:—

"We most fervently pray that it may please Almighty God to pour down his blessing upon us, and to make this great undertaking the commencement of a new era in the history of Ireland, and that from the 12th of May, 1853, annalists may date a period when industry and public order, with their inseparable companions, happiness and wealth, shed their abundant blessings over this portion of her Majesty's dominions, and that when the traveller shall hereafter visit this neighbourhood, to inspect the birthplace of our greatest general, he may also view this locality with interest, where, by the increased enterprise and patriotism of one man, was gained the peaceful, yet not inglorious, triumph of industry and genius."

"Cordially I congratulate you on the completion of this great work," replies the Viceroy. "I concur with you in hoping that this Exhibition will show that, in several departments of art, Irish productions are already excellent, and that Ireland possesses several sources of wealth which are well worthy of further development. That it may please Almighty God so to prosper this undertaking as to make it the means of diffusing throughout the land the love of peace and industrious pursuits, is a prayer in which I earnestly and fervently join."

And then Mr. Dargan is taken up to his Excellency, and there is, as there ought to be, a shout of applause which shakes the building; repeated when he retires. And now the Architect is told to kneel, and there is a second shout, for he has been dubbed a knight with a blow of the sword so hearty that it might have frightened his amiable wife who stands by, and he rises Sir John Benson, for his good deeds,—a subject of congratulation for all members of his profession.

The Lord Mayor having made an address and received the expression of the Viceroy's hope that this Exhibition will fulfil the intentions of its generous and patriotic originator, by promoting the diffusion of industrial education, and the cultivation of the fine arts amongst all classes of the community, the orchestra pours forth the "Hallelujah Chorus," and the beginning is ended.

In the evening, the Lord Mayor of Dublin received at dinner, in the curious circular hall of the Mansion House, about 450 gentlemen, to meet the Lord Lieutenant. This hall was constructed in the time of King George IV. for a temporary occasion, but has done good service from that time to this. It is coarsely decorated in the arabesque style, and its high conical roof is cracked and weather-stained, but from its size, proportion, and the admirable manner in which it was lighted, the effect was very striking. The Lord Lieutenant, in the course of his speech, dwelt upon the value of industry, not merely as a means of producing wealth, but because it generates those habits of order, foresight, and frugality without which wealth itself is of little use, and he showed that industry was spreading throughout the land, and attributed much of the progress that has been made in manufactures to the Irish Schools of Design:

"I believe," said his Excellency, "I am warranted in saying that the progress which they have made is very remarkable, and that they have shown the aptitude of the Irish people to make very remarkable advances in all the arts of design. I believe that in many of the manufacturing districts of England young Irish persons who have been educated in these Schools of Design are now employed for the purpose of designing patterns, at very good salaries. I do think, therefore, that the encouragement of these schools will give a still further impulse to the progress of manufacture and industry in this country."

Mr. Dargan, when his health had been drunk with the grateful cordiality and vehemence to which the mention of his name was fully entitled, spoke with simple eloquence, and expressed his especial gratitude to the artizans and labourers employed. "They have used," said he, "the most zealous exertions, and have displayed the most generous feelings in carrying it out that ever I saw exhibited by men. During the last three months, often as I visited the building, very few agreed with me that the undertaking would be finished by the 12th of May; and there was not a single one of from 1,000 to 1,500 working men who did not well know that he had it in his power to embarrass us if he chose, either by irregularity or by combination, or some other impropriety of the kind, and so prevent the Exhibition from being open on that day. Yet, with that knowledge, they never did a single act during that time to annoy us in the slightest degree; and it is for that reason that I say we have received the most generous support from the operatives of Dublin. I believe I may say, in the presence of many from the other countries,—at least I myself believe,—that this could scarcely have happened in any other country."

The speech of the evening was made by Lord Granville, who has the happy art of praising without flattery and communicating information and opinions without "lecturing." In the course of his address, his lordship observed, "Before the building for the Exhibition in Hyde-park was opened, an eminent French architect came to us and expressed his admiration of the building, and of the manner in which the work had been carried out. He criticised some of the details, but he ended by saying that the thing which had struck him with the greatest admiration and astonishment—and which was a thing utterly unknown in France and other European countries—was, that there should be found private contractors able to carry out such works, relying solely on their own private means. And I believe it is, even in England, a modern innovation, that we find men undertaking such enormous works as they do now; and I can say this, that at the time of the Exhibition of 1851, when funds were comparatively wanting, it was an English contractor, furnishing the example of a grant of 50,000*l.* which enabled us to obtain further grants that took us successfully to our object. And now I find on coming to this country another instance of a similar result, effected by one of the same class of men,—contractors,—who, from industrious habits and enlarged operations, have arrived at the greatest possible liberality of feeling. He has displayed unexampled generosity and munificence in contributing, to the extent that he has done, money and time, towards the accomplishment of that which we saw to-day. We have heard that individual this evening in a speech of singularly simple and unaffected eloquence,—with that simplicity which so often accompanies intellect and moral endowment,—slurring over the part that he himself took in it, and after some graceful allusions to his richer fellow-labourers, make one of the most feeling and touching appeals that ever I heard on behalf of those meritorious Irish labourers who have enabled him to bring the work to a successful termination." With reference to the imaginative powers exhibited by the Irish, in their conversation, their writings, the works of their sculptors and their painters, the speaker said he believed that this faculty, directed by a sound art-education, will give us crowds of inventive designers from that country; and that Irish cleverness and English practical working united will be more than a match for all the nations of the earth.

We must now say a few words about the works collected. Many of the objects to be exhibited are not yet even unpacked, although vigorous efforts are being made to get the whole exhibition into shape, and wonders have been done since the opening. To issue a catalogue under these circumstances would have been useless, but it is now in type, and will soon be ready for visitors. Mr. S. C. Hall has published the first half of an illustrated catalogue of the contents of the building, containing nearly 200 wood engravings and six engravings on steel, at a very low price, which will doubtless find many purchasers. The first number of an *Exhibition Expositor* has also been issued: it is exceedingly well written, and promises to be of much service.

The sculpture in the Exhibition includes McDowell's "Eve," at the foot of the dais; Bailey's "Graces" (placed prominently in the centre); his "Tired Hunter," and "Eve at the Fountain; Foley's Figure of "Innocence" (for the Art Union of London); Marshall's "Dancing Girl reposing" (Art Union of London), and "Sabrina;" Noble's "Statue of the late Sir R. Peel" (certainly one of the best yet made); Kirk's "Figure of Sir S. Smith," original model for the statue in Greenwich Hospital; with various busts; the younger Kirk's "Group of Children and Dog," in marble; "Origin of the Dimple;" Lawlor's "Bathing Girl" (a life-sized statue, the germ of his statuette, "Solitude," selected by Art Union of London); and "The Struggle;" several works by Farrell, Bell, C. Moore, Earl, and others; an exceedingly clever "Figure of Mr. Dargan," by Mr. J. E. Jones, who also contributes two groups of "Children and Animals," a statuette of the Duke of Wellington, and about forty busts, including a fine head of the French empress. To Mr. Jones praise is also due for the arrangement of the sculpture. Mr. Hogan sends a "Figure of Hibernia," a "Drunken Fawn," and other works. There is also a very valuable collection of antiques, and copies from the antique, including a very fine centaur, from the collection of Sir Hervey Bruce, who has also sent what may be considered the greatest rarity in the collection, namely, a figure of a child, in marble, carried by a dolphin, sculptured by Raffaelle.

From France, there are Foyatier's "Spartacus," in bronze; Diendonné's "Jesus Christ in the Garden of Olives;" David d'Anger's "Young Drummer of the Republic;" and a group in marble, by Gairard.

From Belgium, Geefs sends Cupids in marble. Fraikin, "Captive Love;" "Psyché calling upon Cupid to come to her;" "The Cradle of Love;" Van Linder, a statuette of the "Virgin;" and Vandenbrouck, "Christ," in marble.

And then amongst those from Germany, we find Rauch's "Victory seated;" "Victory standing;" and a bust of Thorwaldsen; "Kneeling Genius, with Harp," by Kalide, of Berlin; a clever statue of "Minerva supporting a Warrior in Battle," by Blaeser; a statue of "Hercules wrestling with a Bull," by Kriesmann, of Berlin, cast in zinc, clever in many respects, but weak at the junction of the figures. Geiss, of Berlin, has casts in zinc, of an "Amazon," after Kiss, "Plenty," "Boy with sacrificial Cup," &c. Devaranne, of Berlin, other casts in zinc, of "Venus," after Canova; "Flora," "Faith," &c.

Considering that there is much to be done

with zinc for decoration, we learned the prices of these. The Venus, 6 feet high, is 16*l.* Flora, the same. A large angel in nave by Blaeser is 32*l.* The Vieille Montagne Zinc Company exhibit, in the French department (at present in embryo), a large number of small works in zinc.

Of the industrial department we can only specify two or three objects. Immediately on the right of the central entrance there is a very interesting set of specimens of Irish marbles, showing the richness of the country in this respect. The Carnkirk Company (Glasgow) exhibit some works in terra cotta, remarkably cheap, but of poor design. The terra cottas in the Zolverein department have suffered in the firing. Blashfield has some good specimens of terra cotta in the north gallery. The specimens of Valentia slate (Kerry) deserve examination; the cost of a cistern formed of it, to hold 450 gallons, is stated to be 3*l.* 12s. at Valentia. Near the case, formed of palm-trees seen in our engraving, Messrs. Tylor and Sons, of London, have, with many other specimens of their work, a beautiful casting of the wheel of the Wellington Car; and behind, Messrs. Kennard and Sons, of Falkirk and London, have some of the best iron castings for ordinary purposes, panels, arms, railings, &c. that we have seen for a long time.

The machinery cannot yet be judged of; but the arrangements for supplying motive power to the whole of the machinery are deserving of note. For the purpose of generating steam, two large tubular boilers are placed in a detached yard. From these, steam is conveyed to two engines, each of twenty-five horse power, supplied by Mr. Fairbairn, by which a shaft is put in motion, more than 300 feet long: this runs down the centre of the hall, and communicates motion, through the intervention of strapping, to the various machines in that department. The shafting is carried along the tops of cast-iron pillars, placed securely on stone foundations. The arrangement of this is due to Mr. Fairbairn.

The Fine Arts Hall is the great feature of the Exhibition, containing, as it does, the most interesting collection of works of art, for comparison, that has ever been brought together. It consists of 650 paintings, mostly of large size, besides drawings, and represents the British school, the ancient masters, the modern French, Belgian, Dutch, and German schools. Arriving as they did at different times, to hang them was a matter of difficulty; but, with the aid of Mr. Thomas Grieve, it has been satisfactorily effected. In the English department are many of the finest works of which we can boast, obtained only by great exertion on the part of the secretary. Danby's "Deluge," Wilkie's "Rent Day," Landseer's "Bolton Abbey," Mulready's "Rhubarb Merchant;" an early landscape by Turner, solid and beautiful; a charming Callcott, "The Old Port of Naples;" a wonderful bull by S. Cooper, and many others; still it must not be taken by foreigners as a complete representation of English artists. Maclise's "Witches," is not his most satisfactory production. E. M. Ward is but feebly represented; Eastlake and some others not at all at present. Barker's "Woodman," which attained an extraordinary circulation, and is perhaps as well known as any English picture is there, and Sir Thos. Lawrence's fine representation of "John Philip Kemble as Coriolanus." Concerning this picture, Lord Lansdowne mentioned to Mr. Deane, that meeting the painter one morning on the pier at Ryde, Lawrence said he was going to Apuldercombe, to see an early picture of his, "Kemble as Coriolanus." When Lord Lansdowne next saw him, and inquired what he thought of the picture, Lawrence replied, "I am glad I went to Apuldercombe; but it makes me melancholy to think how little I have gained in the mastery of my art since I painted it." The discovery is not novel, but the anecdote is valuable, as showing the artist's own appreciation of the picture. Sant's "Early Morning," stands uncommonly well, and Anthony's "Sunday Morning a Century ago" has benefited greatly by time.

In the French collection (small), we may mention a small picture of a "Lion Hunt," by Horace Vernet, and a "Bull," by Brascassat, as amongst the best.

The collection from Belgium, consisting of 158 pictures, is very fine, and has the advantage of being exceedingly well hung and arranged. It is quite evident that the committee in Brussels have exercised discrimination, and have been careful in sending only good works. The result serves to give a much higher place to Belgian art than any single exhibition of the year in that country would do. We foreshadowed the goodness of the collection in our brief note last week, and mentioned some of the best pictures. Keyser's "Charity" is a large work of high class; the sinking mother and children, the pitying alms-giver, and the surrounding group are beautifully portrayed. "Louis XVII. at the Cobler's in distress," by Wappers, is a painfully beautiful picture; and Gallait's "Temptation of Anthony" is of itself worth the journey from London to Dublin. A small picture by Ferdinand de Braekleer; "The Lacemaker," by Noterman; "Fidelity," by Van Eycken; Boulanger's "Gateway at Ghent;" the "Garde du Chasse," by Claes, and "Morning Prayer," by Tuymans, are small pictures of considerable merit. "Vigilus defying the Duke of Alba" is a larger work of considerable power.

The first picture sold in the gallery was one from this department, "The Market Cart Upset," by David Coll, of Antwerp,—clever and funny, but too much a caricature for our liking. It was bought by Mr. Phillips, of Cockspur-street. It is proposed to arrange an Art Union for the disposal of the whole of these works hereafter.

Madame Geefs Corr has painted "Ireland" somewhat drooping. After the present Exhibition, she may be represented more erect. Von Schendel's "Birth of Christ," with peculiar effect of light; Von Bing's "German Auction;" Eeckhout's "Candle-light Scene;" and a charming "Harvest," by C. Tschaggeny, should not be overlooked.

The collection of pictures from Germany is not so remarkable as that from Belgium; it includes a fine picture by Levin, "Esther and Haman before Ahasuerus;" but the gem is unquestionably a painting of the pier at Ostend during a stormy sea, by Achenbach of Düsseldorf; the water washing over the wood-work is marvellously painted. The same painter has a beautiful Sicilian landscape. The King of Prussia has sent a collection of portraits more remarkable for the persons represented—Rauch, Schinkel, Cornelius, &c. than as works of art. There are some clever landscapes by Max Schmidt and Seiffert.

The copies of the Vernon Collection, contributed by Mr. S. C. Hall, occupy some of the screens; and on another there is a lithograph, by Schenck and Macfarlane, of Edinburgh, from a clever drawing for the altar end of a church (including the apparition of the cross to Constantine), by A. Christie, which claims notice.

At the extreme end of the Fine Arts Hall Mr. Hardman and Mr. Myers are fitting up a Mediæval Court with stone altars, stained glass, and fine brasswork. The ceiling is decorated with stars and emblems on a blue ground, and lower panels contain armorial bearings.

In the Furniture Hall, adjoining this end of the Fine Arts court, and at present scarcely tenanted, Messrs. Hugh Bogle and Co. of Glasgow, are fitting up a mural decoration deserving praise in respect of its execution.

The Antiquarian court, which is but just now commenced, will form a most interesting feature. A cast of the ancient chancel arch from Tuam is being put up, together with others of ancient doors and windows,—apparently of a date previous to the Conquest, and wherein the ornaments have a Greek aspect particularly striking. At the entrance end of the nave are two ancient crosses, one from Kells, and the other from Tuam. The latter, as it is now put together (some missing parts restored), stands 25 feet high, and is so slight that it could scarcely have resisted wind and weather without extraneous support. We should think it could scarcely have been so high originally.

We hope we have said enough to induce many of our readers to visit Dublin while the Exhibition is open. Both pleasure and advantage will be gained; prejudices will be dispelled, both countries benefited, and we shall be able to speak with truth of

The United Kingdom.

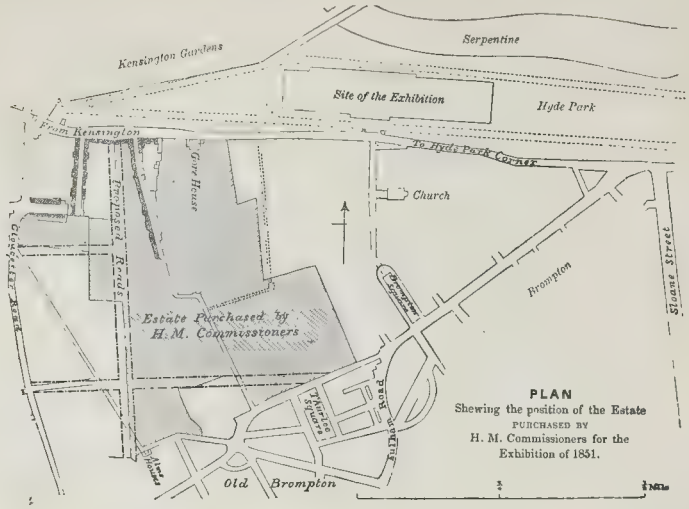
NEW HIGH-WATER LANDING-PIER, MARGATE.

About seventeen months back an advertisement appeared in this journal calling for plans for a high-water landing-pier to be erected at Margate. The necessity for such a work had become obvious to every one connected or acquainted with the town. The present jetty of wood, erected in 1824, had become quite inadequate to the wants of the inhabitants. Its appearance was such as to throw it far behind all other places of a like standing; and, still more serious inconvenience, it had become a very serious charge to those who had to keep it in repair, which duty fell on the Margate Pier and Harbour Company; but this body, feeling that it was impolitic for them to perpetuate a structure so far behind the times, at length resolved to erect a new pier more in accordance with the wants of the inhabitants, and this they decided to do without calling on the townspeople to contribute any portion of the expense, although the great benefit to be derived by the town from such a work was beyond dispute. In January last a number of plans were submitted to the directors, from which they selected that of Messrs. J. B. and E. Birch, of Cannon-row, Westminster. This plan was submitted to Mr. Rendel, whose opinion was such as to warrant the directors in carrying out the proposed work. After various delays, arising from causes over which the directors had no control, tenders were called for; the lowest being from Mr. S. Bastow, of Hartlepool, he was at once chosen to execute the works; and on Tuesday, the 3rd inst. the first pile of this important structure was placed in its destined position. The day was observed as a holiday in the town, and a large concourse of persons assembled. The chairman of the pier directors (G. J. Hunter, esq.) officiated on the occasion, assisted by the clergy and magistrates, and the officers of the pier and town, together with the engineers and contractor.

The proposed work will extend about 1,230 feet into the sea, and will be 20 feet in width, generally, extending to 40 feet at the head, with an entrance 80 feet in width, gradually decreasing to the first-named dimension: the elevation will be 14 feet above the high-water line, with lower landing stages and every convenience for pleasure-boats and luggers. It will be constructed in bays, measuring 72 feet from centre to centre,—the pier formed by clusters of piles, and connected by iron plate girders: the head will be of iron screw piles and timber bracings, with lower platforms to suit the variations of the tide; and in every respect it is hoped that this important work will answer the expectations formed of it.

On the occasion of the driving of the first pile, a public dinner took place at the Town Hall, which was presided over by the chairman of the pier directors, and at which the clergy and magistrates, the gentry and townspeople attended,—alike showing an interest in a work which was intended equally for the benefit of all.

LAND FOR PROPOSED INDUSTRIAL UNIVERSITY.



THE LAND AT KENSINGTON PURCHASED BY THE ROYAL COMMISSIONERS.

We have already described in detail the exact position of the land in Kensington which has been purchased by the Royal Commissioners for the Exhibition of 1851 (see p. 241, *ante*), but a plan of the spot speaks in such a case so much more clearly than words, that our readers will doubtless thank us for giving them one.

We have only to add that the land between the proposed road north and south and the Gloucester-road has been laid out for building, and is now in the market.

THE WAGES MOVEMENT.

At Exeter upwards of 300 of the carpenters, bricklayers, and plasterers have struck for an increase of wages. Several meetings have been held; and it was at first resolved to demand an increase of 3s. a week; but as several masters offered 2s. it was agreed to reduce it to that amount. Upwards of twenty-five masters have consented to the increase asked for.

The Devonport builders met on Thursday in last week, at the Mechanics' Institute, to consider the request of the journeymen masons for an advance of 6d. a day to their present wages. Most of the builders of the town were present, and it was unanimously resolved "That the wages of good masons shall be 17s. a week, and the charge to employers 20s. a week, allowing to masters the usual profit of 6d. a day; and also before any further advance is made the builders of Plymouth and Stonehouse shall be invited to attend a meeting to be held at Stonehouse (being central), to determine what shall be the rate of wages throughout the three towns." The meeting was adjourned to 19th inst.

At Swansea, the application made by the journeymen house-painters to their employers not having been acceded to, the men struck, and notified to the public that they were themselves prepared to execute work at 4s. a day. A meeting of master painters was held, and three of them acceded to the men's demand of an additional 3s. a week; since which the other masters have agreed to give the advance demanded, and the men have consequently returned to work. We believe that the masons and joiners, who suspended work some time since, had not yet, in course of last week, come to terms with their employers, and were still out. Several meetings had been held.

The Birmingham carpenters and joiners having asked their employers for an advance of 2s. a week, with short time (four o'clock) on Saturdays, a meeting of master builders was held, when resolutions were passed recommending that the wages of good workmen be advanced 3d. a day, and that their labour cease every Saturday at two o'clock, on condition that from Monday to Friday, inclusive, the time of work be from six to six, with time for breakfast and dinner. A numerous meeting of the men was held, when resolutions were adopted, declining to accept the rise of 1s. 6d. "to such men as they may choose to call good workmen, it being partial in its application, and inadequate in its amount;" declining also to accept the alterations of time proposed, as being in no way beneficial, while possibly detrimental to the trade generally, and again respectfully requesting the masters to reconsider their application. An amendment to the last resolution was proposed, giving employers the alternative of a rise of 6d. a day, with the present hours, or of 4d. with cessation at four o'clock on Saturdays; but the meeting was opposed to any alteration of the original terms. Decided opinions, supported by arguments which met with the approval of those present, were expressed against the proposed half-holiday, as being "a boon" not likely to benefit the trade, however advantageous it might prove to the keepers of public-houses. Each speaker impressed on his fellows the necessity for abstaining from anything like violence or coercion. The local *Journal* says, that one of the principal firms in the town, whose decision will probably regulate the trade at large, has declined to make any alteration in the original offer with regard to wages, or any change in the present hours of labour.——The early closing movement is progressing here, notwithstanding what the carpenters and joiners say of it. The committee have issued a circular, in which they say that in some cases short time on Saturday would only afford more time and opportunity to be spent in drinking-houses, but think it hard that the innocent should suffer with the guilty. They declare, moreover, that the number of the debased is rapidly diminishing, and that more enlightened means of amusement and recreation are on the increase, and they intend to endeavour to obtain access free on Saturday afternoons to the Botanic Gardens, in order to promote the benefit to be derived from the short time movement, the carrying out of which at Manchester, they observe, has led to no such mischiefs as some seemed to dread, but, on the contrary, to much good, as evidenced by letters from Messrs. Fairbairn, Elkington, and others, which appear in their circular. The short time is proposed to be made up by additional work throughout the week.

The brickmakers in the Stockport district struck for an advance of 2d. a thousand, being the amount deducted from their earnings last season. Most of the masters have agreed to the demand.

The Lancaster joiners ceased work on Monday week, in consequence of the refusal of the masters to advance their wages 2s. a week, and shorten the hours of labour two hours during same period. Several meetings of the masters have been held; but, owing to many of them having contracts, the demands of the men have been refused. A compromise, offered by some of the masters, to cede one-half of the demand, was unsuccessful. About thirty of the joiners have already left the town: the remainder have also intimated their intention of going, should the matter not be amicably adjusted.

In the Newcastle-on-Tyne district, all classes of skilled labourers have been demanding an advance on the price of their industry, and, as trade is brisk, the masters have not demurred. The wages demanded by bricklayers, and the other operatives engaged in house-building, have, with the increase in the value of materials, tended to check speculation in that branch of industry, more especially in the erection of new dwellings in the suburbs of this and the neighbouring towns, where the builders have a narrow margin of profit.

The New York and other United States' workmen have also had their strikes. "An Old Cornishman," writing to the *Liverpool Journal*, says:—The wages here, compared with Europe, were deemed enormous; yet the working men, not content, have had their strikes, and raised their pay from fifteen to twenty per cent. on the old prices. In New York, Philadelphia, Baltimore, and Washington, where provisions and rent are higher than in the interior, wages are proportionately higher than elsewhere—say thirty per cent.: the wages remunerate better in the interior than in the larger cities. Wages demanded and received by mechanics, &c., at the present time:—Carpenters, 2 dols. a day; masons, 2 dols.; plasterers, 1 dol. 75c.; house painters, 1 dol. 75c.; slaters, 2 dols.; roofers, 2 dols.; stone-cutters, 2 dols. 25c.; upholsterers, blacksmiths, coppersmiths, plumbers, workers in mahogany, &c., make from 2 to 3 dols. a day; day labourers, from 1 dol. to 1 dol. 25c. Stone-cutters, masons, carpenters, all do well here, and get ready employ. Hundreds enter as soldiers, and do well; they get twelve dollars a month, and are found and well provided in clothes and food, and the service is easy, and

little exposed. Deduct thirty per cent. from the prices stated, and you have the rates in the interior generally. Labourers on railroads are employed by thousands, at eight dollars to ten dollars a month, and found; or seventy-five cents a day, and find themselves—equal to twenty dollars a month. These are strong-shaped Irish, German, and English country boys. The United States are in a very thriving condition, and there never was a better time for hard-working adventurers.

In justice to ourselves I wish to call your attention to a paragraph in the *Builder* of the 7th inst. respecting the demand made by the carpenters of Brighton upon their employers for an increase of wages. The town is one of the most flourishing in the kingdom: being a fashionable watering-place, rents are very high and provisions dear. Imagine a mechanic receiving 24s. per week for the summer months, and from 18s. to 1*l*. the greater part of the winter, paying from 5s. 6d. to 6s. per week for two unfurnished rooms, 1s. 6d. per cwt. for coal, and all articles of consumption proportionately dear. He has himself and family to clothe and keep: remember there is no gentleman's wardrobe to supply us from: what we wear we must buy (this for men who served seven years' apprenticeship, with scarcely any remuneration for our services), and who can say they have no cause for complaint, when for a journey that will cost him 4s. 2d. he can obtain 6s. per week more wages, work less hours, rent about par, and provisions considerably cheaper. Can he know this, and yet be satisfied? What it cost us for tools to earn this enormous salary would allow many trades better paid than ourselves to enter into business. The mechanic's home should be where he can obtain the highest remuneration for his labour; but there are many, through incumbrances, that cannot leave their present homes, therefore, it is the duty of those that can to leave, so as to compel the masters to submit to a fair and just demand, rather than strike: such a thing was not contemplated by the men, only imaginary by the master: it would not have met our ends, as the poorest must be the greatest sufferers; but the man has no right to continue to work for 4s. if he can obtain more elsewhere; he has no more right to work for it, if it cost him 4s. 6d. to live, than the master has to take work at a loss, for both are defrauding not only themselves but their fellow-men. The combination was of the masters, not the men, to give a flat denial without a hearing, thinking thereby to daunt the men from taking any further proceedings, in which they have signally failed: they have made the rod for themselves, which will sit very close to them this summer, as they cannot make men to build a house in so short time as they can make builders to throw one down,—they are not so easily made as master builders. Let masters know their men as rational beings, as susceptible of a wrong as themselves; they are not such a degraded set of beings as to wish to live in such dens of iniquity as were lately shown through your valuable paper: such are staring them in the face, or the County Court, for at their present wages they cannot live in that position which is befitting the social and moral condition of a mechanic.

A WORKMAN.

The following lines, from a recent number of the *New York Literary World*, will not be considered inappropriate:—

STRIKE!

I've a liking for this "striking,"
If we *only* do it well;
Firm, defiant, like a giant,
Strike!—and make the effort tell!

One another, working brother,
Let us freely now advise;
For reflection and correction
Help to make us great and wise.

Work and wages, say the sages,
Go for ever hand in hand;
As the motion of an ocean,
The supply and the demand.

My advice is, strike for prices
Nobler far than sordid coin;
Strike with terror, sin, and error,
And let man and master join.

Every failing now prevailing
In the heart, or in the head,—
Make no clamour,—take the hammer,—
Drive it down, and strike it dead!

Much the chopping, lopping, propping,
Carpenter, we have to do,
Ere the plummet, from the summit,
Mark our moral fabric true.

Take the measure of false pleasure;
Try each action by the square;
Strike a chalk-line, for your walk-line;
Strike, to keep your footsteps there!

The foundation of creation
Lies in truth's unerring laws:
Man of mortar, there's no shorter
Way to base a righteous cause.

Every builder, painter, gilder,
Man of leather, man of clothes,
Each mechanic in a panic
With the way his labour goes:

Let him reason thus in season;
Strike the root of all his wrong;
Cease his quarrels, mend his morals,
And be happy, rich, and strong.

RALPH HOYT.

IMPROVEMENT OF DWELLINGS.

THE following miscellaneous notes on this subject will show that the improvement of dwellings, of the poorer classes especially, is a subject which is gaining ground daily, and obtaining increased attention, not only in this country, but on the continent, and in America.

In the House of Lords last week, it was resolved, on a motion by Lord Shaftesbury to consider the report of the select committee on the subject of dwellings for the labouring classes, "That before the first reading of any Bill for making any work, in the construction of which compulsory power is sought to take thirty houses or more inhabited by the labouring classes in any one parish or place, the promoters be required to deposit in the office of the clerk of the Parliaments a statement of the number, description, and situation of the said houses, the number (so far as they can be estimated) of persons to be displaced, and whether any and what provision is made in the Bill for remedying the inconvenience likely to arise from such displacement, in order to its being made a standing order." Lord Shaftesbury stated, that by letters he had received from Mr. Cubitt and another, he was satisfied that this was the best regulation that could be adopted under the circumstances.

The council of the Royal Agricultural Society of England had a discussion on 27th ult. on the improvement of the water supply, drainage, &c. of cottages, called forth by a paper on Cottage Wells and Pumps, read by Mr. Slaney, of Walford Manor, Salop, late M.P. for Shrewsbury. Mr. Slaney described a cheap mode of forming pump-wells for cottages adopted by him, and consisting of the sinking of an iron cylinder, or series of cylinders, by help of a boring augur, to a depth of some three to seven or eight yards, in many soils not of a rocky character. The cylinders are half an inch thick, and 5 inches clear in internal diameter, in lengths of about 4 feet; the bottom one bored with holes round the sides; and when sunk to the water, the whole is fitted up with a leaden pipe and pump apparatus of a cheap description, the sinking and fitting being generally done in a single day, and the well in all being made at an expense of 3*l*. 10s. to 5*l*. Mr. Slaney also referred to the conducting of water from springs on higher ground to lower positions by means of tubular drain-tiles, and to the great importance of draining well the site on which a cottage is to be built, particularly in the case of clay lands, the walls built on which for a long time exude moisture. Red sandstone as a building material was also liable to produce this effect. This exudation might easily be prevented, by inserting above the first or second course of masonry a slate, slanting a little beyond it, which cut off the communication between the walls and the foundations, and prevented the dampness from ascending. He alluded to the glazed tubes recommended by the Climbing-boys Commission, in the construction of chimneys, as leading to less accumulation of soot, and effecting a better draught and consequent ventilation; and also called the attention of the members to a simple air-flue, which might at no expense be made in the building of cottages at the back of the kitchen fire, by means of which warm air might be circulated through the adjoining apartment, where clothes might be dried, and through the floors to the upper rooms.

A meeting for the promotion of the erection of improved dwellings was held at Plymouth on 22nd ult. when Mr. Damant, architect, submitted plans, prepared gratuitously, but with the understanding that it was not sought to pledge the meeting either to architect or site. The plans were for a building to accommodate forty-eight single men, with wings for twenty-four families, and provision for extension, as circumstances might require. They provided a living room, a large bed-room, and two smaller bed-rooms, a water-closet, scullery, &c. for each family, and it was proposed that there should be a common stone staircase for each pair of dwellings, so that there would be four staircases for the twenty-four families. Provision was also made for washing and cooking establishments. The estimated cost of the buildings, which included allowance for fittings, &c. was 5,300*l*.; cost of site, 1,100*l*. A return of 6 per cent. was calculated on. The meeting appointed a committee to draw up a report to an adjourned meeting.

The French Emperor appears to have had his attention and interest engaged, while living in this country, in the improvement of the dwellings of the working classes. The Paris correspondent of the *Times* says,—"I am assured that there are two projects of decrees now before the Emperor, to one of which very probably the imperial signature has been by this time affixed. The object of one of these projects is to authorise the formation of a company for the construction, on an immense scale, of lodging-houses for the operative classes. The company, I am told, will be guaranted 4½ per cent. on their outlay, but the administration, that is, the Government, will have the power to fix the maximum of the rent to be charged for the rooms. For a night's lodging and a single room, 20 centimes, or 4 sous, will be the maximum. These immense buildings are to be erected in the finest and healthiest quarters of Paris, in the immediate neighbourhood of the railroad termini. They will be furnished with wash-houses, bathing places, gardens, walks, &c. and otherwise provided with every comfort suited to the class for which they are intended, and to whom the apartments will be let out, furnished or unfurnished, at a moderate rent. A similar undertaking fo the accommodation and comfort of the subaltern *employées* of Government offices, and the *petits rentiers*, whose means are limited, is also to be entered upon. The healthiest spots will be selected for these buildings, and they will have the advantage of gardens, baths, and other comforts; it is even said that eating-houses will be comprised. Here also a certain amount of interest will be guaranteed; but, as in the former case, the Government will have the power of fixing the maximum of rent to be charged. * * * The poorer classes have suffered a great deal from the vast improvements that have been going on, and are still going on, in Paris, and precisely in the quarters inhabited by these classes. Those narrow and filthy streets, with over-crowded and unwholesome houses, are being swept away, and it is calculated that already not less than 1,500 houses have been levelled to the ground in these parts of the city. The consequence is that the working men, who were the principal tenants, hav been obliged to move elsewhere, and the disa pearance of such a mass of buildings has h the effect of raising to an exorbitant degrad house rent in every quarter of Paris. I a assured that the Emperor, who has been lonm engaged in the study of the projects in questiong is determined on authorising the companies, alluded to."

An immense lodging-house is about to be erected in New York, where the hotel system seems to have been fast superseding that of private dwellings for some time past. Accord- to the *New York Tribune*, the lodging-house alluded to is to be erected on the Fifth-avenue, somewhere between Thirtieth and Fortieth street. Its height will be eight stories; and its dimensions on the ground 200 feet square, with a court-yard in the centre, entered by a *porte cochère*. The exterior will be of iron, with inner walls and partition walls of brick; it will be thoroughly fireproof in every part; furnished with *apparatus* to transport the occupants from the ground to the eighth or any intermediate story; replete with gas, baths, water-closets, ventilators, and every modern convenience; arranged in suites of apartments of different extent, to be rented furnished or unfurnished, as may be desired, at rates varying from 300 dollars to 1,000 dollars a year, with a restaurant from which meals will be served to order at reasonable prices to those who prefer to take them in their own rooms; with promenades on the roof or in a garden 50 feet by 200 feet below; with gymnasiums and ten-pin alleys for ladies and gentlemen, and a conservatory of flowers, read-

ing-rooms, ball-room, conversation-rooms, and every other convenient appendage to so large an establishment. The house will accommodate about 1,000 persons. The establishment will be erected by a joint-stock company, incorporated under a general law recently passed. Its cost will be 400,000 dollars, of which 125,000 dollars will be required to buy the land.

ON THE CONSTRUCTION OF MODERN DWELLING-HOUSES.

SITTING-ROOMS IN THE BASEMENT.

Your correspondent "H. D." (page 260) states his case, and asks for information, in such a philanthropic and charitable spirit, that, feeling as I do great interest in all matters connected with the subject, and being desirous of contributing my mite of information to the general stock, I am induced to trouble you with the following reply; and as I am fully persuaded that on this, as well as on any other subject, we may differ without disagreeing, I may say at once, I differ with "H. D." entirely; believing, as I do, that the placing of a sitting-room in the basement of a house is not a disadvantageous arrangement; but, on the contrary, if properly carried out, an advantageous one. At the same time, I am free to admit, that the evils complained of do exist to a serious extent in a certain class of houses built about town at the present day, where this plan has been introduced; but then, I contend, they are attributable to the grasping avarice of a certain class of house-proprietors, or to the shortcomings of reckless or unprincipled contractors, or to both causes combined, and not to the arrangement itself.

To insure this advantage, the external walls must be properly built, and due provision made for drainage; the apartment must not have less than the usual height between floor and ceiling given to similar rooms on the ground-floor; it must have a chimney, and lastly, a window, with the top not less than, say, two feet above the surrounding surface of the ground, with the top sash made to open; and these will comprise all the provisions we can at present expect to find made in the important matter of ventilation, but which, it is to be hoped, will ere long be better understood; and then its advantages will be duly appreciated.

The objections raised by "H. D." are arranged under five separate heads. These I propose to take *seriatim*, to give to each a short reply as I proceed, and to reserve my opinion on the advantages of underground apartments by way of conclusion.

1. "The lowest stories of a house are precisely those in which carbonic acid gas is most likely to linger." Undoubtedly they are, when it approaches its natural density; and so are deep wells and coal-pits likely places to find it in; but then we know the source whence it gets into them; and this our apartments are, or may be, made proof against; while the small portion generated from other existing sources, is, by a provision of an omniscient Creator, always accompanied by heat, and thus mingling with the warmed air of the apartment, is expelled up the chimney by the purer, and, from a like provision, heavier external air pouring into the apartment. The proximity of such apartments to the cellar may be taken advantage of to improve the ventilation.

2. The escape of noxious gases, from the imperfections of drains, which necessarily traverse this part of a house, is very dangerous; but as this danger can only arise from imperfections, they should not be suffered to exist.

3 "The free admission of sunlight is of the greatest importance to the healthfulness of an apartment." And so it is to the cheerfulness of it. But I cannot help thinking there must be many an underground apartment about town that gets as much, and perhaps more of it, than many others that are above-ground; while the great pains taken in houses of every class to exclude the sun's rays from all apartments which would otherwise be subject to his visits, lead one naturally to suppose they are looked upon as an intrusion, or an inconvenience.

4. "The difficulty of procuring efficient ventilation" is, I think, not necessarily increased by partly imbedding an apartment in the earth, or surrounding it with a wall or bank, the relative height being observed, which I have before stipulated for, over which the external air may pour its continuous flood, either immediately into the apartment, or through the passage above, by the staircase communicating therewith.

5. "If any part of a house be damp, it will generally be that which is nearest the foundation. Damp, therefore, is a frequent, although not a necessary, attendant in underground rooms." This is a candid admission, and the exception applies, as I have before shown, to each and all of the other objections.

In order to adapt underground apartments for occupation, they must be properly constructed, and of good, sound materials; the drainage must be carefully adapted, not only to the requirements of the house, but to the nature of the soil on which it is to stand, with proper traps to all inlets. A due regard to these essentials will not entail an additional outlay of more than a few pounds when the house is about to be built; but the neglect of them will entail endless cost and inconvenience, and perhaps can never be remedied afterwards.

The special advantages which I claim for apartments in the basement, when properly constructed, are, a greater uniformity of temperature over those above-ground, less annoyance to the inmates from currents of cold air, or *draughts* so called, the greatest amount of purity in the air naturally supplied to them; while, as I have before said, I am free to admit that these benefits are too often counteracted by the prevalence, among landlords, of a greater interest in rents and profits than in the health and comfort of their tenants.

The first of the above-recited advantages struck me very forcibly, while on a visit at New York, where the extremes of heat and cold being greater than with us, it is, or was, a very common practice, in many of the best houses, to fit up the front apartment in the basement as a dining-room; the advantage in point of temperature being obvious, independent of that of contiguity to the kitchen. Even in our own country, in the hottest weather of summer, the refreshing coolness of a good dry cellar must be familiar to most of us. Then, in the very heart of London, it is not to be denied, a numerous and useful class of domestics pass a great portion of their lives in the light and airy underground apartments of town houses, apparently in the full enjoyment of health and spirits.

W. Wilds.

ERICSSON'S CALORIC ENGINE.

My attention has been called to a statement in your Journal, from the pen of Mr. John Braithwaite, in reference to the caloric engine.

I much regret that my labours in perfecting this important matter should have called forth Mr. Braithwaite's disapprobation, through your columns,—yet I am fully compensated by the fit opportunity this circumstance affords me, of acknowledging, through the same respectable channel, my gratitude to Mr. Braithwaite for past kindness. On my arrival in England, twenty-six years ago, it was my good fortune to meet with his approbation and friendship. In the various mechanical operations we carried out together, I gained experience, which, but for his confidence and liberality, I probably never should have acquired. In relation to the caloric engine, it so happened that we were not connected. The machine was simply manufactured at his establishment, to my plans. I need hardly add that it was well done, for everything that left his works was characterised by perfection of workmanship.

In regard to the original form of my caloric engine, and the operating with condensed pressure, Mr. B. may feel assured I have not abandoned either, as he will find, ere long, when welcomed on board of the caloric ship in British waters. As to the new form of my engine, when Mr. B. shall have had an opportunity of looking a little more closely into the matter, I trust he will find something to approve of. The dispensing with any other heater than the bottom of the working cylinder, certainly secures great simplicity of construction; and that so small an extent of heating surface suffices proves the wonderful efficiency of the regenerator. The difficulty of lubrication, supposed by Mr. B., does absolutely not exist in the present engine, for during seventy hours' constant working of the machinery of the caloric ship our piston packings scarcely reached boiling temperature. The single action, open cylinders and the great distance between the packing and the heated part of the cylinder, account for this. Mr. B. overlooks entirely the great simplicity of the new form of my engine, and its universal applicability, and evidently does not consider the important fact that it requires no water or other cooling medium. How unlike is this, as in all other important features, to Stirling's air engine.

The caloric engine is destined—the efforts of its opponents notwithstanding—ere long, to be the great motor for manufacturing and domestic purposes, from its entire freedom from danger alone. It is destined assuredly to effect much in dispensing with physical toil to the labourer. The artizan of moderate means may place it in his room, where it will serve as a stove while turning his lathe, at the same time purifying the atmosphere by pumping out the impure air and passing it off into the chimney: in fine, it will heat, toil, ventilate, and always remain harmless. All this will soon be proved in practice, and it is hoped will save critics from racking their brains to discover theoretical mistakes and practical imperfections.

New York. J. Ericsson.

THE SHUT-UP BURIAL-GROUNDS.

Long sought for and long promised, the discontinuance of interment in crowded districts has at length been decreed,—the devouring charnels and church closes, the sarcophagi of the Strand and other thoroughfares, are to be sealed, and many of the urban and suburban graveyards partially so. With regard to several churchyards, there is an end to mortuary fees, and a wise interdict has limited others (such as St. John's-wood, &c.) to portions of the ground, until parochial providence shall procure fitting places of sepulture at a distance, when it is to be hoped that the practice of intramural interment will be wholly abated. Nevertheless, the St. Paul's last week there was one interment!

Meanwhile, in the interdicted burying-grounds a strange revolution is apparent,—the little hillocks are fast disappearing, and over wide ranges of the domains of death the surface is upheaved and levelled,—the little mounds adorned with turf, with now a willow, then a cypress,—here, in the coming May, the violet,—the lily there, most cherished emblem of departed youth,—all—all are levelled; and the *pauper* mourner, when he strays to shed a soul's affection o'er the grave of kindred or of love, is lost and wildered.

Long as the mound endured, the token flowers did note the resting-place, until some later tenant of the soil displaced the pious tribute: even then, returning love would plant heart's-ease on the rank clod, and thus essay perversely to preserve a pure devotion to the lowly tomb! A monument like this,—the plain forget-me-not the lowliest flowret, is as holy an offering to the dead as marble structures.

Now the silent mourner seeks in vain the mortal resting-place of those who sleep. What means the *levelling?* Is it to dress parterres or now that profit maketh no return from annual tenants of the same 6 feet by 2, that all are equalized in clayey death? All must "leave the warm precincts of the sunny day," but there is for the humblest a sanctity in death that claims respect even from the sacristan.

Oh! disturb not a sod from the verdant or flower-grown heap of sorrowing affection,—at least let a lustrum pass,—let time reconcile the mind to bereavement: to blot out every trace is barbarous; and still more hard because the visitation falls on those alone who have small solace in a stinted lot: the tombs, the headstones of the higher class, remain intact!

If the spoliation goes on, what can be expected but an insurrection of shades, "squeaking and gibbering in the London streets?"

Q.

PROVINCIAL NEWS.

Warley.—On Tuesday in last week, the chief stone of a new district church was laid in Warley parish, Essex. The building is considerably advanced. It is in the Early English style, with an apse in place of a chancel. Mr. Teulon furnished the design. The material is red brick, diversified by courses of black brick, with Bath stone dressings. The builder is Mr. Hammond, of Brentwood, and Mr. Thomas Chalk clerk of the works. The cost will be about 4,200*l.*; of which, 800*l.* yet remains to be raised.

Canterbury.—A site has been provided by the Rev. Dr. Warneford, at a cost of 3,000*l.*, and he gave 4,000*l.* towards the erection of a new clergy orphan school for boys; and also 6,000*l.* to found scholarships. His name also appears for 100*l.* in the general list of subscribers to the building fund. The Bishop of Gloucester and Bristol has also subscribed 100*l.* to the building fund.

Healey.—A considerable sum is accumulating for the repair, enlargement, and other alteration of the parish church. A public meeting on the subject was held on the 6th inst.

Birmingham.—School buildings were commenced on Wednesday in last week, to accommodate 500 boys, girls, and infants, at the junction of New Irving-street and Bow-street, St. Thomas's parish. The foundation stone was laid by two of the children from the Infant School, and the expense of the buildings will be defrayed by the rector of the parish.

Liverpool.—Mr. Staite's electric light has been exhibited from the new tower lately erected on the Prince's Pier; and, according to the *Liverpool Chronicle*, it is giving great satisfaction, though all the arrangements were not completed. The apparatus of Mr. Stevenson, the engineer of the Scottish lighthouses, for the diffusion of the light over a quadrant of a circle, will shortly be added.

Darlington.—The members of the Institution here have taken steps for the erection of a suitable building, and raised upwards of 1,100*l.* towards defraying the cost (estimated at upwards of 2,000*l.*); 700*l.* of this sum, according to the local *Times*, having been subscribed by two ladies,—Miss Pease, of Feethams, 400*l.* and Mrs. Barclay 300*l.* On Thursday in last week, the foundation stone of the building was laid in Skinnergate. The building will contain a lecture hall, capable of holding 600 persons, with a suitable reading-room, library, class-rooms, committee-room, and accommodation for an attendant to reside on the premises. The architect is Mr. Joseph Sparkes, of Darlington. The lecture hall is for the joint use of the Mechanics' Institution and the Temperance Society.

Wigan.—A plan by Mr. Lane, for a new covered market, has been adopted by the market committee. Mr. Lane proposes a market 75 yards long, and 51 wide, covering an area of 3,825 square yards, being 14 yards longer, and 14 wider than the Blackburn market-house. He intends the market to have five aisles, the centre one to be wider and higher than the others; each aisle to be lighted from skylights of rough plate, fixed in an iron roof. The architect puts down the cost at 7,400*l.* The cost of the land is estimated at 11,000*l.* To this must be added the rector's tolls, which it is thought will increase the total cost to 25,000*l.* This amount, will, however, be lessened by sales of slips of land on the projected site, and nearly all frontage. The main entrance it is proposed to reach by a street from the market-place, twelve yards wide.

Rotherham.—The church spire is undergoing repair, under the superintendence of Mr. Samuel Brown, of Sheffield. A son of Mr. Brown and a workman, while at work, are simply suspended to the sides of the spire. They are thus replacing the crockets in the octagons. The tower of the church wants pointing, and the west end needs repairing.

Penrith.—The water works here are now in rapid progress: a considerable length of the main pipe has been laid through Carleton Holme, and the reservoir, contracted for by Mr. W. Grisenthwaite, commenced.

Glasgow. — Extensive alterations have been made in the British Linen Company's Bank. The Doric columns have been removed from the telling-room, to give place to fluted columns of Corinthian order, with a suitable entablature, and the heavy pannelling of the ceiling has been replaced by a light style of ornamentation. The oak screen, enclosing the official portion of the room, has been taken away, and an electro-bronze railing substituted. The chief feature of the improvements is the cupola, which has been erected in place of the square lantern window which formerly lighted the apartment. This cupola is composed of twelve lights, each about 18 feet high from base to crown, and without any horizontal ribs. Each light is occupied with a female figure, in outline, representing one of the twelve months of the year, with zodiacal and floricultural accompaniment. The glass work was executed by Messrs. Ballantine and Allan; plaster work by Mr. James Steel; wright work by Mr. Duncan M'Callum; railing by Messrs. Robert M'Comel and Co.; and painters' work by Mr. Arnott. The architects are Messrs. Black and Salmon.

ST. ANNE'S CHURCH, HIGHGATE-RISE, KENTISH-TOWN.

THIS church, which was consecrated a few days ago, has 600 sittings, 110 of which are free. The cost of the building is about 6,400*l.* without the gas, hot-water apparatus, laying out the ground, fences, &c. which amount to 600*l.* making a total outlay of 7,000*l.*

The length of the nave inside is 67 feet; the length of chancel, 27 feet; width of church, 54 feet; width of chancel, 19 feet 6 inches; height of tower and spire from the ground line, 140 feet; the clear height of nave to apex of roof, 43 feet 6 inches; clear height of aisles to apex of roof, 30 feet 3 inches.

The dressings externally are of Bath stone, and the rubble work is laid in courses from Chapel Town, near Leeds,—a very good stone, it is said, and the first time it has been used for such a purpose in London. Internally, Caen stone is used.

The organ is by Mr. Walker, of Francis-street (a very superior instrument), and cost 450*l.* Miss Ann Barnett, the foundress, has endowed the church with 1,000*l.* and has given the ground and a field adjoining her residence, and next to Holly Lodge (Miss Burdett Coutts's). The residence and grounds, about 5½ acres in extent, are left at her decease to the church as a rectory-house. The church was built entirely at Miss Barnett's expense, by Messrs. W. Cubitt and Co. as a memorial church to her late brother, Mr. Richard Barnett (who was a partner in the house of Sir Henry Meux and Co.)

SCOURING POWER OF WATER,

AND DANGER OF HIGH VELOCITIES IN SEWERS, &c.

THE known velocity of rivers varies from one mile to several miles per hour; and the fall of great rivers is only a few inches (from one to three) per mile. The tidal current, particularly when it assumes the character of a "bore," is very great; and much damage is done to the banks of a river exposed to this action. The water in bores and in rapids moves with a velocity exceeding 10 miles per hour. The head of water necessary to constitute a bore is from 6 to 10 feet. The fall in the bed of a large river necessary to form a rapid is only a few feet per mile.

The rise of spring tides in the river Mersey is upwards of 30 feet vertical in about six hours. The maximum velocity of the water of such tides through the Seacombe Narrows is about 7 miles per hour, or 10·16 feet per second. The mean tidal velocity varies from 5·33 feet per second, or 3·63 miles per hour, to 7·211 feet per second, or 4·911 miles per hour.

The flood-water stream of the river Mersey, during spring tides, washes up and bears along thousands of tons of silt and coarse sand, and wears the clay banks of the Cheshire shore, as also the bed of the river opposite Seacombe and Woodside, since the formation of the Birkenhead Docks. Neap tides have no such effect.

In laying out main sewers, the *depth*, or head of water to be passed through them must govern the fall, or a scouring power may be established, which will act most injuriously on the material of which the sewers are formed. The minimum velocity in large sewers should not be less than 2 miles per hour, or 2·9 feet per second, to prevent deposit; nor greater than 5 miles per hour, or 7·2 feet per second, to prevent wear and destruction. Where a more powerful action is required, an artificial "*bore*" may be established for a time by penning up a portion of water, to "flush" the sewer. But with the velocities here given, such a power will not be required; and where required, must ever be used sparingly and with great care.

In many towns, sewers are formed at such a rate of inclination as, with any head of water, to form a cataract; and as a consequence, the material of such sewer is soon destroyed, and much mischief is done. An excessive fall can be modified so as to reduce the current to the required velocity, and yet prevent deposit.

The Croton Aqueduct is of brickwork, and has the form given to many large sewers. The gradient, or fall per mile, varies from 7½ inches to 13½ inches. With a depth of water of 2 feet, the velocity of flow throughout the entire length of the aqueduct (about 38 miles) was found to be about 1½ mile per hour, or 2·2 feet per second. The Roman aqueducts had a fall not less than ½ of an inch each 100 feet, or about 13½ inches per mile. R.

METROPOLITAN IMPROVEMENTS.

I WAS very glad to see your remarks on the necessity of improving the approach to St. Paul's Cathedral from the west end, but I am afraid that the very heavy expense of setting back the whole north side of Ludgate-hill, coupled with the formidable difficulty of removing a church in the line, would be an almost insurmountable bar to that project, particularly as there would be no return for the outlay in the shape of increased ground-rents. It appears to me also, that towards the upper end of Ludgate-hill the view of the cathedral is quite as much obstructed by the houses on the *south* side of the street, as by those on the *north*. I submit, therefore, whether the main object would not be sufficiently attained—and certainly at a much smaller cost—by pulling down only a few houses on each side,—say as far as Ave Maria-lane and Creed-lane,—and terminating the street with a crescent facing the great portico of the church. If this were done, I have little doubt, from what has already passed with the dean and chapter on the subject, that they would consent to the removal of the heavy iron palisading in front of the building, and thus a magnificent area would be afforded for the numerous vehicles which are so frequently collected in that vicinity. As regards relief to the traffic of Ludgate-hill itself, that object will be effected to a great extent by the proposed new street from the south-east corner of St. Paul's Churchyard to Blackfriars-bridge, which I sincerely hope will on no account be abandoned, as nothing can be more wanted.

I must say, however, that the authorities who preside over these matters seem to devote all their energies to improving the avenues from east to west, without giving sufficient attention to those which are so much required between the north and south. We have *not one* broad handsome communication in that direction between Regent-street on the west, and Farringdon-street on the east,—the latter still not completed, though it has been for years "dragging its slow length along!" Wellington-street and Endell-street are the best, but they are tortuous and in some parts much contracted. The line by St. Martin's-lane has been much improved, and would form a good avenue, if it were not spoiled by the projection of some four or five houses from the corner of Hemmings-row, which contract the street at the very point where it ought to be broadest,—viz. at the approach to the fine portico of St. Martin's Church. In my humble opinion, there are two new streets imperatively called for. One from the Strand, opposite to Snow and Paul's banking-house, through Lincoln's-inn-fields, across Holborn, and into Bedford-row; and the other from opposite Somerset House to the British Museum. The first might be constructed at a very moderate expense, as the road is already made for three-fourths of the distance, and the opening

at the Strand end is prepared beforehand. At present, though the fine square of Lincoln's-inn-fields, the largest area in the heart of the metropolis, is within two or three hundred yards of that great thoroughfare the Strand, there is no access whatever to it in a carriage, except by the circuitous route of Chancery-lane and Carey-street, or the more complicated and filthy labyrinths of Clare market! Even pedestrians can only approach it through narrow and squalid courts! Such a glaring blot on the face of our great and splendid city, should not be suffered to remain any longer, especially when it might be so easily removed. My other proposition would of course involve a larger outlay, but it would open a magnificent vista, with a splendid public building at each extremity, and the increased value of the ground for building, would bring in a very adequate return for the investment. A MIDDLESEX MAGISTRATE.

RE-OPENING OF BOSTON CHURCH.

THIS event took place last Thursday. The church, dedicated to St. Botolph, and generally believed to have been built after the model of the great church at Antwerp, is a spacious and magnificent structure, in the decorated style of English architecture, with a lofty square tower, surmounted by octagonal lantern turrets, in the later English style. It was erected in 1309. The tower is 300 feet high, and was formerly illuminated during the night, forming a conspicuous landmark for mariners traversing the North Sea. The works (under the superintendence of Mr. G. G. Place, architect), were commenced about September, 1851. The clearance effected since the commencement of the works will greatly astonish those who have not lately visited this noble pile. The organ gallery has been taken down and dispensed with altogether. The pews from one end of the church to the other have been replaced by open benches of solid oak. The poor, and those who are not disposed to pay for seats, have been favourably considered by *the appropriation of the seats in the middle aisle to them*. The seats in the south and north aisles are appropriated to families and those who wish for seats of their own. The old pulpit has been renovated and reinstated nearly in the same position as it formerly occupied. The ventilation has been effected with pipes heated by steam, which are hidden from view by cast-iron grating. The restoration of the interior of the tower includes the substitution of the old bell-chamber floor for the new stone-groined roof, at a much greater elevation. The interior view of this church from the west end is very striking. The chancel has also undergone a thorough renovation. The altar has been raised. The organ has been provided for by building a recess at the north-east angle of the nave. The great east window is filled with elaborate painted glass by M. and A. O'Connor, and is designed with a view of combining the genealogy of our Lord with his great and everlasting glory. The font is the gift of A. J. B. Hope, Esq.

SPURGIN'S CHAIN-BRIDGE.

SOME years ago I invented a chain-bridge upon the plan of the vertebræ of animals; and the Central American Land Company, which was then in existence, obtained my permission to construct one of 100 feet span, to send over to the State of Guatamala, in fulfilment of a contract to establish a bridge over the Montagua River. It was only this morning that I received a letter, of which the following is a copy, in reference to its erection, and to the circumstances attending it. My correspondent writes to me from Bordeaux:—

"Dear sir,—I have to account to you for the lapse of several months' time. I promised to write some few particulars respecting your suspension-bridge over the Montagua River in Central America. It came to my knowledge during my connection with the Eastern Coast of Central America Commercial and Agricultural Company, who tried to colonize Vera Paz between the years 1840 and 1843, that they had stipulated with the Government of Guatamala to erect an iron suspension-bridge (with which I well remember that your name was associated) over the Rio Grande de Montagua, in the territories of that republic, as one of the conditions of the charter of grants and privileges of the said company.

About the close of the same period, the several parts of the bridge were sent out from England, under the charge of a practical engineer from Wales, whose name was Hopkins.

The failure of the company's plans being at that time evident, he was employed by the Government of the State at their own expense, to put up the bridge, which would otherwise have remained useless.

About August, 1844, I was among the first who passed over the bridge, which was being completed, on my way to the capital. The state of the approaches would then scarcely admit of the passage of our mules and horses.

Some time afterwards I remember hearing the bridge much talked about in the capital, and also the fact that the President of the Republic, Don Rafael Carrera, with Don Manual Pavon, the Marquis Aycinena, and several other members of the Consulado, as the Tribunal of Commerce is called, proceeded together to open the bridge with all the pomp and circumstance of civic state compatible with republican simplicity. Since then I believe that it has been kept in repair, and is still the happy and facile means of overcoming what was the great obstruction in the transit between Vera Paz and Guatamala, as the Montagua is a mighty stream, subject like a mountain torrent to periodical freshets of terrific violence.

My own impression of the bridge is, that it is a very great public convenience, and combines simplicity with elegance: I am not qualified to say more on the subject.

Situated as it is, amidst wild and picturesque scenery, it is an object of striking beauty, and a triumph of art which contrasts singularly with the primitive rudeness of every other object of man's device which meets the eye in the surrounding district.

I think I may fearlessly assert that it is the only iron suspension-bridge in central America.

Permit me to subscribe myself,

Yours in the great work of human progress and fraternity,

May, 1853." FREDERICK CROWE.

Now, sir, I was one of a small party to bear the expenses of constructing and sending over this bridge, for which we have received no return in any shape whatever. It was constructed in the short space of five weeks; its parts were put together for inspection and trial in a single night: there was no part of it but what one man could carry; and though it was required to bear a weight of five tons in the centre, yet it sustained ten tons, and would have borne even more had it been deemed necessary. It embraces every property of the Tubular Bridge, without its cumbrous appearance. One of our greatest architects has pronounced it to be the "*chef-d'œuvre*" of a bridge, and even expressed his desire to see one erected over the river Thames. It is made after the infallible plan of the spine of animals; and yet obtains no more notice from our engineers than if it were only suited for a child's toy; whereas, for efficiency, cheapness, durability, and elegance, I will match it against any other in existence at this day. My admiration of the works of nature emboldens me to say as much, for the idea is not mine, but solely derived from the study of a small part of the economy of animal being, which is my special province and vocation, and from which the simplest but the grandest and most sublime models for human contemplation and imitation are supplied to us at every moment.

JOHN SPURGIN.

SECRETARYSHIP OF SOCIETY OF ARTS.—Professor Solly has resigned the secretaryship to this society, in consequence of having undertaken the duties and correspondence connected with the formation of the Trade Collection, proposed in the second report of the Commissioners of the Great Exhibition of 1851. We understand that the present assistant secretary, Mr. James Forrest, a gentleman in every way well qualified both from his practical acquaintance with the duties of a secretary and from his business habits, is a candidate for the appointment. We shall be glad to hear of his success.

MARY-LE-BONE FREE LIBRARY.

THIS institution, which we have referred to upon former occasions as being in course of formation, is rapidly advancing in public estimation; and the committee are busily engaged in selecting a convenient site on which to commence operations. A very considerable sum of money has been subscribed, and promises of several thousand volumes of books, as soon as premises are obtained in which to place them, have been made. Amongst the zealous advocates of this first free library in the metropolis as an attempt to draw the working classes from the coarser influences of life to those of intellectual and moral improvement, stand prominently, H.R.H. Prince Albert, the Duke of Cambridge, Lord Shafetsbury, Lord Robert Grosvenor, Miss Burdett Coutts, the Dukes of Argyle and Newcastle, the Archbishop of Canterbury, the Bishops of London and Durham, Lord John Russell, Baron Rothschild, and a host of members of Parliament, including their active chairman, Mr. Oliveira, and the Borough members, Lord Dudley Stuart and Sir Benjamin Hall, Bart. Mr. Hume, the veteran and untiring friend of rational progress amongst the people, presides at a meeting which is to be held on Monday evening, the 30th instant, at Balgrove's Rooms, in Mortimer-street; and Viscount Goderich is to preside at a festival to be given in celebration of the opening of this institution on the 22nd of June, when we understand that many thousands of persons may be present in an open-air entertainment in St. John's Wood, for the enjoyment of more rational amusement than is usually found at the dinners given on behalf of public institutions.

OXFORD AND CAMBRIDGE ARCHITECTURAL SOCIETIES.

Oxford.—At a meeting of this society, held in their rooms, on May 11, a grant of 5*l.* was made towards the restoration of St. Michael's Church, Oxford, and also 3*l.* to Shottesbrooke Church. Mr. Lygon read a paper "On the Influence of Detail on General Design." Mr. Lygon remarked that architecture was a petrifaction, not only of religion, but of history and mind, and that all architecture expressed the tone of mind prevailing in the age. The tendency of this age, he considered, was to exaggerate detail at the expense of "general design," whereas detail, however valuable and graceful an adjunct to correct design, no more compensated for its absence than the gilded binding of a worthless book compensated for the literary defects of the work. Mr. Lygon illustrated this by the Houses of Parliament, which he abused somewhat strongly. The Taylor Buildings, in Oxford, came in for their share of abuse. We should not be content with borrowing details, he said, but we should work out the principles of design which actuated the great mediæval architects; for the exploded beauties of a pagan world are unsuited to the colder climate and purer faith of England at the present day.

Cambridge.—On the same day, the Cambridge Architectural Society met in their own rooms, when Mr. S. B. Gould, of Clare-hall, read a paper, in which the principles of Gothic architecture, and the rules by which the use of colour in churches should be guided, were discussed.

Mr. C. D. Nix, of Trinity College, read a notice of Doncaster Church, and appealed for assistance to the inhabitants of Doncaster in their effort to rebuild their church. Mr. E. S. Lowndes, of Christ's College, described a visit which he had paid to the church shortly before its recent destruction by fire. The Junior Secretary read a paper giving some account of St. Ninian's Cathedral, Perth, Trinity College, Glenalmond, and the College of the Holy Spirit, Cumbrae.

The President expressed his wish to entertain any members of the society who might be disposed to visit Ely, on some day in the week following Trinity Sunday, and Tuesday in that week was fixed on as the day most suitable for such an excursion. The Junior Secretary requested any members who might wish to join a party to be formed for the purpose of visiting the Temple Church, London, to favour him with their names at their earliest convenience.



THE DUBLIN INDUSTRIAL EXHIBITION.—Sir John Benson, Architect.

[See page 321, *ante*.]

THE MOUSTACHE FOR THE MASONS.

THE *Edinburgh News* states that "the *Builder* has been almost universally quoted as the authority for the suggestion" that the moustache and beard, if worn by working masons as a natural respirator, would arrest the fine dust which acts in so deadly a way on their lungs, and would thus greatly lengthen their life, as well as promote their health; and that "the consequence is, that nearly all the masons in Scotland, in the north [and, it might have been added, in the south] of England, and even, we understand, in certain districts of Ireland, have begun to cultivate moustaches!" and even that "other trades, such as millers, cabinet-makers, steel-grinders, and the like, are rapidly following this example."

The *Perth Constitutional*, moreover, says,—"We have also noticed of late that the out-door *employés* of the Scottish Central Company—enginemen, guards, constables, &c.—have added the 'fierce moustache' to the profusion of hair with which they delight to adorn their physiognomy;" and it adds, "Now that the practice has got a footing in this locality, we should not wonder, that, in a short time, the number of those who will assume

> The supercilious air
> Of those who strut *en militaire*,

will be so strengthened in their new position as completely to turn the tables on their smooth-faced opponents, and shame them into a custom which, to tell the truth, has not *yet* obtained the slightest encouragement from the more sedate and decorous classes of society. But we doubt not that the moustache is destined to achieve a splendid victory over every opposing influence. The 'spirit of the epoch' is unmistakeably on its side. The rising generation wince under the yoke of conventionalism, and impatiently await the day of emancipation! The morning of that day has dawned. The right of appearing moustached in public was formerly, by universal consent, assigned to dragoons and puppies; but now, when cautious engine-drivers and sedate stonemasons adopt the practice from worthy and prudential motives, many more will follow them, be *their* motives what they may."

Now there is, doubtless, a good deal of probability and truth in all this; but sorry we are that we cannot say quite so much to a charge made against us by the *Edinburgh News*, in regard to this moustache affair. The *News* alleges, with not very "nice and scrupulous accuracy," that being indebted to *it* for the suggestion, in an article on the Working Masons of Edinburgh, we quoted the suggestion without acknowledgment. Now, considering that we condensed not only this but other articles of the series alluded to, acknowledging on each and every occasion the source whence it was derived, and in particular that in page 657 of our last volume we reviewed and condensed the whole of the article on the working masons,—the suggestion of Dr. Alison as to the moustache inclusive, and with not only acknowledgment but approval of the object of the series, of which this was the opening article,—such a charge, we think, is somewhat strange. With all due deference, however, we doubt whether, in a question as to the welfare of the working masons, either of Scotland or of England, the mere authority of any non-professional paper, or of any physician, unless backed by the *Builder's* circulation, would have produced the "consequence" here admitted to have been directly due to its influence. Neither must it be supposed, after all, that we were really indebted either to the *Edinburgh News*, or to Dr. Alison, for turning our attention, *for the first time*, to such a subject: it is one we have repeatedly adverted to: and so far as regards artificial respirators, we have long since, as we have lately, expressed our opinion that, however useful, they never would be resorted to by masons as a class. Of a natural respirator, such as the moustache, however, as we have also before said, we have more hopes; because in place of trouble there is a saving of trouble connected with its adoption, and it now appears that we were right; and though, as we have said, we should regret to see our workmen continentalized in mind, we have too much regard for the welfare of the working masons, painters, plasterers, cabinetmakers, &c. to regret, under the circumstances, to see them changed in visage. As for engine-drivers, guards, &c. we believe that even these will reap material advantage from such a natural respirator during the exposure otherwise of their lungs to cold cutting air while trains are in transit.

VALUE OF LAND AT EAST HAM, ESSEX.

IN June, 1850, the Plashet and Hamfrith farms were sold by auction, by Mr. Beadel. At the sale, Mr. Samuel Gurney purchased a field situate on the east side of the road leading from Stratford to Ilford, facing Plashet House, containing 53a. 0r. 16p. for 8,340*l.* or 157*l.* per acre.

At the beginning of this year the Tilbury and Southend Railway Company gave Mr. Gurney notice that 3a. 2r. 17p. of this land would be required for the railway, when the parties disagreed as to value.

On Saturday, the 30th ult. a jury was summoned at the Yorkshire Grey, at Stratford, where the Attorney-General and Mr. Bovil appeared as counsel for the company, Sir Frederick Thesiger and Serjeant Merewether for the claimant; Mr. Bagley being the assessor.

For the claimant, Mr. Cobbett, Mr. John Wallen, and Mr. W. H. Dean, surveyors, were examined: they valued the compensation at 4,523*l.* viz. for the land, 1,091*l.*; severance, 2,678*l.*; forced sale, 754*l.* or 20 per cent. on the value of the land and severance.

For the company, Mr. Tite, Mr. C. Lee, and Mr. Bromley, were in attendance, but not called, the Attorney-General stating in his speech that their estimate was 1,877*l.* 14s. viz. for the land, 853*l.* 10s.; forced sale, 170*l.* 14s. (20 per cent.); severance, 853*l.* 10s.

The jury gave the claimant 1,958*l.*

Miscellanea.

MOTION OF SHINGLE: THE CHESIL BANK.—At the Institution of Civil Engineers, on the 10th inst. Mr. Rendel, president, in the chair, the evening was devoted to the discussion of Mr. Coode's paper, "Description of the Chesil Bank (Portland)." Instances were given of the motion of shingle, as affecting the entrances of harbours, which was the main practical point to be considered by the civil engineers. At Lowestoft, just as much sand was washed up as supplied that which was required for ballasting the vessels frequenting the port; at Sunderland, the cross action of the waves, influenced by the ledge of rocks outside the new harbour, caused a deposit of shingle on the opposite sides of the groins. The work of Lamblardie on the motion of shingle (Mémoire sur les Côtes de la Haute Normandie) was referred to, as corroborating the views of the author of the paper, on the motion of "beach," by the wind-waves, and giving valuable facts, bearing on the subject. Viewing the relative position of the geological strata of the coast, to the westward of Portland, it was considered probable, that the extent of chalk, exposed to the action of the waves, had, at a former period, been much greater than at present; that the disintegration of the underlying green sand, had expedited the fall of the chalk and flints, and thus supplied the material for forming the bank. The travel of pebbles was gradual, and distinctly up and down the beach, having an onward tendency, in the upward motion, and yielding to the force of the then existing wind-wave. At an angle of about 45 deg. the greatest amount of travel, or onward movement, was observed, but the size of the shingle, more especially, was determined by the amount of undulation.

MOORE AND THE ARCHITECTS.—The following extracts from the fourth volume of Thomas Moore's "Journal" may interest some of our readers:—"16th October, 1823.—Set off for Bowood at nine. After breakfast heard the various criticisms on Cockerell's door to new chapel. Baring agreed with Mr. Grenville's remark, that the door would look neater if the *small* knots were removed. Rogers thought that they ought to be of the same colour as the wood, which the ancients would have made them by having the whole in brass, as the door of the Pantheon is. The doorcase is copied exactly from a temple in Athens. Conversation about the architects, Cockerell, Smirke, and Wilkins. The first and last, too little acquainted with the common part of the art, the conveniences, &c. of a house; and Smirke, on the contrary, too much hacked and vulgarised by the common part to succeed as he aught in the ornamental: a combination of the two would be perfection. 30th of October, 1824.—To Bowood to dinner. In talking of English architects, Lord Pembroke said he would rank Chambers the highest of any. Lord Lansdowne said that Cockerell is of the same opinion."

LARGE SAFETY REVOLVING SHUTTERS.—Passing through Ludgate-hill, I observed a large revolving shutter marked to the effect that it was the largest in the world. As the use of such shutters is daily becoming more general, I give them the dimensions of one invented and manufactured by me, now erected in Limerick, which is in one piece, namely, 45 feet long by 13 feet high, and 1¼ inch thick, covering an area of 585 square feet, and moved with ease by a boy with a small winch handle. The time occupied in opening or closing this (I should say the very largest revolving shutter in the world) is but two minutes. I am about to apply for a patent. The principle differs materially from any yet adopted, and is applicable to large folding doors, sliding or moveable partitions in exhibition rooms or theatres, or for any purpose where a large surface requires to be screened off or enclosed, with ease and safety. No space is lost either at top or bottom, and the shutter is equally applicable to curved or plane surfaces.—J. F.

NEW USE OF LAMP-POSTS.—The Town Council of Salford have agreed to accept an offer made by Mr. Lea, to pay an annual sum in consideration of his being allowed to suspend tradesmen's addresses from the lamp-posts.

NAWCASTLE-UPON-TYNE COMPETITION FOR THE BUILDINGS IN ST. NICHOLAS-SQUARE.—We are asked to say, as to our notice of this competition in last week's number, that the successful competitors are Messrs. Lawford and Heneker, and not "Lawson and Heniker;" and that with regard to the dissimilarity in the estimates, noticed in the report, the matter is not surprising, inasmuch as the architects were left entirely to their own discretion respecting both cost and style of architecture, the instructions simply calling for the best design to suit the locality and meet the requirements of the town.

SOCIETY OF ANTIQUARIES, NEWCASTLE-UPON-TYNE.—The monthly meeting was held on Wednesday in last week, when the town clerk of Newcastle exhibited some relics found at Borcovicus, now Housesteads; and Dr. Bruce read a paper by Mr. Hodgson Hinde upon Horsley's allocation of the miscellaneous notitia stations in the north of England. Mr. G. B. Richardson announced his intention to read a paper, at next meeting, on ancient burials.

PUBLIC WORKS IN PARIS.—The *Moniteur* contains a recent article on the extraordinary works undertaken by the municipal authorities of Paris, from which the following is condensed:—The construction of the central markets, with expropriations required, and the widening of neighbouring streets, will cost 37,300,000f. The opening of the Rue de Rivoli, suppression of narrow streets, enlargement of Place du Palais Royal, creation of a *place* in front of Théâtre Français, and of another in front of Church of St. Germain l'Auxerrois, and expenses required to place constructions in vicinity of Louvre in harmony with that building, will cost F.62,650,000
which, with cost of central markets ... 37,300,000

gives a total of F.99,950,000
or, in round numbers, 100 millions. But from that expense must be deducted price of materials of houses taken down, and sale of 42,000 metres of ground, 18,500,000f. and contribution of the State, 13,500,000f. 32,000,000

which will reduce the charges on the city to F.67,950,000
To meet that charge, the municipal administration has contracted a loan of 50 millions, which, owing to the credit of the city, produced 61,391,000
To which must be added for interest of a portion of that sum, deposited at the Treasury 1,000,000

Giving a total of..... F.62,391,000
There remains consequently a sum of 5,609,000f. to be met; but which will be more than supplied by the surplus of the receipts over the expenses of last year and of the present one. .. .. Without speaking of the works which will transform the Bois de Boulogne, the construction of the central markets, the prolongation of the Rue de Rivoli, the enlargement and embellishment of the vicinity of the Louvre, the creation of the Rue de Strasburg, and the Rue des Ecoles, are vast enterprises which have led to others, the necessary consequences of them. All the streets leading to the markets, the Louvre, and to the great arteries newly opened, have had to be enlarged, levelled, and embellished, while new sewers have been constructed on a vaster and better system. In several places the Seine has been narrowed, to afford a wider space to public thoroughfares, its bridges have been lowered, and their issues disengaged. In a very short time the double line of quays which runs for two leagues on each side of the river will be complete and rectified through all its extent.

THE EXHIBITION OF CABINET WORK AT GORE HOUSE, KENSINGTON.—On Saturday in last week, a meeting was held, in the theatre at Marlborough House, of the producers of cabinet work, to hear a statement of the arrangements by which it is proposed to render the collection of examples lent by her Majesty and various noblemen and gentlemen as useful and instructive as possible. Mr. Cardwell, M.P., President of the Board of Trade, took the chair, and addressed the meeting; after which, Mr. Redgrave explained that the exhibition was one purely of an instructive character, and the arrangements such as gave the most unlimited advantages to those who desired to profit by it. Persons attending the museum would be allowed to copy, &c., five days in the week; and, without any recommendation, but on the payment of a very small fee, any one attending the museum would be enabled to have any article in a separate room, to paint from or to photograph. There was a library of reference, and a librarian, ready at all times to communicate information. There was another novel feature in the museum of this department—that they received loans from individuals, by which the exhibition was increased in a manner which money could not purchase, thus giving to the public the best means of instruction. The department would be prepared between that day and the opening of the exhibition (next week) to receive suggestions from any manufacturer or craftsman, so as to enable the public to make still more use of the exhibition. The value of this would be seen in the wish of the government that cabinet-makers should have an opportunity, before the period of the Great Exhibition at Paris, in 1855, of responding to the invitation of the French nation, by preparing works for that great and amicable contest. The collection of cabinet furniture sent to Gore House, dated from the time of the Reformation to the beginning of the present century. The exhibition would not be open to the public daily before noon, but it would be open to students who paid a fee of a guinea a year at nine A.M., six days in the week. There would be, between nine and twelve o'clock, classes by Mr. O. Hudson, T. C. Robinson, and Professor Semper, who would direct the students in studying and copying, examine their examples, and correct them if necessary. Admission, 10s. for a course, or 6d. for one attendance. Students of the special classes of the department in Jermyn-street, and at Marlborough House, would be free at all times to make studies, and so forth; and the students of all schools of art, metropolitan or provincial, would have free admission on Mondays and Tuesdays, on showing their free receipts, or an order from the master of any school of art. The collection at Gore House would, moreover, contain the best specimens of drawings and prints in the country, the British Museum excepted. It was the intention of the Board of Trade to have the exhibition open of evenings, for the convenience of those whose occupations would prevent them from attending at any other time of the day.

THE KIDDERMINSTER PUBLIC ROOMS.—My attention having been directed to a paragraph in your paper of last week which may have a tendency to injure in his profession a deserving citizen of Worcester, Mr. W. J. Hopkins, architect, I feel assured you will do him the justice to allow me to state that he had instructions from the committee to erect a building to be used both as a corn exchange and music hall, and that the design carried out by him was adapted for each of those purposes. Its desertion as a corn exchange was owing to the great interest exerted in favour of the rival site in Angel-street by a number of very influential landowners. It is not necessary to say anything about the merits of the building which ultimately became the corn market of this city, the rather as you yourself, Sir, expressed a very decided, although certainly far from flattering, opinion at the time of its erection.—JAMES M'MILLAN, Editor *Worcester Herald*.

ROYAL ITALIAN OPERA-HOUSE.—I have no doubt if you were present at the Royal Italian Opera on Saturday evening that you were much delighted with the production of "Rigoletto," or rather with the manner in which it was produced; but do, Sir, give a word to Mr. Beverley (who then made his *début* as scene-painter to this theatre) as to the propriety of taking the opinion of an architect when he next introduces architectural features. In the second scene of the first act, one of the most prominent features is Count Ceprano's house, which is represented as having a portico of the *Grecian* Doric order of a very severe type (though the frieze is innocent of triglyphs and metopes), surmounted with a balustrade, which is placed upon the cornice of the order, without the intervention of a plinth. One would hardly expect to see such a thing at the first theatre in London. I think also that Mr. Beverley has not been particularly successful in his interiors, but his two landscape scenes, with the above exception, are beyond all praise.—Y.

THE IRON TRADE.—"The struggle between the buyers and manufacturers of iron continues," says the *Wolverhampton Chronicle* of last week, "the buyers pulling for a reduction in prices, and the manufacturers holding on for those of quarter-day. In consequence, the trade is dull, but, if anything, it is this week a shade brisker than last. Advices from America, under date April 26, speak of the gradual recovery of the healthy tone of the money market, and the consequent improvement of the iron trade in that country."——It is rumoured that the French government will allow the introduction of British iron into that country free of duty.——The Prussian correspondent of the *Morning Chronicle*, writing from Berlin of the sittings of the Prussian Chambers, says, "At the close of the discussion upon the Austro-Prussian and Zollverein renewal treaties, both of which were adopted unanimously by the Second Chamber on Saturday, the Minister for Commerce stated to the House that it was the intention of the government to propose a considerable reduction upon iron imports at the next general (Zoll Conference) meeting. It may be added, that the ministerial declaration was received with cheers by a majority of the House."

THE UNIVERSAL EXHIBITION OF AGRICULTURAL AND INDUSTRIAL PRODUCTS AT PARIS IN 1855.—On the part of the French Emperor and his Government, Count Walewski, in a communication to the British Government, expresses a hope that they will do all in their power to direct the attention of British manufacturers to the intended Exhibition of 1855, and that these will respond to the invitation now addressed to them with the same ardour as the French manufacturers responded to the invitation of England in 1851. In accordance with a request by the Earl of Clarendon, as Foreign Secretary, the Board of Trade desire to give the widest publicity to this measure, in order that no effort may be spared in furtherance of the intentions of the Emperor as regards the exhibition of British agriculture and industry.

THE VAULTS OF MARYLEBONE CHURCH, LONDON.—Not only has the Home Secretary determined on closing the various graveyards of the metropolis, says a contemporary, but he has commenced an equally determined onslaught with respect to the decayed remains of the aristocracy and more wealthy portion of the departed who are deposited in the vaults under many of the principal churches in the metropolis. During the week a large number of workmen have been engaged in removing coffins from the places where they had been deposited, into catacombs which have been erected in various parts of the vaults, and when about thirty are thus packed closely together, the entire place has been completely bricked up. This has been done without respect to persons, and the orders are that, in every instance, so soon as thirty bodies are deposited, they shall be bricked up in a similar manner. It is understood that this order has been carried out under the advice of Dr. Sutherland.

THE ROYAL LITERARY FUND DINNER.—On the 11th inst. upwards of 400 gentlemen assembled at the Freemason's Tavern, to commemorate the 64th anniversary of this valuable institution. The meeting was graced by the presence of numerous ladies, both in the body of the hall and in the galleries. Mr. Disraeli, M.P. as president of the year, was in the chair, and delivered an able speech, in which he congratulated the meeting on the efficiency of the institution, and the great amount of good it had done in its time. The Rev. Dr. Russell read the report, from which it appears that the sum disbursed during the past year amounted to 1,340*l.* which was distributed among forty-nine families. The subscriptions received in course of the evening, amounted to nearly 1,000*l.*

ELECTRO-TELEGRAPHIC PROGRESS.—The Anglo-Belgian submarine cable, which has been most successfully laid down, weighs 450 tons, and was payed out from a screw collier of 700 tons. Although the length of it is 70 miles, the whole was laid down without a kink or other impediment, and in a line so nearly straight, that only two miles over and above the direct distance were required. The laying down began on the 4th inst. and was completed on the 6th, free communication by telegraph being at once established between Ostend and Dover.——The *Patrie* announces that a convention, in which the different powers interested have taken part, has just been concluded for the establishment of an electrical communication which will unite the European Continent with Algeria, and ultimately with Alexandria and India. The submarine telegraph from England to France is to be continued by land, and, after crossing Nice and Genoa, will reach Spezzia gulf. The new line will start from that point, and after crossing Corsica, will pass by Sardinia to Algeria, near Bona. The works necessary for the accomplishment of the first part of this plan will be completed in two years from the date of the promulgation of the law. At that time the line will be prolonged by the shore of the Mediterranean, in Africa, as far as Alexandria, in order from that point to reach India and Australia. The plan will, it is said, be shortly brought under the consideration of the Legislature. The surveys to serve as the basis of examination, it is added, have already received the approbation of a commission, composed of special and competent men, to which they had been referred by order of the Government.

STATUE OF LORD BUTE FOR CARDIFF.—The site for the statue of Lord Bute was decided on last week, and orders were given to proceed with the excavation and concreting forthwith: the extent will be 13 feet square by about 5 feet deep. The statue has been executed by Mr. J. Evan Thomas, and is of bronze, standing 9 feet high, on a granite pedestal (worked in Scotland) 11 feet high. The site chosen is in High-street, opposite the old Town Hall, the removal of which is in contemplation. Most of the readers of the *Builder* will recollect seeing this statue when it stood in a conspicuous part in the nave of the Crystal Palace.

RAILWAY TRAFFIC RETURNS.—Last week the returns exhibited the following results: — 1853: on 6,665 miles, 298,503*l.* received; 1852: on 6,349 miles, 272,221*l.* received; 1851: on 6,354 miles, 265,404*l.* received. The receipts showed an increase over the corresponding week of 1852, of 26,182*l.*; and an increase over the corresponding week of 1851, of 33,099*l.* Per mile per week, they showed an increase over the corresponding week of 1852 of 1*l.* 18*s.*; and of 1851, of 3*l.* The total receipts from 1st January to the present time amount to 4,694,373*l.*; for corresponding period of 1852, 4,249,449*l.*; for 1851, 3,997,427*l.*

HERMETICALLY SEALED COFFIN.—While demolishing the old church of the ancient Welsh college at Helmstedt, near Brunswick, there was found, it is said, a coffin made of lead, the lid of which was of glass of immense thickness. It contained the body of a young girl apparently about twelve years of age, which still preserved every appearance of youth and freshness, although the coffin bore date 1461. "A private letter from a bystander," says the *Atlas*, which has an inexhaustible and wonderful store of tales of interest and romance from Paris in its pages, "tells us that the face and figure of the child were perfect as in life, not a single sign of decay being visible throughout the whole person. The cheek preserved its delicate rose tint, the forehead its snowy whiteness. The hair, which was of a beautiful gold colour, was parted on the brow and fell in long ringlets over the bosom, crisp and fresh as though the child had laid down to sleep the moment before. The dress of white satin embroidered in gold flowers, the shoes of white velvet, and the lace apron, all seemed bright as if newly purchased; and more astonishing still, the bunch of lilies held in the hand of the corpse still looked as fresh and moist as though the dew still hung upon it." The chief magistrate unfortunately "having recently been made the victim of a practical joke in the town," smashed one or two of the diamond-shaped panes of glass of which it was composed, and "in a moment a thin cloud of dust or vapour, like a wreath of smoke, rose up and dimmed the sight, veiling the corpse from view, and when it had disappeared, nothing remained but a heap of discoloured dust, a few rags of tinsel, and one or two dried bones." There appears no doubt, adds the writer, that the high preservation of the corpse had been produced by the abstraction of all air from the coffin, which was finally conveyed to the Brunswick Museum. The air-extracted coffin for the preservation of dead bodies, sent from America to the Exhibition of 1851, was thus no novelty.

TENDERS

For Five Houses at Notting-hill. L. Goddard, esq. architect:—

Hopkins and Roberts	£2,800 0 0
Stredder	2,645 0 0
Chamberlain	2,295 10 0
Fethouse	2,249 10 0
Mullington	2,177 0 0
Alexander and Humphreys	1,845 0 0

TO CORRESPONDENTS.

"C. W. H." "J. T." "E. H. G." "J. F." "R J G." "W. C." (we were too late to reply), "R. P. C." "M. C." "E. W. P." "C. T." "W. R." "C. P." "J. H. H." "A Competitor," "W. G." (the parties in question were asked to do nothing more than admit one person for a special purpose at the price named in the bills, and refused rudely, on the ground that all the tickets were sold), "C. B." "E. H." "J. J. L." "Young Surveyor" (measure the graining separately), "O. H." "S. G. A." (we cannot advise), "W. H. V. S." "R. H. P." "One who has been journeyman Carpenter," "G. W." (will he send what he has written), "Carrara" (shall appear), "W. B." (ditto), "Vitrified Clay" (ditto), "Anti-Gloom" (ditto), "T. A. (thanks for seal), "Key in the Arch," "J. E. B." "Lambeth Potter," "C. E." "J. L."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher" and not to the "Editor;" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

TO BUILDERS AND CONTRACTORS, &c.

PARTIES in the above Line are respectfully informed that an OFFICE has been OPENED for the SUPPLY of FIRST-RATE MECHANICS (Carpenters, Joiners, Bricklayers, &c.) at the National Coffee-house, 1, Little Turnstile, Holborn, where all applications for men, addressed to W. RICHARDSON, shall receive immediate attention.
N.B.—Foremen provided in the above Trades.

THERE is a VACANCY in the Office of an Architect and Engineer, holding public appointments, and of long established practice, thirty miles from London, for a gentlemanly Youth as an ARTICLED PUPIL. There would be the opportunity, if wished, of the latter half of the term being passed in a London office.—Address, by letter, to K. D. Office of "The Builder," 1, York-street, Covent-garden.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

IMMEDIATE and PERMANENT EMPLOY for a Young Man, competent in the three branches.—Apply by letter, stating qualifications, to A. WILKINSON, Plumber, &c. 49, Sloane-street, Chelsea.

TO PARENTS AND GUARDIANS.

ENGINEERING PUPIL.—The Town Surveyor of Great Yarmouth has a VACANCY in his Office for an ARTICLED PUPIL; the youth must have a gentlemanly address, be well educated, and possess a liking for the profession. A premium required. Great Yarmouth is a rapidly improving seaport town and fash ionable bathing-place; there are several extensive engineering works in progress, and about being commenced.—For further information apply, by letter, to the Town Surveyor, Town Hall, Great Yarmouth.

TO GAS-FITTERS.

WANTED, TWO steady WORKMEN for best work, and who are competent to superintend and direct orders.—Apply to TIMOTHY SMITH and SONS, Birmingham.

TO SMITHS' FOREMEN.

WANTED, a THOROUGH PRACTICAL MAN, capable of keeping men's time and entering up work.—Apply by letter to HAYWARD, BROTHERS, 196, Blackfriars-road.

TO SCAGLIOLISTS.

WANTED, a MIXER, who can imitate the various marbles; also, a POLISHER. None need apply but those who are fully competent, as liberal wages will be given.—Address at the Office, Scagliola Marble Works, Buckingham-street, Fitzroy-square.

WANTED, a Youth, as JUNIOR CLERK, to invoice and weigh goods, &c.—Apply, by letter, addressed to G. B. 168, Drury-lane.

DRAUGHTSMAN.

WANTED, a thoroughly-competent MECHANICAL DRAUGHTSMAN, one who has had considerable experience in getting out details for engine-work, and in making fair drawings. The advertisers are desirous of making an engagement with some really competent party, to whom they are willing to pay a liberal salary.—None without considerable experience in engine work need apply to Messrs. FLETCHER and SPENCER, 23, Cannon-street, London.

WANTED, a good practical FOREMAN BRICKLAYER, to oversee work; wages, 5s. per day. One who has had experience in the construction of brick sewers preferred.—Applicants to be made to Mr. W. ROBINSON, C.E. Bank chambers, High-street, Coventry.

WANTED immediately, by an Architect in the country, an ASSISTANT, who is a good draughtsman, and accustomed to the general duties of an office. To state qualifications, age, and amount of salary required.—Address J. G. care of Mr. James, No. 3, Francis-street, Hagley-road, Birmingham.

TO SAWYERS.

WANTED, an active Young Man as a TOP SAWYER.—He must be a first-rate tradesman, and will have to work at a scale of prices. As this is likely to be a permanency, none need apply but those who can give unexceptionable references for honesty, sobriety, and workmanship.—Apply to SAMUEL CROWHURST, Jun. Timber Merchant, Hanover-street, Walworth, Surrey.

WANTED, by a Practical Decorator, for three years, an active Youth as in or out-door IMPROVER. One who has had some experience in Paper-hanging and Painting will be preferred.—Applications, stating particulars as to capability, age, &c. addressed to A. B. Post-office, Aldenham-terrace, Old St. Pancras-road, London, will be promptly replied to.

TO IRONMONGERS.

WANTED, a Person of business habits as PARTNER, to JOIN a PRACTICAL and WORKING FOREMAN, who has had the whole management of one of the first manufactories at the west end of the town, and where business requires the above. The advertiser's business is in stoves, warming and ventilating steam-kitchens, hot-plates, &c. and has fitted up the principal club-houses in Pall-Mall, Buckingham Palace, Windsor Castle, &c. &c.—Direct to W. S. at the Office of "The Builder," 1, York-street, Covent-garden.

TO DRAUGHTSMEN.

WANTED immediately, in a Civil Engineer and Land Surveyor's Office, TWO good and expedit ous DRAUGHTSMEN, capable of getting up plain and highly-finished plans and sections, and conversant with all the works of an Office.—Apply to E. W. S. Post-office, Nottingham.

WANTED, a competent MANAGER or OVERLOOKER, for an extensive Fire Brick and Stoneware Pipe Manufactory, in the North of England. Applicants must produce first-rate testimonials as to character and experience, and be practically acquainted with the latest improvements and most recent machinery in use in the trade.—Applications will be received until Saturday, June 11th, addressed A. B. care of Mr. William Winfield 2 Walbrook, London.

TO GLASS PAINTERS AND STAINERS.

WANTED, two or three good WORKMEN, in the above line.—Apply by letter (pc t paid) to Mr. W. HOLLAND, Stained Glass Works, St. John's, Warwick.

TO ARCHITECTS AND SURVEYORS.

WANTED, an ENGAGEMENT, by a Young Man who served his articles in Bath; is a thorough draughtsman, and well acquainted with land surveying. Most satisfactory references given.—Address, C. W. 25, Charles-street, Bath.

TO BUILDERS.

WANTED, an ENGAGEMENT, by a middle-aged practical MAN, capable of superintending a small business, including the office duties, if required; having for some years been employed in the office of a first-rate London firm. The most satisfactory reference to late employers.—Address, post-paid, J. K. Jones's Dairy, 7, Commercial-place, St. James's, Bermondsey.

WANTED, to place a Youth (aged 19), for two or three years, to the PLUMBING BUSINESS. He has some knowledge of the trade. No objection to fill up his time with painting and glazing.—Address, H. B. 10, Robert-street, Bedford-row.

WANTED, a SITUATION as FOREMAN to a Builder, by a person who is thoroughly qualified in all the branches of building; capable of making working drawings, or as Shop Foreman of Joiners. Has filled a similar situation for a number of years in London. A little distance from town preferred. Unexceptionable reference given.—Address to W. L. 53, London-street, Fitzroy-square.

TO MILLWRIGHTS AND ENGINEERS.

WANTED, by a young Man, aged 25, employment in a Millwright's and Engineer's shop. Wages not so much the object as good practical improvement.—Address, A. Z. Office of "The Builder," 1, York-street, Covent-garden

TO PLUMBERS, PAINTERS, BUILDERS, &c.

WANTED, by a Practical Man, who has had the entire management of a business for several years, to meet with a similar SITUATION as FOREMAN, &c. No objection to the country. Satisfactory reference will be given. Address, D. A. No. 2, Cambr dge-street, Golden-square.

TO PLUMBERS AND BUILDERS.

WANTED, a SITUATION as PLUMBER, or to take the three branches, having a thorough practical knowledge of all the branches, engine-pumps, baths, steam and hot plate, or closet work; or to take the management of builders' work, having filled similar situations. Good references can be given, for twenty years if required.—Direct to S. S. 46, Regent-street, Westminster.

TO BUILDERS, &c.

WANTED, an ENGAGEMENT, by a Young Man, well acquainted with the Building business. References will be given.—Address, B. N. 14, Murray-street, Hoxton.

TO TIMBER MERCHANTS, &c.

WANTED, by a respectable Young Man, 21 years of age, a SITUATION as Clerk or Collector: has formerly held a similar situation, and can produce the most satisfactory references if required.—Address, A. L. F. Office of "The Builder," 1, York-street, Covent-garden.

AN ASSISTANT, capable of making finished and working drawings (Gothic in particular) and has had the management of a country practice, desires a RE-ENGAGEMENT No objection to the country.—Address, NORMAN, 26, Sherborne-street, Blandford-square, London.

TO ARCHITECTS AND BUILDERS.

AN efficient CLERK of WORKS wishes for an ENGAGEMENT, or as Clerk and Superintendent in a Builder's Establishment; is a good fair and detail draughtsman and designer, thoroughly experienced in the several branches of building and construction, measuring, estimating, &c. Testimonials unexceptionable.—Address, A. C. Office of "The Builder," 1, York-street, Covent-garden.

TO ARCHITECTS.

A GENTLEMAN who has just left a well-known London Office, where he has served his Articles, is desirous of entering into a fresh ENGAGEMENT. He is accustomed to making out working-drawings and details of Gothic work, and to the general routine of an office.—Address A. B. 113, High Holborn.

A YOUNG MAN (having just completed an engagement), wants a SITUATION, with a builder, or as Clerk of Works; is thoroughly conversant with the routine of, and in keeping accounts, measuring, estimating, getting up plans, &c. Satisfactory testimonials.—Address (prepaid), X. at Mr. Musselwhite's, Hayter's House, Barford st. Martin's, near Salisbury.

TO PLUMBERS, PAINTERS, BUILDERS, &c.

A RESPECTABLE practical MAN, who has had the entire management of an ex tensive plumbing and painting business, is OPEN to an ENGAGEMENT in a similar line, either in town or country.—Address, M. A. Y. Mr. Hathaway's, Newsman, Royal Exchange.

THE Advertiser, who has a thorough practical knowledge of Carpentry and Joinery, is a good Draughtsman, writes a good hand, and is competent to take charge of works, is in WANT of a SITUATION, as out-door Foreman, Clerk of Works, or in any similar capacity. Good references will be given.—Address to B. H. 66, St. John-street-road, Islington.

TO BUILDERS.

A thoroughly competent Builder's Clerk desires an ENGAGEMENT, in town or country. He perfectly understands bookkeeping, and the whole routine of the business, is a good draughtsman, and can offer unexceptionable references and security if required.—Address, A. B. Post-office, Surrey-square, Old-Kent-road.

TO BUILDERS AND OTHERS.

A Young Man, 22 years of age, who has been engaged as General Foreman in the erection of buildings in London, wishes for a RE-ENGAGEMENT in town or country: can make out plans and working drawings, being thoroughly acquainted with the practice.—Terms and undeniable references to be had on application, by letter, to G. W. F. 71, Southampton-street, Pentonville, London

A THOROUGHLY PRACTICAL, EXPERIENCED CLERK of WORKS is open to an ENGAGEMENT. An extensive building is just completed, where he has been employed four years and a quarter.—Address S.S.S. Office of "The Builder," 1, York-street, Covent-garden.

SURVEYING, ARCHITECTURE, Engineering, Levelling, Draining, Draughting, Mapping, Measuring and Valuing of Land, Timber, Buildings, Drawing, Mathematics, &c. TAUGHT on the most approved system in a short course of Practical Lessons, by Messrs HYDE, SMITH, and LEWIS, Civil Engineers Architects, Surveyors &c. of extensive practice, who are preparing gentlemen for Surveyors, Architects, Engineers &c. Proficiency guaranteed. Terms very moderate. Steady and clever pupils may be introduced to engagements. For prospectuses, &c. apply at the Offices, 24, Guildford-street Russell-square, London. Evening instruction given.—"An excellent establishment for surveying, architecture, engineering, &c." *Magazine of Science.*

MONEY LENT ON PERSONAL SECURITY.—From 5l to 200l.—For two years, one year or six months. Repayable by weekly, monthly, or quarterly instalments.—Finsbury Loan Office, 144, St. John-street-road, Clerkenwell. Established 1838. Registered pursuant to sec. 38, 7 & 8 Vict. cap. 110.—Open daily from Nine till Six.—No

BURNHAM LOCAL BOARD of HEALTH.
WANTED to BORROW the SUM of 1,000l. on the Mortgage of the Rates of the district of Burnham, for Thirty Years, the interest and part of the principal to be paid half-yearly, according to the Public Health Act, 11 & 12 Vict. c. 63, as sanctioned by the General Board of Health. Any persons willing to lend the above sum on these conditions are requested to send to the Clerk of the above Board, at their office at Burnham, Somerset, on or before the 1st day of JUNE next, stating the rate of interest they will advance the same at. The clerk will reply thereto, and give any further particulars that may be required.
May 18, 1853. JOHN BUNCOMBE, Clerk to the Board.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Ve stian blinds, per square foot, 9d.; best holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

DISSOLUTION of PARTNERSHIP.—

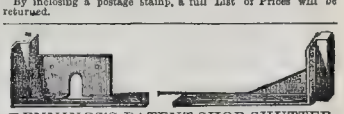
HENRY PASK (late Johnson and Pask), Baker-street, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.


N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET, CHANCERY-LANE.
SANDS and EMERY,

Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, and are always supplied with every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.

Glazed and Polished Goods in Walnsect and Mahogany securely packed for the country and for exportation.
By inclosing a postage stamp, a full List of Prices will be returned.


JENNINGS'S PATENT SHOP SHUTTER-SHOE and FASTENER costs HALF the PRICE of the unsightly SHUTTER BAR.
May be had from any Ironmonger, or from the Patentee, GEORGE JENNINGS, 29, Great Charlotte street, Blackfriars-road.

A PROFITABLE established BUSINESS TO BE SOLD.—A gentleman retiring from a Cement and Artificial Stone Works, long established in London, offers the plant and stock of the same for 1,500l. or at a valuation.—Apply to Mr. H. DIRCKS, Agent, 32, Moorgate-street, City.

TO CARPENTERS AND GENERAL BUILDERS.

AN unusual opportunity of entering upon a good business in an important and flourishing central manufacturing town and district in England, is now offered to a young man or others of good character and ab lity. The proprietor seeks to retire mainly on account of advancing age and having no family. Excellent business premises and dwelling-house are provided. A moderate capital will suffice for the taking to, and accommodation for payment will be given, if required, on satisfactory assurances; but there is hardly any assignable limit to the extent of business that may be done, and in great part to be entered upon immediately. None but business applications, with real signature and references, will be attended to.—Address, Messrs. CHALONER and FLEMING, Liverpool.

TO PAINTERS, DECORATORS, &c.

TO BE DISPOSED OF, the GOOD-WILL, LEASE, and FIXTURES of an excellent BUSINESS, in a first-rate situation at the West End, established many years. Satisfactory reasons will be given for parting with it.—For particulars apply to Mr. JOSEPH MILLER, 74, Piccadilly.

PLUMBER'S, PAINTER'S, GLAZIER'S, and GENERAL BUILDER'S JOBBING BUSINESS at the West End, TO BE SOLD.—It is mostly amongst the nobility and higher classes, and may be obtained at a small expense, as neither the stock nor Premises need be taken, without required.—Address to S.S. at the Office of "The Builder," 1, York-street, Covent-garden.

TO IRONMONGERS.

A BUSINESS, in full operation, to be DISPOSED OF, situate in a leading thoroughfare in the City, with a country and town connexion. The premises are also adapted for a FURNISHING TRADE. Coming in about 3,000l. Principals only to apply.—Address, W. H. Mr. Sloper's, 47, Holborn-hill.

VAUXHALL BRIDGE.

TO STEAM-BOAT PIER PROPRIETORS and OTHERS.—To be DISPOSED OF by PRIVATE TENDER, the FLOATING PIER or DUMMY, lately used as a public pier for landing Steam-boat Passengers at Vauxhall Bridge; with the Rising Bridge or Gangway from the same (the latter being nearly new),—also the Wood Staircase from the rising gangway to the bridge; with the Lead Covering to the stairs, &c. &c. The particulars of which may be obtained at the Vauxhall Bridge Office, and of Mr. HITCHISON, C.E. Museum-court, Trinity-square, Tower-hill. The Tenders to be sent to the Vauxhall Bridge Office, on or before TUESDAY, 24th inst. at ONE o'clock, p.m. addressed to THOMAS JEFFERY, Esq. Clerk to the Commissioners, and endorsed on the outside "Tender for the Floating Pier," "the Rising Bridge or Gangway," or "the Staircase," as the case may be.

TO BUILDERS, LANDLORDS, AND OTHERS.

WANTED TO PURCHASE, as an investment, several small VILLAS or COTTAGE RESIDENCES, in any good locality for letting. Freehold preferred; but long leases not objectionable.—Apply by letter only, to A. B. Mrs Bellamy's, Leslie-park, Croydon.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

MASONS' PROVIDENT INSTITUTION.—The Freemasons-hall, Waterloo-road. The SECOND ANNUAL DINNER, in aid of the funds of the above Institution, will be held on MONDAY, JUNE 6th, 1853, at the FREEMASONS' TAVERN, WILLIAM TITE, Esq. F.R.S. President of the Institution, in the chair. The following gentlemen have already kindly consented to become Honorary Stewards on the occasion:—

Right Hon. Lord Robert Grosvenor, M.P.	George Godwin, esq. F.R.S.
	William Freeman, esq. treasurer.
Sir James Duke, bart. M.P.	John Foot, esq.
Sir John Villiers Shelley, bart. M.P.	John Jay, esq.
	Thomas McSweeney, esq.
Thomas Brassey, esq.	J. S. Farley, esq.
Thomas Jackson, esq.	— Chadwick, Esq.
Sidney Smirke, esq. R.A.	— Adergal, esq.
C. H. Cocker, esq. R.A.	E. Marmet, esq.

WILLIAM DIX, Secretary,

14, William-street, Hampstead road.

ARCHITECTURAL PUBLICATION SOCIETY.—The ANNUAL GENERAL MEETING of the Subscribers will be held on THURSDAY Evening, the 26th MAY,—to receive the Report of the Committee, for the election of officers for the ensuing year, &c. The meeting will take place at No. 16, Lower Grosvenor-street; the Council of the Royal Institute of British Architects having most kindly granted the use of their rooms for this purpose. The chair will be taken by Professor DONALDSON, at EIGHT o'clock precisely. The first part of the works (THE DICTIONARY OF ARCHITECTURE) for the year 1852-3, is now ready for delivery.

WYATT PAPWORTH, Hon. Secretary.

14a, Great Marlborough-street, May 17, 1853.

HAND-IN-HAND INSURANCE OFFICE, No. 1, New Bridge-street, Blackfriars, London. Established in 1696.

DIRECTORS

The Hon. Wm. Ashley	John Gurney Hoare, esq.
The Hon. Sir Edward Cust	E. Fuller Maitland, esq.
Arthur Eden, esq.	Wm. Scott, esq.
John Lettsom Elliot, esq.	John Sperling, esq.
James Esdaile, esq.	Henry Wilson, esq.
Harvie M. Farquhar, esq.	W. Esdaile Winter, esq.

Life Department.—This office offers a low scale of premiums to non-members without participation in profits, or a member's scale of premium with an annual participation in the whole of the profits after five full annual payments.

In the years 1849, 1850, 1851, and 1852, the premiums on all members' policies were abated 20 per cent. that is to say, a premium of 100l. was reduced to 47l. 10s.

Insurances effected before the 24th of June next will participate one year earlier than if effected after that date.

Fire Department. Insurances are effected on every description of property at the usual rates. By order,

RICHARD RAY, Secretary.

WEST of ENGLAND FIRE and LIFE INSURANCE COMPANY.

Instituted 1807.—Capital, 600,000l.

Persons insuring against fire, or effecting Policies upon their own, or the Lives of others, share largely in the surplus Profits, free from the possibility of loss

Prospectuses, and every required information, may be had of any of the Agents in England, Scotland, and Ireland; and of Charles Lewis, Esq., the Secretary, at the Head Office, in Exeter; and also at the Office of the Company, 20, New Bridge street, of the Manager and Agent for London,

JAMES ANDERTON.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

Established 1824.—Empowered by Special Act of Parliament.

ADVANTAGES

EXTENSION OF LIMITS OF RESIDENCE.—The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira the Cape, Australia, New Zealand, and in most parts of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit divisible in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with, at the same time, complete freedom from liability—thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of life, one-half of the annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value

BONUSES.—Five Bonuses have been declared; at the last in January, 1853, the sum of 131,195l. was added to the Policies, producing a Bonus varying with the different ages from 24s to 55 per cent. on the Premiums paid during the five years, or from 5l. to 12l. 10s. per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The present and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than at most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are indisputable except in cases of fraud.

INVALID LIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within fourteen months.

The accounts and balance-sheets are at all times open to the inspection of the assured, or of persons desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

WANTED to HIRE, a MACHINE, for testing cast-iron pipes, from 2 to 8 inches diameter, under a pressure equal to 300 feet.—Address, stating terms for six months, to Mr. JOHNSTON, Local Board of Health, Dartford.

AWARDED a PRIZE MEDAL under CLASS XIX.—TO THE CARPET TRADE.—ROYAL VICTORIA FELT CARPETING.—The Patent Woollen Cloth Company beg to inform the Trade that their NEW PATTERNS in CARPETS and TABLE COVERS for the present season are now out, and will be found far superior to any they have hitherto produced, both in style and variety. The public can be supplied at all respectable Carpet Warehouses in London and the country. The Company deem it necessary to caution the public against parties who are selling an inferior description of goods as Felted Carpet, which will not bear a comparison with their manufacture, either in style or durability; and that the genuineness of the goods can always be tested by purchasers, as the Company's Carpets are all stamped at both ends of the piece, "Royal Victoria Carpeting, London," with the royal arms in the centre.

The Company's Manufactories are at Elmwood Mills, Leeds; and Borough-road, London. Wholesale Warehouses at 8, LOVE-LANE, WOOD-STREET, CHEAPSIDE.

TO MANUFACTURING CHEMISTS, PLUMBERS, BUILDERS, &c.

ANDREW CLARK and COMPANY, PLUMBERS,

THE BEAR GARDEN LEAD WORKS, SOUTHWARK,

Invite the attention of Manufacturing Chemists to their Patent method of

UNITING LEAD TO LEAD WITHOUT SOLDER.

Leaden Chambers, or any leaden vessels, made or repaired by this process, making them complete, without the introduction of any foreign metal.

PLUMBERS and BUILDERS can be SUPPLIED with SHEET LEAD and PIPE, cut to any dimensions, and EXCHANGED for OLD LEAD, on the LOWEST TERMS.

SUPERB NOVELTIES in PAPIER MACHÉ, at MECHI'S, 4, Leadenhall-street, London.—A visit to his establishment will prove that there is not in London another such stock of elegancies. They consist of tables, envelope-cases, nottingham-boxes, companions, cabinets, jewel-cases, workboxes, dressing-cases, tea-caddies, hand and pole screens, card-racks, table inkstands, Regency writing-desks, portfolios, playing card-cases, reading-cases, cigar and tobacco cases, note and cake baskets; also an assortment of needle-cases, in pearl and tortoiseshell, silver and gold pencil-cases, penholders, and other articles suitable for presents. Inventor of the patent castellated toothbrush.

☞ Mechi's razors and magic paste are renowned throughout the world.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.

PLANS, ELEVATIONS, DRAWINGS of MACHINERY, &c. Lithographed or engraved

BUILDERS' and CONTRACTORS' ACCOUNT-BOOKS; DRAWING PAPERS; ditto, mounted and continuous; TRACING PAPER and CLOTH; ditto in lengths.

GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.

WATERLOW and SONS, 65 to 68, London-wall; and, 49, Parliament-street, London.

Contracts for the supply of large establishments.

TO BUILDERS AND OTHERS.

HAMPSTEAD. — BELSIZE-PARK. — TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot near London, approached from the Finchley-road, near the Swiss Cottage, and from the Hampstead-road through the well-known avenue of stately elms, and bounded on the north by Belsize-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr. C. J. RICHARDSON, Architect and Surveyor, 2, Keppell-street, Russell-square.

BUILDING LAND.—Some very eligible PLOTS of FREEHOLD BUILDING LAND TO BE LET for ninety-nine years, at low ground rents. Brick on the ground. Money advanced. Apply to Mr. RICHARD FIELD, Surveyor, 34, Coleman street, City.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 25, Old Jewry. Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate.

BROMPTON ESTATE.—Arrangements having been completed with the Commissioners for the Exhibition of 1851, the remaining portion of this estate is now TO BE LET on BUILDING LEASES.—Plans may be seen, and full particulars obtained, at the Office of the Estate, Brompton-park, Old Brompton

TO BUILDERS AND OTHERS.

SEVERAL PLOTS of eligible BUILDING GROUND in the suburbs and environs of London To BE LET, on favourable terms, either in large or small quantities.—For particulars, apply to Mr. E. A. SPURR, Architect and Surveyor, 3, Newton-road, Bayswater.

TO BUILDERS AND OTHERS

FOREST-HILL, SYDENHAM.—BUILDING GROUND TO BE LET, at the upper part of Forest-hill, within three minutes' walk of the railway station.—The plans and particulars of which may be seen at the Office of Mr. AITCHISON, Muscovy-court, Trinity-square, Tower hill.

THE Vestrymen of Richmond, Surrey, intend LETTING BY TENDER, on building leases, for ninety-nine years, from Midsummer-day, 1853, THREE PLOTS of FREEHOLD BUILDING GROUND, land-tax redeemed, most eligibly situated in the Queen's-road, near Richmond-hill and the Park, and within a few minutes' walk of the Railway Station, containing respectively 545 feet, 330 feet, and 273 feet of frontage. Particulars and plans of the ground may be had of Mr. RICHARD BREWER, Surveyor, Hill-street, Richmond; Messrs. HUMPHREY and BIRD, No. 10, Great Ormond-street; or of HENRY SMITH, Esq. Solicitor, Richmond, to whom Tenders are to be sent on or before the 28th inst. The Vestry do not bind themselves to accept the highest Tender.

Richmond, Surrey, May 10, 1853.

ST. JOHN'S PARK, HAVERSTOCK-HILL, HAMPSTEAD.—About 35 Acres TO LET on Building Lease, laid out in handsome terrace and convenient plots for single and semi-attached residences. Frontages 16 feet, 19 feet, 30 feet, 35 feet, 40 feet, 49 feet, &c. &c; each with depths varying from 50 feet to 180 feet. This Estate offers some of the finest sites in the environs of London, close to the Hampstead-road station of the Blackwall and Fenchurch-street Railway, and within a few minutes' walk of Primrose-hill, the Regent's-park, or Hampstead-heath. A considerable portion of the sewerage is already complete, and the roads are being rapidly formed through the whole estate. For particulars apply to Mr. E. J. KELLY, Architect, 32, Charlotte-st. Bedford-hill, or Mr. C. M'DUFF, Solicitor, 37, Castle-street, Holborn.

EXTENSIVE MANUFACTURING PREMISES (near Westminster-bridge) TO BE LET, comprising very spacious ranges of workshops, warehouses, stabling, and other buildings, with a 14-horse steam-engine therein, and a large open yard, suitable for a first-rate engineering, building, sawing-mill, or other establishment requiring space, or will be divided into smaller lettings.—For particulars, apply to Messrs. EVERSFIELD and HORNE, Auctioneers and Estate Agents, 40, Parliament-street, Westminster.

TO BUILDERS AND OTHERS.

CROYDON.—TWO SEMI-DETACHED and TWO DETACHED VILLAS, in course of erection, situate in the Addiscombe-road. TO BE LET on long Lease or for Carcases TO BE SOLD. Also BUILDING LAND TO BE LET adjoining the above on moderate terms with or without advances. The carcase (when finished) will let for about 60l. to 70l. per annum each. The property is very pleasantly situated within a few minutes' walk of the Croydon Railway Station. For further particulars, apply to JAMES COE and SON, 1, Carpenter's-buildings, London-wall, City.

BARNES, SURREY.—TO BE LET on Building Leases, a considerable extent of the Frontage next the High-road leading from Hammer-mith Suspension Bridge to Barnes.—For particulars apply at the Offices of Messrs. WIGG, POWNALL, and WIGG, 7, Bedford-row.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views.—Money advanced, and bricks may be had, delivered on the site of the intended building, at 30s. per thousand.—For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

NO. 34, WHITECHAPEL-ROAD.—TO BE LET, on Lease, excellent BUSINESS PREMISES, most substantially rebuilt, and late in the occupation of Mr. James Walker, Ironmonger.—Apply personally to Mr. J. W. JEWITT, 45, Lime-street, City.

BUILDING LAND in EALING, Middlesex. TO BE SOLD, several PLOTS of Freehold Land, situate in the Ealing-road, midway between the Ealing and Hanwell Stations on the Great Western Railway. Frontage 135 feet; average depth, 98 feet. Price, £270.—Apply to Mr. E. CORFIELD, 80, Silwood-terrace, Brompton, Middlesex.

FREEHOLD GROUND, BARNET.—TO BE SOLD, by PRIVATE CONTRACT, between 12 and 13 Acres of valuable BUILDING GROUND, having a frontage to the turnpike-road from Whetstone to High Barnet, and within three-quarters of a mile of the East Barnet Station, on the Great Northern Railway. This land is beautifully situated, with a warm and cheerful aspect, commanding fine views, and well adapted for all building purposes. Its proximity to the railway station and to the towns of High Barnet and Whetstone, and its easy distance by turnpike-road to all parts of the metropolis, render it worthy the attention of building societies, as well as for private speculation.—For particulars apply at the Office of Mr. TUNNIS, 11, Great George street, Westminster.

TO CAPITALISTS, BUILDERS, AND OTHERS

WESTON-SUPER-MARE, SOMERSET.—The only FRONTAGE LAND to the SEA remaining unbuilt upon in the town TO BE SOLD, by the Sea Sands and inheritance of and in ALL those several LOTS of FREEHOLD LAND in one or more lots, as now marked out for building in an intended NEW SQUARE. About twenty large houses FRONTING AND OPEN ON THE WEST SIDE TO THE ESPLANADE AND THE SEA, OVER WHICH THERE IS AN UNINTERRUPTED VIEW. The square is intended to be 200 feet from north to south, and 200 feet from east to west, and to communicate on the east side with a handsome NEW STREET, about 40 feet wide and between 400 and 500 feet long. This valuable property is bounded on the south by Regent-street, and on the north by the Hotel-field, and contains altogether nearly four acres of the finest building land. The finest Building Stone at 1s 8d. per ton; best Lime 28s. per 100 bushels; best Building Bricks 21s. per Thousand, all delivered. The finest Building Sand on the spot, gratis. Timber, Bath Stone, &c. by Sea and Rails into the place. Free from all Town and other Dues. These lots may be purchased or held on ground-rents at the option of the purchasers.—Plans and further particulars may be had of the proprietor, S. GUY PHILLIPS, Esq. West-in-super-Mare.

TO BE SOLD, to pay nearly 18l. per cent. FOURTEEN SUBSTANTIAL LEASEHOLD FOUR-ROOMED HOUSES and YARDS, let to respectable weekly tenants, and bringing in an income of upwards of 140l. per annum above the ground-rents. Price 800 guineas.—Further information can be given, and also an inspection of the property, by application to Mr. CHARLES TAYLOR, 116, Dover-road, Southwark.

TO BUILDERS AND CONTRACTORS.

A BUILDER in the suburbs of London, about relinquishing business, wishes to DISPOSE of his PREMISES, together with the utensils stock-in-trade, &c.—Any person having at command 1,800l. to 2,000l. would find this a first-rate investment.—For further particulars apply to S. C. 14, Hanover-street, Walworth, Surrey.

NATIONAL FREEHOLD LAND SOCIETY.—TO ROAD CONTRACTORS.—The Directors are prepared to receive TENDERS for CONSTRUCTING the ROADS on the following Estates, purchased for the Members, namely:—

At BISHOP'S STORTFORD.....Herts.
" MERTON.....E. Surrey.

The drawings and specifications may be seen at the offices of the Surveyor, Mr. JAMES WILSON, to whom the Tenders are to be sent, on or before WEDNESDAY, JUNE 1st, endorsed "Tender for Roads at ——" (naming locality). Drawings and specification of the works, at Bishop's Stortford; may also be seen on application to WM. MERRIMAN LEE, Esq. Solicitor, Bishop's Stortford. The Directors do not bind themselves to accept the lowest Tender.

31, Moorgate-street, London, May 19, 1853.

SALES BY AUCTION.

Superior Chimney-pieces of beautiful Statuary Marble; also black, black and gold, dove, and vein marbles, in great variety, and two monuments, to be taken under distraint for rent.

MESSRS. ROBINS will SELL by AUCTION at their ROOMS, in Covent-garden, on TUESDAY, MAY 24th, at TWELVE, SEVEN SUPERIOR STATUARY MARBLE CHIMNEY-PIECES, some richly sculptured, suitable for first-rate drawing-rooms, the others of a less expensive character, with trusses, black and gold, black and dove marble chimney pieces, and a great variety of vein marble.—On view one week prior, at the Auction Rooms, in Covent-garden.

The very extensive, important, and valuable Library formed by M. le Baron Taylor, deceased, comprising fourteen days' sale.

MESSRS. S. LEIGH SOTHEBY and JOHN WILKINSON, Auctioneers of Literary Property and Works of Art, will SELL by AUCTION, on WEDNESDAY, 1st JUNE next, and thirteen following days, at ONE o'clock precisely each day, at their House, 3, Wellington-street, Strand, London, the highly important, extensive, and valuable LIBRARY of M. le Baron J. Taylor, Membre de l'Institut; Président Honoraire des Assocations des Artistes Dramatiques; Musiciens, Peintres, Sculpteurs, Architectes, Graveurs, et Dessinateurs, Président Honoraire de la Société des Gens de Lettres. This collection has been formed during the last forty years, at great cost, and comprises illustrations of pictorial and decorative art in their varied departments, consisting of beautiful copies of the noble galleries of artistic treasures in England, France, and other parts of Europe; also examples of costume, ancient and mediæval art, productions of the skill and ingenuity of the various countries of Europe; the collected engraved works of the Caracci, Della Bella, Primaticcio, Rembrandt, Rubens and Sir Joshua Reynolds, embracing the chefs-d'œuvre of these distinguished painters. There will also be found many antiquarian, historical, architectural, and topographical works, with several thousand specimens illustrative of the art of ornamental design and decoration. There are likewise some highly interesting early pageants and public entries of celebrities, picturesque and romantic voyages; curious and rare examples of Xylographic art; a large collection of general treatises on the Fine Arts; costumes of various countries; some popular religious histories and rare romances; valuable edit ns of the best works of noted French writers; and some interesting original manuscripts, chiefly on Egyptian, Mexican, Celtic, and French antiquities, by that distinguished antiquarian, Alexandre le Noir. It may be justly affirmed that so important an assemblage of works on the above popular subjects, alike interesting to the artist, amateur, archæologist, and manufacturer, has never before been offered for public competition. Catalogues are now ready, and may be had at the place of sale, price 2s. 6d. Sent postage free on receipt of 3s. in postage stamps.

SALES BY AUCTION.

WARD'S PERIODICAL TIMBER SALES. —The next SALE by AUCTION will take place at the TIMBER-YARD, Bermondsey New-road, Southwark, on WEDNESDAY and THURSDAY, the 1st and 2nd of JUNE, at ONE o'clock precisely, and will comprise about
100,000 feet of dry Honduras, in flitches, planks, and boards.
300 logs of City St. Domingo Mahogany, some of them of very superior quality
15,000 feet of dry Honduras and Cedar panel board.
50,000 feet of Spanish, Walnut and Rosewood veneer.
American Ash and Birch, in planks and boards; a large quantity of White, Yellow, and Pine Planks, Deals, and Battens; Dantzic and Swede Timber, Ash and Beech Plank, Beech Quarters, Spokes and Felloes, &c.
Catalogues will be ready in due time, and will be forwarded on application to ROBERT WARD, Timber Auctioneer, Bermondsey New-road.
N.B. The Yard is now open to receive such goods as may be intended for this sale.—The business of a Timber Merchant carried on as usual.

TO MANUFACTURERS, BUILDERS, HOUSE DECORATORS, AND OTHERS.—The valuable Patent Cannabic Ornament for external and internal architectural decorations, as exhibited in the Great Exhibition of 1851, and most successfully used and tested at the Royal Italian Opera-house, Covent-garden, Sadlers' Hall, and various other public buildings and private residences.

MR. MARSH has received instructions from the patentee, in consequence of a dissolution of partnership, to SELL by AUCTION, on the PREMISES, 29, Marylebone-street, Regent street, on MONDAY, MAY 23, and following day, at ELEVEN for TWELVE o'clock precisely, the LETTERS PATENT for England for the above valuable and important INVENTION, which has met with universal success both in this country and on the continent; also the whole of the STOCK in trade of the highest importance to persons connected with building operations, ornaments of every description being formed by this process, vying in their finish and delicacy with wood or metal, being capable of gilding and the highest degree of burnishing, for which the patentee obtained the gold medal of the Society of Arts. Also the stock of decorations, in numerous lots, comprising about 1,500 cottage and elaborate patterns of every size and description, many engravings, with a correct representation of a great portion of the above decorations, highly commented upon by the "Builder" and other architectural papers; an hydraulic press of great power in good working order, and material ready for use.—May be viewed the week preceding and the mornings of the sale, and particulars obtained on the Premises; of Messrs. Horwood and Son, Solicitors, 47, Chancery-lane; and at Mr. Marsh's Offices, 2, Charlotte-row, Mansion-house.

TO BUILDERS, CONTRACTORS, AND OTHERS.—Building Materials, Brompton and Kensington.

MR. MARSH has received instructions (in consequence of the ground being required for building purposes) to SELL by AUCTION, on the PREMISES, on TUESDAY, JUNE 7th, at TWELVE o'clock, in lots, the whole of the MATERIALS of the residence known as Cromwell House; also a Cottage, known as Cromwell-orchard, six small Houses in Cromwell-row, and a Cottage in Cromwell lane. Several sheds, outbuildings, and garden walls, containing a large quantity of timbering, bricks, sashes, and frames; also a large number of trees, principally fruit, and a quantity of shrubs.—Catalogues are preparing, and may be obtained in due course at the Office of Works, Brompton-park, and at Mr. Marsh's Offices, 2, Charlotte-row, Mansion-house.

IMPORTANT WATERSIDE PREMISES CLOSE TO SOUTHWARK-BRIDGE.

MR. MARSH has received instructions from the proprietor (to LET for a term the magnificent pile of Warehouses, lately erected at a large cost, known as Red Lion Wharf, Upper Thames-street, within a few yards of Southwark-bridge, containing six floors of about 5,000 square feet on the ground and first floors, well laid with paving on brick arches. Powerful and judiciously placed cranes are fixed on each front.—May be viewed, and further particulars with plans and terms obtained, at Mr. MARSH'S Offices, 2, Charlotte-row, Mansion House.

BRASS BATTERY WORKS, WANDSWORTH, BY Messrs. FULLER and HORSEY, on the Premises, GARRET-LANE, Wandsworth, Surrey, on TUESDAY, MAY 24, at TWELVE, in lots, without reserve, in consequence of the business having been disposed of, the PLANT and MACHINERY, forming the whole fitted up for the trade, 120 double faced dies, eight powerful stamping presses with anvil and dies, circular saw bench and saws, powerful punching press, steel and tools, three capital benches, cranks and shelving, forge, bellows and tools, gas fittings, weighing machines and weights, mahogany tables, cast iron lacquering plate, hot plate, lead cisterns, brass force pump, galvanized corrugated iron warehouse 60 feet long, 15 feet wide 8 feet high, close-bodied van on springs, counting-house fittings, wrought-iron bookcase, desks, and numerous other effects. At the same time will be sold, the valuable patent for the manufacture of metallic boxes. To be viewed the day previous and morning of sale. Catalogues may be had on the premises; and of Messrs. Fuller and Horsey, 13, Billiter-street, London. The spacious premises to be let.

TO BUILDERS AND OTHERS.—TO BE SOLD BY AUCTION, BY

MESSRS. FULLER and HORSEY, on TUESDAY, MAY 31, 1853, at ELEVEN o'clock, at the WAREHOUSES, Church-street, Saint Saviour's, Southwark, in lots, SIXTY MARBLE CHIMNEY-PIECES of modern design, in veined and statuary marble.—To be viewed on Saturday previous to the sale, when catalogues may be had at the warehouses; and of Messrs. Fuller and Horsey, 13, Billiter-street, City.

TO IRONMONGERS, ENGINEERS, CONTRACTORS, DOCTOR MAKERS, SMITHS, AND OTHERS.

MESSRS. FULLER and HORSEY, on MONDAY, MAY 23rd, 1853, and following days at ELEVEN o'clock, at the WAREHOUSES, Church-street, St. Saviour's, Southwark, by order of Mr. George Winter, and with the concurrence of the executors of the late Mr. Green, the second portion of the extensive STOCK of IRONMONGERY, removed for convenience of sale from the Premises, Bank end, Southwark, including 200 bags wrought and cut nails; rope, chain, deck, barge, pile, shoe, and dog nails; railway rods and pins; 5 tons Sanderson's cast and shear steel; 1 ton hand and sledge hammers; 150 dozen scythes, sickles, & d reap-hooks; 5 tons rivet and coach bolts; 150 gross welded thimble skeins; 30 cwt. tackle blocks; carriage and cart arms; steel tools, in chisels, gouges, augurs, &c.; founders' ladles; powerful double and treble shear-blocks; snatch blocks; cast street-gratings; stable gratings; rain water heads and shoes; pipes and bends; pig-troughs; wood and stove screws; locks, hinges, iron-work, and general ironmongery. To be viewed on SATURDAY previous to the Sale, when catalogues may be had at the Warehouses, and of Messrs. Fuller and Horsey, 13, Billiter-street, City. Approved bills at three months' date will be taken from purchasers to the extent of 5l. and upwards.

HAMPSHIRE.—Most eligible Investments and valuable Building Land in and near Winchester.

MESSRS. GODWIN and SON are instructed to SELL by AUCTION, at the GEORGE HOTEL, WINCHESTER, on WEDNESDAY, the 8th JUNE, 1853, punctually at TWELVE o'clock, in Thirty-eight lots, the following highly important and valuable properties, viz.—

NINETEEN CAPITAL FREEHOLD DWELLING-HOUSES, with gardens and premises, situate in the High-street, and the best parts of the city of Winchester, substantially and recently built, in excellent and ornamental repair, and in the occupation of very respectable tenants.

A capital Freehold Inn (the Castle Tavern) and valuable Plots of Building Ground.

About Fourteen Acres of most desirable Building Land, within the City, in the parish of St. Faith, commanding varied picturesque views, with excellent approaches, and altogether superior to any situation in the vicinity for the erection of villas and other genteel residences, so much sought after in this improving neighbourhood.

Also Six substantial Copyhold Dwelling-houses, with Gardens, at Twyford.

And about an Acre of very eligible Building Land at Colden Common, near Winchester.

Particulars, with plans, will be forwarded on application to C. Seagrim, Esquire, Solicitor; or the Auctioneers, Winchester.

SALES BY AUCTION.

CROYDON, SURREY.—Stock in Trade of a Timber Merchant.

MESSRS. BLAKE will SELL by AUCTION, upon the Wharf communicating with the East Croydon Railway Station, Addiscombe-road, on MONDAY, JUNE 6th, at TWELVE o'clock, by order of Mr. G. H. Holledge, who has sold the wharf to the Railway Company and relinquishes the timber trade, 1,000 sawn oak fence-posts, 500 pairs of oak cant rails, 300 gravel planks, 7,000 cleft oak pales, 15 loads of round and hewn oak, 10 oak field-gates, with sawn posts; 500 pairs of larch rails, and 300 posts; 100 deals and battens, 20 stacks of oak slabs, oak plank, scantling, elm board, and useful materials. Timber wheels with nob, chains and jack, hand-truck, grindstone, and other trade implements.—May be viewed three days before the sale, and catalogues had on the premises, at the Station in the surrounding neighbourhood at Garraway's Coffee House, Change-alley; the Artichoke Inn, Newington-causeway; and of Messrs. Blake, Croydon.

TEDDINGTON, MIDDLESEX.—Valuable Freehold Building Land, tithe free, and land-tax redeemed. FOR SALE, by

MESSRS. COBB, at the MART, London, on TUESDAY, the 21st day of JUNE next, TWENTY-FOUR PLOTS of FREEHOLD BUILDING LAND, each containing about a quarter of an acre, with good frontages and sufficient depth for large gardens, in a very pleasant and healthy situation, close to the village of Teddington and to Bushey-park, on the road from Richmond to Hampton court, within two miles of the Twickenham railway station.—Particulars, with plans, may be had at the Clarence Arms; of Mr. Rich, at Teddington; at the Mart; of Messrs. Simpson and Cobb, Solicitors, 62, Moorgate-street and of Messrs. Cobb, Surveyors and Land Agents, 18, Lincoln's-inn-fields.

TO CABINET-MAKERS, PIANOFORTE-MAKERS, TIMBER MERCHANTS, BUILDERS, AND OTHERS.

SKEEN and FREEMAN have received instructions to submit to public AUCTION (in consequence of the death of Mr. Charles Tuely, and by order of the Executors), on the PREMISES, Bridge-wharf, City-road, on TUESDAY, JUNE 7, and following days, the large and valuable STOCK, belonging to Messrs. Tuely and Co. consisting of Honduras and Spanish MAHOGANY, in logs, planks, &c. among which there is a large assortment of wood of extraordinary figure and quality, the careful selection of a considerable period; also cedar, rosewood, wainscot, maplewood, birch, satinwood, deals, &c.—Catalogues to be had in due time of the Brokers, 75, Old Broad-street.

Valuable Freehold Building Land, containing 6,891 square yards, adjoining the Masbrough Station of the Midland Railway.—Important to Ironmasters, Brass and Iron Founders, Steel Refiners, Mill Owners, Railway, Rail, and Wheel Makers, and other Manufacturers.—TO BE SOLD by AUCTION, by

MR. NICHOLSON, at the PRINCE OF WALES HOTEL, opposite the Railway Station, Masbrough, near Rotherham, in the county of York, on MONDAY, the 30th day of MAY, 1853 at FIVE o'clock in the afternoon, together, or in the following Lots, subject to Conditions of Sale.—Lot 1. All that piece of FREEHOLD LAND, containing 6,891 square yards, or thereabouts; also a DWELLING-HOUSE thereon, used as a beerhouse, and a COTTAGE, situate at Masbrough aforesaid, adjoining and having an extensive eastwardly frontage to the Midland Railway, at the Masbrough Station, and a westwardly frontage to a public street.—Lot 2. All that plot of FREEHOLD LAND, containing 2,800 square yards, or thereabouts (lying on the north side of Lot 1) having also an extensive eastwardly frontage to the Midland Railway, and a northwardly frontage to the Rotherham and Wortley Turnpike-road. Both lots are in the occupation of James Haworth and others. The above land lies at the Junction of the Midland with the Sheffield and Rotherham Railway, about five miles from Sheffield, one mile and a half from the extensive Parkgate iron-works of Messrs. Hunsley Beale and Co. of Rotherham, half a mile from the Effingham works of Messrs. Yates, Haywood, and Co. the Phœnix works of Messrs. Sandford, Owen, and Watson, the Masbrough works of Messrs. Myers, Cortis, and Co. and the rolling-mills of Messrs. Brown and Sons, only a few hundred yards from the well-known and justly-celebrated steel works at the Holmes of Messrs. Naylor, Vickers, and Co. Sheffield, and about one mile and a half from the Masbrough iron-works of Messrs. Beale and Co. the engineering establishment of Mr. Isaac Dodds, and the rolling-mills of Messrs. Habershon, about one hundred yards from the Midland iron-works, three-fourths of a mile from Rotherham, and twelve from Barnsley, and is admirably adapted for the erection of extensive iron, steel, or other works requiring a ready, never-failing, and cheap supply of good coal, and the means of railway transit. The land lies also within a very short distance (in some instances not more than 400 to 800 yards) from the extensive coal and ironstone mines of Messrs. Chambers, the Earl Fitzwilliam, and others, from the greater number of which there is a direct railway communication. The River Don, by which water carriage for heavy goods without transhipment is open to the sea, is also within a few hundred yards of the above property.—Lithographed plans, and all further information may be obtained on application to Mr. Lawson, Surveyor, Masbrough, Rotherham; or Mr. Badger, Solicitor and Notary, High-street, Rotherham; or (any Tuesday) at his Offices, 12, Bank-street, Sheffield.

First Sale of the Surplus Land of the East and West India Dock and Birmingham Junction Railway, in the immediate vicinity of London, comprising several Houses, and numerous plots of Freehold Building Land, offering first-rate investments, and votes for the county of Middlesex

MR. BEADEL has received instructions from the Directors of the above Company, to SELL by AUCTION, at the MART, Bartholomew-lane, on THURSDAY, the 26th of MAY, at TWELVE, in about nine lots, the following very eligible PROPERTIES, viz. three substantial houses and several plots of building land, with frontage to the Fartfield-road, in the parish of Bow, and close to the station; also the following houses in Knox-street, at Haggerston, capital building sites in Northampton park, with frontage to the Albion-road; at Hackney, a large plot of extremely valuable land near to the station, with about 1,110 feet frontage to St. Paul's road, and well adapted for the erection of first-class villa residences. The whole of this property will be submitted in convenient lots, and from its eligibility of situation is well entitled to the attention of both capitalists and builders.—Particulars may be obtained of Messrs. Tyrrell, Paine, and Layton, Solicitors, Guildhall-yard; and of Mr. Beadel, 25, Gre-ham-street.

Exe llent materials of the Chesnuts, Tottenham, the Mansion formerly occupied by the late Mr. Powell; also the growing timber crops of trees, after feet.

MESSRS. RICHARDS and SON, on the PREMISES, on WEDNESDAY, 1st of JUNE, 1853, and following day, at ELEVEN o'clock each day, in lots. The materials, to be taken down by the purchaser, comprise 63 squares of excellent yellow batten and other flooring-joists, 10 inches by 3½ inches, 45 mahogany, oak, and other sashes and frames, six panel, moulded, and other doors, flights of stairs, mahogany hand-rails and balusters, closets, linen-presses, handsome mahogany and other chimney-pieces, mahogany secretary and bookcase, dwarf ditto, 30 squares of slates, pan, and plain tiles, 25,000 bricks, 1,300 feet of York paving, flights of Portland stone steps, window sills, 200 feet of coping carved caps, Dutch tiles, chimneys, &c. About six tons of lead, force and other pumps, water-closets, coppers, register stoves, range, 3 in number, of greenhouse, iron and other fencing, corn-bins, materials of coach-houses and stabling, timber trees, comprising 100 chesnuts, 25 sycamores, 11 oaks, 38 lime, 30 elms, 8 large walnuts, 45 willows and poplars, &c. sold to clear the land for the new approaches to the Tottenham Hall railway station. Builders requiring ground, should make early application. View day prior and mornings of sale. Catalogues, 6d. each, may be obtained of E. Scarlett, Esq. Solicitor, 5, Sackville-street, Piccadilly; of Mr. Gray, Architect, 5, Conduit-street, Regent-street; and of the Auctioneers, Tottenham.

5,000 PIECES OF PAPER-HANGINGS, and MARBLE CHIMNEY-PIECES.

MR. BRAY will SELL, at his ROOMS, 259, HIGH HOLBORN, on WEDNESDAY, MAY 25, at TWELVE, the first portion of the STOCK of a wholesale dealer, lately deceased, consisting of upwards of 5,000 Pieces, suitable for the drawing and dining rooms, parlours and principal rooms, and secondary apartments.—May be viewed, and catalogues had.

SALES BY AUCTION.

Preliminary Advertisement.—Surplus Lands, Houses, and other valuable Property, in the parishes of Wandsworth, Putney, and Barnes, on the Richmond Railway.

MESSRS. HOGGART, NORTON, and TRIST have received instructions to offer for SALE, on FRIDAY, JUNE 17th, at TWELVE, in numerous lots, a very considerable PORTION of the SURPLUS PROPERTY, in the parishes of Wandsworth, Putney, and Barnes, on the Richmond Railway; comprising very valuable plots of building land on the north and south sides of the railway; several small houses and gardens in the parish of Wandsworth; the capital residence, garden, and land, at Putney, in the occupation of —Bainbridge, esq.; valuable building plots, fronting the Richmond road; several small houses, in the parish of Putney; and two pieces of building land, on Barnes Common. An advertisement explaining the arrangement of the various lots will appear next week. May be viewed by permission of the tenants, and particulars shortly had of Messrs. Bircham, Dalrymple, and Blake, Solicitors, 66, Parliament-street; of W. Tite, Esq. St. Helen's-place; L. Crombie, Esq. London and South-Western Railway Office, York-road, Lambeth; at the stations on the line; at the Mart; and of Messrs. Hoggart, Norton, and Trist, 62, Old Broad-street.

STRATFORD, ESSEX.—Valuable Freehold Family Residence, with Pleasure-grounds and Offices, Two Dwelling-houses, and about 18 acres of most important Freehold Building Land, close to the Railway Station, and only five miles from the City.

MESSRS. HOGGART, NORTON, and TRIST have received instructions from the Trustees under the Will of the late Wm. Stanley, esq. to offer for SALE by AUCTION, at the MART, on FRIDAY, JUNE 3, at TWELVE, in 12 lots, the following highly valuable FREEHOLD PROPERTIES, viz.:—Lot 1. An excellent Freehold Family Residence, handsomely fitted, detached, and situate at Maryland-point, Stratford, Essex, on the high road to Leytonstone and Epping Forest, and within a few minutes' walk of the Stratford Station, on the Eastern Counties Railway, containing numerous bed chambers and dressing-rooms, capital secondary staircase, drawing, dining, and breakfast rooms, entrance-hall, capital domestic offices, water-closets, coach-house, stabling, man's rooms, harness-room, cow-house, and other offices, with yard, detached pond, poultry-yard, paddock, extensive pleasure-grounds shrubbery walks, greenhouse, and well stocked kitchen gardens, containing altogether nearly 3 acres, and possessing a frontage of 200 feet to the high road of about 450 feet; in the occupation of —Soams, esq. yearly tenant, at the low rent of 100l. per annum. Lot 2. Two Freehold Dwelling-houses, situate adjoining lot 1, each containing several bedrooms, two parlours, and other conveniences, and front and back gardens; let to yearly tenants, at rents amounting to 44l. per annum. Lots 3 to 12 will comprise about 18 acres of exceedingly valuable Freehold Building Land, situate on the east side of lot 1, possessing a frontage to the high-road of about 700 feet, and frontages to a proposed new road of about 2,400 feet, by very considerable depths, each lot varying in extent from ¼ to 2 acres; the whole admirably adapted for the erection of villa residences, and giving purchasers votes for the county. May be viewed, by permission of the tenants, with the auctioneers, and particulars, with plans, had (14 days prior to the sale) at the Green Man, Leytonstone; Eagle, Snaresbrook; the Swan, Stratford; of Messrs. Sutton, Ommanney, and Prudence, Solicitors, 8, Basinghall-street; at the Mart; and of Messrs. Hoggart, Norton, and Trist, 62, Old Broad-street, Royal Exchange.

CARSHALTON, SURREY.—Valuable Freehold Building and Accommodation Land, comprising upwards of 90 acres and a Piece of Copyhold Land, containing upwards of two acres, the whole land-tax redeemed.

MESSRS. HOGGART, NORTON, and TRIST, have received instructions to OFFER for SALE by AUCTION, at the Mart, on FRIDAY, JUNE 10, at TWELVE, in five lots, the following highly valuable FREEHOLD ESTATES, viz.:—Lots 1 and 2. Two valuable and extensive Plots of Freehold Building and Accommodation Land, delightfully situate in the County of Surrey, near to Barrows Hedges and Beddington and Carshalton Parks, and within a few minutes' walk of the Carshalton Station, on the Croydon and Epsom Railway, possessing very important frontages to the new road leading from Croydon to Wood Immstone, by considerable depths; containing altogether nearly 90 acres, presenting delightful sites for the erection of villa residences and offering a rare opportunity for an extensive building speculation. Lot 3. A very important Plot of Freehold Building Land, adjoining the Carshalton Station, at Carshalton, possessing a valuable frontage to the road from Carshalton to the Croydon and considerable frontages to new roads, containing 11 acres and 28 perches. Lot 4. A very valuable Plot of Freehold Building Land, bounded by land belonging to Mr. Alcock and Mr. Jonas Cressingham, and near the Chalk-pits, possessing a capital frontage to the road from Sutton to Carshalton, by a considerable depth, and containing 11 acres and 24 perches; valuable in itself, and small part Copyhold Estate, in the rear of Lot 4, bounded by land belonging to Mr. Croft and near the village of Carshalton, containing 2 acres, 0 roods, 29 perches, which is fully approached. The property is nearly equal in value to Freehold, being held for an unexpired term of 417 years, at a peppercorn. From its immediate proximity to the Metropolis, and the very different modern building sites within so short a distance, this property is well worthy the attention of builders, and is well adapted for cottages.—Particulars and plans may be had of Messrs. Dunning and Pope, Solicitors, 35, Fenchurch-street; of Messrs. Kendall and Pope, Architects, 23, Brunswick square; at the Mart; and of Messrs. Hoggart, Norton, and Trist, 62, Old Broad-street, Royal Exchange.

CAMBERWELL, SURREY.—Important Building Land, giving votes for the County, only three miles from the City.

MESSRS. HOGGART, NORTON, and TRIST have received instructions to OFFER for SALE, at the Mart, on FRIDAY, JULY 1, at TWELVE, in 50 lots, unless previously disposed of by Private Contract, twenty-eight plots of very valuable BUILDING-LAND, eligibly situate in the front of Camberwell-grove, from which it is approached. The property is nearly equal in value to Freehold, being held for an unexpired term of 417 years, at a peppercorn. From its immediate proximity to the Metropolis, and the very different modern building sites within so short a distance, this property is well worthy the attention of builders, and is well adapted for cottages.—Particulars and plans may be had of Messrs. Dunning and Pope, Solicitors, 35, Fenchurch-street; of Messrs. Kendall and Pope, Architects, 23, Brunswick square; at the Mart; and of Messrs. Hoggart, Norton, and Trist, 62, Old Broad-street, Royal Exchange.

NORWOOD, SURREY.—Valuable Freehold detached Residence, with pleasure-grounds, gardens, and offices, and about thirty acres of first-class Freehold Building Land.

MESSRS. HOGGART, NORTON, and TRIST have received instructions from the Executors of the late Mr. Waller to offer for SALE by AUCTION, at the MART, on FRIDAY, JUNE 24th, at TWELVE, in thirty-four lots the following extremely valuable estates, viz.:—

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Lots 2 to 6. Five very valuable PLOTS of FREEHOLD BUILDING LAND, beautifully situate, adjoining Lot 1, each possessing a frontage of about 80 feet to the Hi h-road to Lower Norwood, by an average depth of 250 feet, or thereabouts.

Lot 7 to 33 inclusive, will comprise Twenty-seven valuable PLOTS of FREEHOLD BUILDING LAND, situate at the rear of the preceding Lots, possessing capital frontages to good roads, varying from 100 to 150 feet, by very considerable depths, and presenting most eligible sites for the erection of Villa Residences.

Lot 34. A very valuable and highly important PLOT of FREEHOLD BUILDING LAND, beautifully situate, adjoining the Estates of W. R. Hickling, and C. Ranken, Esquires, at Lower Norwood, containing 10 acres and 38 perches, having a frontage of about 1,100 feet to the New Road to Dulwich Common, (which will most probably at no distant date be the main approach from the West End to the New Crystal Palace), and offering to Capitalists and Builders, an exceedingly desirable property for a profitable building speculation.—May be viewed, and particulars with plans had twenty-one days prior to the sale, at the principal Inns at Norwood, Sydenham, and Croydon; at the Mart, and of Messrs. Hoggart, Norton, and Trist, 62, Old Broad-street, Royal Exchange.

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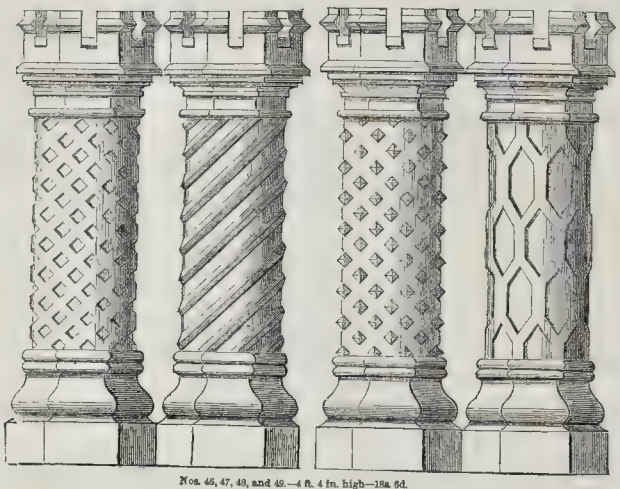
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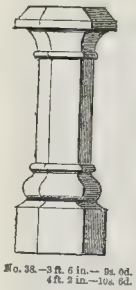
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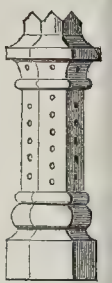
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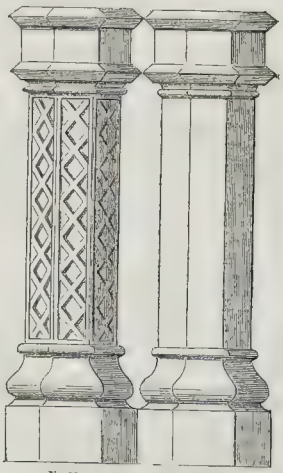
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The Builder.

SATURDAY, MAY 28, 1853.

THE condition of the houses of the London poor has continued to occupy our attention during the intervals afforded by other duties, though the examination dishearteens and distresses. Nothing short of personal experience would have led us to believe in the frightful amount of ignorance, misery, and degradation which exists in this wealthy and luxurious city,—this city of 300,000 houses and two millions and a quarter of persons. The number of *children* who are at this time being educated in vice, fitted for disturbing and injuring society, forbidden from good, and prepared for a life of misery,—children who have no affections or ties; in whom natural good feelings have been quenched; who have no advisers but the bad; no home, no hope;—is perfectly appalling. They are to be counted in thousands; we fear to say how many. Can nothing be done to save them and so save society? Here is a fertile field appealing for labourers to the Christian, the philanthropist, the political economist, and the mere egotist, who would save himself money and annoyance by preventing, instead of punishing. Let us remember, there is no irremoveable reason why these children should grow to be disorderly and lawless,—liars, thieves, perhaps murderers; they were born as capable of good as your own offspring; and, with the same nurture and teaching, would make as useful members of society. Lead them into good habits; imbue them with right principles,—and their lives, in the natural course of things, will be in accordance with these habits and principles. Equally as a matter of course will the lives of these poor outcasts follow *their* training. Knowing the seed, we know what the plant must be. It seems almost an injustice to punish for a natural result.

Here, we feel satisfied, is the right spot for the spade of those who would reap a rich harvest of good, and earnestly we pray that they may be found.

The same course of argument proves irresistibly, the importance of improving the dwellings of the poor, and the evil which is being done by all acts which tend to crowd men and women into unsuitable, ill-drained, ill-ventilated, and dilapidated buildings. The rapidity with which this changes the character of the occupants is startling to those who have not before observed it.

We are being led away, however, from our original intention on the present occasion, which is to give some additional information concerning the weavers of Spitalfields, in accordance with our promise on a former occasion.* This large district, inhabited by silk weavers, is but little known, except to those whose business is connected with the place; it has, however, remarkable features, and is well worthy of a visit. Some of the streets are composed of well-built houses, from three to four stories high, having, in the upper rooms, glazed windows extending the whole length of the houses, which gives them a peculiar appearance. The general aspect of the neighbourhood is cleaner, and less squalid than the other regions of the "East," and the inhabitants are also better clad and neater in their appearance. The weavers are mostly of French descent, their forefathers having been driven to London by religious persecution about 150 years since, and it is curious to note how much they have to the present day preserved the national style, and peculiarities. There is an immense number of them, and they are mostly remarkable for intelligence. They suffer much privation, struggling to some extent as they do against machinery elsewhere. In Spital-square, which is close to Bishopsgate-street, the master weavers live. Leading from this are streets, black and dilapidated, which are becoming more and more crowded in consequence of the removal of houses by the Eastern Counties Railway Company, who have purchased part of the neighbourhood. In other districts, owners of houses will not permit the looms to be set up. If this should aid in leading some of the weavers to seek other employment it would be fortunate: their present condition is miserable, nor is there any prospect of improvement. Amongst the principal streets thus occupied, are Grey Eagle-street, Black Eagle-street, Pearl-street, Phœnix-street, and Hope-street. Seeking one of the most respectable of the class, who lives out of the web of streets in a cottage with a garden, we found the room comfortably furnished. In a cupboard in the corner, was a collection of old china and glass, which had probably been brought from abroad at the time that persecution drove his ancestors for refuge to this country; and since, even in times of difficulty, carefully preserved. This weaver, whose name was decidedly French, and who, although a very old man, was very intelligent, and cheerful and gentlemanly in his manner, had two daughters, well-dressed young women, of from twenty-three to twenty-five years of age, who assisted their father in working at the loom. The mother had died during the last visitation of cholera, and both the daughters had been ill, one of them dangerously. Many of their neighbours were attacked, and several died. The mother was upwards of sixty years of age at the time of her death, and for forty-five years had been entirely employed in weaving white silk. Year after year they had found it necessary to work more hours, even then receiving a less amount of money than formerly. This had never been a large family, and the parents had been able to rear the daughters in a time of comparative prosperity to present usefulness. In many cases, however, he said, families laboured on in the midst of abject poverty and distress; and yet, notwithstanding privations and temptations, and that these weavers have at times from 20*l.* to 40*l.* worth of property intrusted to their care, a breach of confidence seldom happens. The old weaver above alluded to said, in his youth the weavers generally had a gala day once a week, when some of the most active and vicious would amuse themselves with bull-baiting, dog-fighting, cock-fighting, &c. and others would enter into rivalry with their tulips and pigeons.

The Spitalfield weavers are still fond of flowers, and few houses, even of the poorest, are destitute of a bit of "greenery;" they complain that they have now short time for the healthful recreation of their gardens; still, however, some of them do a little, and many rear pet pigeons and canaries. The Spitalfield weavers are greatly attached to their own neighbourhood, and many old men are known not to have travelled during their long lives farther than King's-cross on one side, and London-bridge on the other. Two old men we met with, had never seen the Euston-square station, nor had either travelled by railway or steamboat; yet they were not destitute of intelligence, and pointed with some pride to the pattern of flowered velvet on their looms. The weavers, like the Northumbrian miners, and other class workers, almost invariably intermarry with each other. Spitalfield weavers' sons have constantly intermarried with Spitalfield weavers' daughters, and thus to the present day have preserved the peculiarities to which we have alluded.

In this district a model building was erected a few years since, by the Metropolitan Association for Improving the Dwellings of the Industrial Classes, and attached to the building is a dormitory and other accommodation for single men. It is to be regretted, that notwithstanding the goodness of the accommodation, the establishment has not been so fully occupied as is desired. Yet, considering the habits of the greater part of this population, the circumstance is not so much to be wondered at. We spoke to several young weavers and other mechanics residing in the district, and found that they all preferred a lodging where they would to a certain extent have some of the social advantages of home. They liked their tea better, they said, if they took it beside some one who would supply the place in conversation of a mother or sister.

Endeavours have been made by two of the City missionaries to give the advantages of education to the children of the weavers and others who are poor, in this neighbourhood. Although the silk weavers are shrewd and intelligent, they had seldom, until solicited, sent their children to school, the reduced wages of the weavers rendering it necessary to use the labour of the children, even when quite young, in "winding quills" (a process needed in silk-weaving), in order to increase the income of the family. Schools without cost to the pupils, but at painful exertion to the missionary, are opened, we understand, early in the morning, at intervals during the day, and evenings, and during Sundays, by which arrangement education is beginning to spread amongst the young, and will no doubt be the means of fitting many for other duties than that of weaving. Nothing is so much wanted for the improvement of the sanitary condition of the poor as knowledge, for they are at present —speaking of the mass—perfectly unconscious of the effects of the bad atmosphere, and other evil conditions in which they and their children exist. The following notes from the conversations of Spitalfield weavers may be interesting.

A weaver, about 30 years of age, was working flowered silk, at 8½d. a yard. *He said he worked from fourteen to sixteen hours a day.* "My earnings from Christmas to Christmas last year were not more than 10s. a week. I am obliged to 'play' when work is slack;—that means, after finishing a 'cane' (an inch of silk, &c.), I have to wait until more is ready; sometimes this is a fortnight, or three weeks, or perhaps more. The slack times cause wages to be reduced. This is not done in a hurry, but by a halfpenny, or even a farthing a time. A man with a family calls at these bad times for work, and is shown some for which something less than his former price is offered: to save his family from the workhouse he agrees. I never in my experience knew the price of work again raised when once reduced. Five years ago I remember very well I could have earned with greater ease and in less time 16s. than I can now 10s." An old woman, the widow of a weaver, whose husband had died a short time since, said she earned 4d. a day by winding satin (working thirteen or fourteen hours a day); her daughter 2s. 6d. a week for working the same long hours. The rent of their room was 1s. 6d. a week. A weaver, his wife, and two grown-up daughters, working at ultramarine and crimson velvet, said they could each complete 1 yard in a day of from thirteen to fourteen hours, for which they were paid 1s. 3d. a yard: this would come to 7s. 6d. a week for each person, but there are many drawbacks. "I have a yard measure there," said the man, pointing to his loom, "exact according to Act of Parliament, but I never take home any work without having a deduction made in consequence of the difference of measure. A web of velvet is worth, when finished, about 10*l.* 10s. in the market; so on our four looms we have forty guineas' worth of property at the least. If it should happen that a web should be lost, either by roguery or accident, the whole of the weavers in the employ of the person to

* See p. 238, *ante*.

whom the lost web belonged would have a sum stopped from each until the amount was entirely made up," which, together with the time spent in waiting for work, would reduce the wages of this family to about 5s. a week each,—1*l.* in all; and in order to live comfortably and have sufficient space for their work, they are obliged to pay as rent not less than 5s. a week, leaving 15s. a week for food and clothing.

In another house a weaver was waiting for work; his wife was weaving black-silk scarfs for gentlemen. This woman was weaving silk which took sixty-four threads to one inch, but she had woven black silk so fine as to require 120 threads to the inch, or 4,320 to each yard, for which she would receive 4½d. or somewhere about 1d. for each 1,000 throws of the shuttle, to which must be added the time lost in picking, entering, and twisting the silk.

We will not close our present paper without repeating our appeal in favour of the outcast children of London, who may be either good citizens or a pestilence, according as they are trained; and we would further say that "now" is the time,—not to-morrow; "now" is ours,—to-morrow may not be. Let us remember that "there is, in the smile of those whom we have served, a something which we may take with us into heaven."

MEASUREMENT OF INACCESSIBLE AREAS.

I HAVE no doubt but you are aware, that many of the papers which I have from time to time contributed to the pages of the *Builder*, have originated in questions proposed to me by private individuals, as being connected with their professions; and in consequence of the great importance of some of the questions to those who proposed them, I have made it a point to arrange the solutions in a form adapted to the pages of your journal, deeming it probable, that subjects which are of importance to one practical man, may likewise be of importance to another; and agreeably to that notion, I have drawn up the solution of the following problem.—T.

PROBLEM.—A gentleman has a piece of marshy ground on his estate, which in rainy weather is frequently covered with water: this ground is in the form of a triangle, of which the boundaries are perfectly straight; but being accessible only on one side, it cannot be practically measured.

Now the proprietor proposes to drain this ground, and has applied to a practical surveyor for the purpose of ascertaining its area; but in its present state, the necessary dimensions cannot be taken: the area or superficial content, must therefore, be determined from the following items or memoranda, viz.:—

The base or accessible side measures 360 yards; the angle at the vertex subtended by the base, 57° 20′, and the angle at the middle of the perpendicular from the vertex on the base, and subtended by the base, is a right angle: from these data, it is required to ascertain the surperficial contents of the meadow or marsh, and for that purpose:—

Let ACB, fig. 1, represent the triangular plot of ground, of which it is required to determine the area; then, the conditions of the problem will be understood from what follows:—

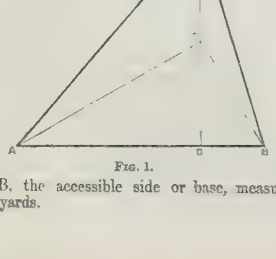


FIG. 1.

AB, the accessible side or base, measures 360 yards.

ACB, the angle at the vertex subtended by the base, 57° 20′.

CD, is the perpendicular drawn from the vertex C, to the base AB.

P, the middle point of the perpendicular, at which there is a spring.

And APB, the angle at the middle of the perpendicular, a right angle.

Now in order to determine the area of the triangle ACB, we must, for the convenience of investigation, assume certain symbols to represent the given and required parts; then by subsequently restoring the numerical values of the several parts, we shall be able to express the area in known terms.

Let A=the area of the triangle, ACB.
b=the base or accessible side of the triangle, AB.
ϕ=the angle at the vertex subtended by the base, ACB.
x=the greater segment of the base made by the perpendicular, AD.
$b-x$=the lesser segment of the base, BD.
And p=the perpendicular from the vertical angle upon the base, CD.

Then, since by the conditions of the problem the triangle APB is right angled at P, the perpendicular PD from P upon the hypothenuse AB, divides the right-angled triangle APB into two other right-angled triangles, ADP and BDP, that are similar to the whole triangle, and to one another; therefore the sides are proportional and we have—

AD : DP :: DP : BD;
That is, x : DP :: DP : $b-x$.

Therefore, by making the product of the mean terms equal to the product of the exterme terms, we have—

$$DP^2 = bx - x^2,$$

And by extracting the square root of both sides of the equation, we get—

$$DP = \sqrt{bx - x^2}$$

But DP, by the conditions of the problem, is one-half of CD; and by the rules of mensuration, the area of a right-lined triangle is equal to the base multiplied by half the perpendicular. Hence it is—

$$A = b\sqrt{bx - x^2} \ldots\ldots\ldots (A).$$

Here we have found an expression for the area of the triangle ABC, but that is not sufficient for resolving the problem, as both sides of the equation are unknown with the exception of the symbol b: it therefore becomes necessary to find another expression for the area involving the vertical angle ϕ, together with the base b, and its segment x; and this expression we are enabled to obtain from the well-known properties, that—

The square of a line is equal to four times the square of its half; and that the area of a triangle *is equal to the product of any two of its sides, multiplied by half the natural sine of the angle contained by those sides.*

Hence the square of the whole perpendicular CD, is $CD^2 = 4bx - 4x^2$; therefore, by the property of the right-angled triangled, we have—

$AC^2 = AD^2 + CD^2$; that is, $AC^2 = 4bx - 4x^2 + x^2 = 4bx - 3x^2$; the square root of which is, $AC = \sqrt{4bx - 3x^2}$.

In the same manner we get an expression for BC, the other side of the triangle, as follows:—

$BC^2 = BD^2 + CD^2$; that is, $BC^2 = 4bx - 4x^2 + (b-x)^2 = b^2 + 2bx - 3x^2$; the square root of which is $BC = \sqrt{b^2 - 2bx - 3x^2}$.

Now, in the triangle ABC, we have found an expression for each of the sides AC and BC; hence, by a property mentioned above, we get as follows:—

$$A = \tfrac{1}{2}\sqrt{4bx - 3x^2} \times \sqrt{b^2 + 2bx - 3x^2} \times \text{nat. sin. } \phi \ldots\ldots\ldots (B).$$

Therefore, by comparing these equations of the area with each other, we have

$$b\sqrt{bx - x^2} = \tfrac{1}{2}\sqrt{4bx - 3x^2} \times \sqrt{b^2 + 2bx - 3x^2} \times \text{nat. sin. } \phi.$$

Hence, by restoring the numerical values of b and sin. ϕ, and reducing the equation, we find the value of x, or the segment of the base AD, to be $x = 273{\cdot}38$ yards, from which the perpendicular CD, and thence the area becomes known. The perpendicular thus determined is 307·76 yards, and the area of the triangle is 55396·8 square yards, or 11·445 acres.

Since one condition of the problem is, that the angle in the middle of the perpendicular is a right angle, that condition leads us to the following elegant geometrical construction, from which we deduce a very simple numerical calculation of the required area.

Geometrical Construction of the Triangle.—Let AB, fig. 2, be the base of the triangle, equal by measurement to 360 yards, and suppose the perpendicular to be at the point B; it will then, according to the conditions of the problem, have no magnitude; for supposing it to move along the base BA from B to A, in a position always parallel to itself, or at right angles to the base AB; then, since the angle at its middle point, P, must always be a right angle subtended by the base AB, it follows that the point P will describe the semicircle APB, because the angle in a semicircle is a right angle.

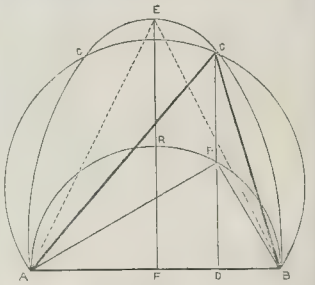


FIG. 2.

But while the point P describes the semicircle APB, the point C describes the semi-ellipsis AEB; that is, the semicircle APB and the semi-ellipsis AEB are locii of the points P and C when the perpendicular moves along the base AB in a position always parallel to itself. It is moreover manifest, that the transverse axis of the ellipsis must be double the conjugate axis, for when the perpendicular has arrived at the point F in the middle of AB, it is clear that EF is equal to AB, for the point P being always in the middle of perpendicular, ER is equal to the radii RF AF and BF, or EF is equal to AB; but EF is the semitransverse axis of the ellipsis, and RF or AF is the semiconjugate, with which let the semi-ellipsis AEB be described in the usual way.

Next, upon the base AB, describe a segment of a circle AGCB, to contain the given vertical angle ACB equal to 57° 20′, and intersecting the ellipsis in G and C; then will either G or C be the point of the vertex: let C be the point, and draw the straight lines AC and BC; then is ACB the triangle required.

Computation of the Area from the above Figure.—It will readily appear from an inspection of the figure, that the least angle that can be contained in the semi-ellipsis is AGECB, and subtended by the base AB, is that at the vertex of the isosceles triangle AEB: consequently, the angle ACB at the vertex of the proposed triangle is greater than AEB; but the perpendicular CD is less than EF, and it is a well-known property in the geometry of the ellipsis, that the ordinates on the conjugate axis decrease as the angles at their summits subtended by the axis on which they fall increase, and the decrease is in the ratio of the cotangents of the angles.

Now, since the semi-axes AF and EF are given, the angle AEF can readily be found, for by plane trigonometry we have the following proportion:—

EF : AF : : rad. : tan. AEF; that is, 360 : 180 : : 1 : 0·5; which being found in the table of natural tangents, gives 26° 33′ 54″ for the angle AEF, which being doubled, gives 53° 7′ 48″ for the minimum angle AEB. Then the perpendicular, CD, is found in the following manner:—

As the cotangent of the computed angle AEB *is to the cotangent of the given angle* ACB, *so is the perpendicular EF to the perpendicular CD.*

Computed angle, 53° 7′ 48″ log. tan. 0·124937
Given angle, 57° 20′ 0″.....log. cot. 9·806971
Given perpen. 360 yards ... log. 2·556303

Required perp. 307·76 yards log. 2·488211

Consequently, the area is 307·76 × 180= 55396·8 square yards, or 11·445 acres, the same as before.

HOUSE-ENTRANCES.

THE entrance to a building, being the most prominent feature in the edifice, should be perfectly characteristic. As very little can be established to convince the spectator, or impress upon his senses the nature of the structure before him, unless the designer enters into the spirit of his subject, and deduces all his delineations from rational reflection; so have we the mortification to witness still the same outlines, projections, and grotesques, as disfigured the unclassified architecture of the past century. Perhaps, in their ideas, a change from existing forms may turn out unsatisfactorily; and so it may, unless the architect hold up the mirror to truth.

With the exception of those given by Vignola, there have scarcely ever been any positive proportions laid down for the openings of doors; and so we have them of all sizes, and the vacuities dissimilar even in mansions of the same extent. He, by various measurements and deductions from the works of Vitruvius, says, that doors with semicircular heads of the Tuscan order, should be twice the height of the aperture; those of the Doric, $2\frac{1}{2}$; the Ionic, $2\frac{1}{4}$; the Corinthian, $2\frac{1}{7}$; and the Composite, $2\frac{1}{4}$. And again, that the apertures of doors with platbands are to be divided into 12 parts, of which 23 parts are to be taken for the height of the Tuscan, $2\frac{1}{4}$ for the Doric, 25 for the Ionic, 26 for the Corinthian, and $25\frac{1}{2}$ for the Composite.

Not only have the proportions been overlooked, but varieties have also been introduced, —the columnar projecting porch, and that sunk within the main building. A mere ornamental relief of trellis-work is sometimes carried round the wall, either to conceal the door or depreciate the general aspect of the house. But it must be admitted that such non-architectural embellishments, detached from the original design, are incompatible with taste, destroy the harmony necessary to elegance, and change the façade into a patchwork. All that is required to render a mansion pleasing and comfortable should be introduced at first, and not be made accessory, or mere points of after-thought.

There is a great difference between the porch of an Elizabethan house, and the prostyle encumbrance usually placed before Italian elevations. The former is a truthful portion of the design, similar in outline to the remainder of the building, and perfectly consonant with the style. Its roof-finish, jambs, and arch, are in unison with the taste which dictated the principal proportions. On the other hand, a Prostyle Doric, or Ionic vestibule has nothing often, in the main building, to be connected with: though joined to, it stands, on account of its peculiarity, detached from the dwelling; and it renders the entire front impoverished, for the want of something similar in the other details to meet this preponderance.

Evidently, a great improvement is taking place in the construction of dwelling-houses, which is refreshing to an eye long resting on monotonous and tasteless erections; and this improvement will progress gradually, as truth is developed by art. But we shall still continue stationary as long as architects,—instead of elaborating a well-conceived subject by personal talent, and working it through with mental energy, depending on previous study and experience,—pull several works from a bookcase, and select therefrom, without reference to order, meaning, building, or purport, any description of windows or doors to be detailed upon their designs. Should the features seem pleasing, they are adopted; no questions being tacitly asked,—"Is this proportional—in accordance —even suitable?" Nor even is any respect paid to the character of the edifice from which this art-plagiarism is made—it may be from a chapel, hall, or sessions-room, to a theatre, railway-station, or mercantile office.

It is customary, in dwelling-house fronts, to make a distinction between the heads of the windows and that of the door, a point showing extraordinary taste, and even condemned by persons who do not pretend to architectural criticism. Where the windows are segmental, we find the door semicircular or elliptical. It is at variance with the generally acknowledged opinionon the beautiful in construction,—"multitude in unity," which requires all openings on the same level, at least, to have similar heads. But the most anomalous step taken in house fronts is the introduction of a glass frame, or pseudo-fanlight above, even where light can be plentifully admitted otherwise. This is one of the errors so prejudicial to the ample appearance which a principal entrance-door should present, rendering it contracted and niggardly. The door should open to the soffit, and if properly hung it would prove as little inconvenient as that of a smaller size, whilst the improvement in appearance would be seen at a glance. In first-class mansions there is sufficient space always for the introduction of side-lights, if there be no staircase window facing the hall. The best portal reliefs were lost, and all the ornamentation of arch and jambs useless, if the opening itself show a beggarly or inhospitable appearance.

When a space is left in the principal front for an entrance, and no projection is required, perhaps the hints contained in my former article, respecting windows, may suffice. Were there not space enough for side-lights to the vestibule, the upper panels of the door may be, as it is now sometimes done, filled with strong glass, rendering the fanlight unnecessary. Should the hall be wide enough to allow room for lateral lights, we should fill up the space similar to the other openings in the façade, in point of outline, and provide for glass where suitable. Instead of solid stone reveals, moulded stone jambs, rebated for the door and glass frames, should be erected, two at each side. These should be surmounted at the proper door height, with moulded springers, rebated also for the windows; and the door-head may be panelled stone, put together in two segments, keyed heavily to form a support for the floor-string. The lateral lights should reach almost to the pavement, the frame resting on stone sills about nine inches deep. The door may be rendered more massive in appearance than it usually seems, by introducing seven or eight inch stiles, and deeper middle rails; and then two panels would be sufficient, the upper one of which, turned on the centre of the segmental stone soffit, may be filled with strong plate glass. And thus the uniformity of the elevation may be preserved.

If the porch of an Elizabethan house be legitimate, and it is required to have a projection in front of Italian-designed houses, why not refer to the system adopted by our ancestors, and build the same suitably? The entrance introduced into English mansions seems a portion of the building, admirably in unison with the whole. When placing a porch before one of our modern dwellings, were the same view taken of the subject, the feature instead of being an excrescence would be an ornament. The cornice, or crowning entablature should not differ from that on the house, except in its proportion as to the height. The doorway and the windows at each side should also have reveals and heads similar to the front in view. And as the roof is almost concealed, it may be a neat segmental dome of iron and glass, resting on a circular cornice within, wrought out from the walls by light and well-turned pendentive arches; and these could be finished with angular trusses, or pilasters carried down to moulded plinths on the landing; all of which may be formed in cement, as internal work. Moreover, a projecting vestibule of this description ought to be on a much larger scale in good-sized dwellings than those usually introduced at the present day.

Notwithstanding all the talent that may be expended on a house-entrance, it will not look well unless the stereobate be well proportioned. Our narrow, lofty steps and limited landings are no improvement whatsoever to an external appearance. The treads should be wider, the steps lower, and the resting-space ample, before we reach the entrance; and, although the entire ascent may not exceed thirty inches, by proper study, it may be made to represent ease and repose much better than it does by three risers, fixed as if the builder were in a hurry.

Great stress has been laid by ancient and mediæval architects on the entrances of edifices. We cannot examine any of their remains without feeling convinced that their adaptation of vestibules and porches was the result of much study; else, how could we now feel satisfied as to their fitness and proportion? Though study should be past when practice commences; our progressive art requires continuous application—principally to ancient models—to render that progression faithful. The necessity of such reference cannot be denied, because, in many designs which seem trifling at first, deep imagery of mind and silent application are required to produce grandeur and solidity. And so it results, that even in the porches of dwelling-houses, much talent may be usefully expended, and the issue will be happy; for the eye cannot rest on a more beautiful feature than an elegant entrance to a well-finished mansion.

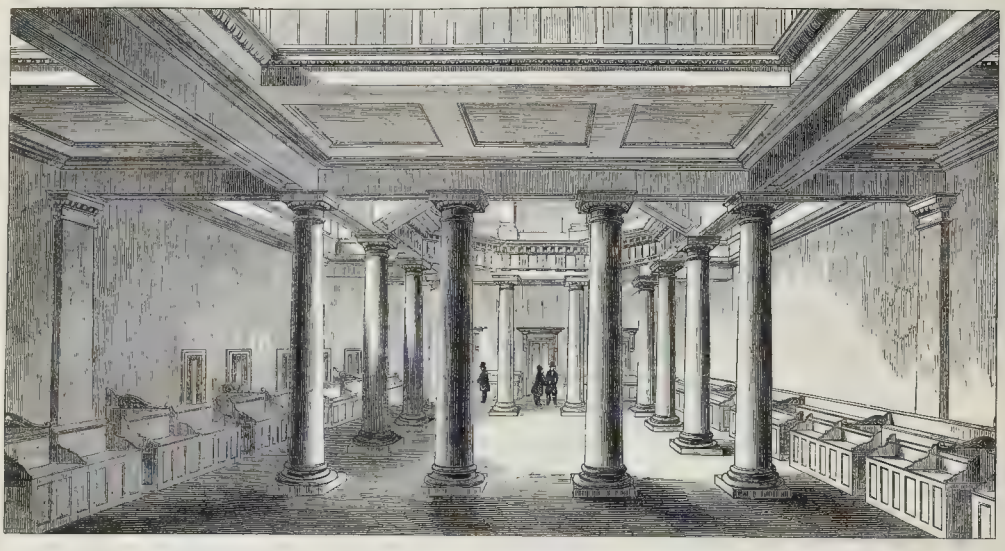
FRANCIS SULLIVAN.

DISFIGURATION OF THE ROYAL EXCHANGE.

A FEW days since, having occasion to go into the City, we passed by this building, and as we have before said, we again regretted the "protrusion" of the shops of the north and east fronts up to the line of the pilasters. The evil we supposed, however, was consummated, and that the general expression of public opinion on the subject had spared the north front from a similar "innovation." To our dismay, however, we observed that this is not the case, for in the recessed shop on the east side of the north entrance, we saw that the elaborate mouldings of the granite pedestals had been ruthlessly hewn away, preparatory to bringing forward that shop front so as to fill up the recess. In the corresponding space westward, we saw a little timid and shamefaced hoarding, in which a man was hewing away at similar beautiful granite work, doubtless with a similar object. All this appears to us to be "too bad." We have "Royal Exchange standard bottles" on the south side, with their saw-dust and vans and interruption of the foot-path, and we have all the irregularities of the shop-fronts of several heights and arrangements, "some in and some out;" but the north front we did hope might have been spared as the architect left it. It is a composition which has been much esteemed for its massive simplicity, and the recesses formed by the three centre compartments are essential to its composition. This general effect can also, on this front be seen to some advantage down Bartholomew-lane, where the building is not so hemmed in as the other façades; but we suppose the *auri sacra fames* is the god to which all must be sacrificed, and the "shopocracy" of the Exchange *must* assert their supremacy. A correspondent asks, if there be no power in England that can call the "Gresham trust" to account? "They first, as in the case of the Excise-office, 'sell their birthright for a mess of pottage,' and now try to retrieve their ruined fortunes by interferences with one of the few national edifices the City can boast of."

PATENT GLASS ENAMEL ON IRON.—A mode of enamelling has been patented by Messrs. Selby, Johns, and Co. of Birmingham. It is in various colours, and is said to be uninfluenced by heat and impervious to acids.

HUDDERSFIELD MECHANICS' INSTITUTE.—On Wednesday in last week the Huddersfield Mechanics' Institution held its annual *soirée* in the Philosophical Hall. The festival passed off with great *éclât*. The orchestra and saloon, says the *Leeds Intelligencer*, were completely filled by about 900 ladies and gentlemen,—of whom the fair sex were decidedly in the majority; and in the gallery at the end of the hall were accommodated 300 members of the institution, principally youths and artizans. The chair was taken by Earl Fitzwilliam, with whom was Viscount Goderich, M.P. for the borough, and Sir John William Ramsden, Bart. M.P. for Taunton, all of whom addressed the meeting. The number of members in connection with this institution, who have paid during the last three months, is as follows:—Fortnightly members, 635; annual subscribers, 120; presented, 77; honorary members, 24; total, 856.



INTERIOR OF THE LONDON CORN EXCHANGE, MARK-LANE.

THE LONDON CORN EXCHANGE.

OUR view represents the addition made to the London Corn Exchange, in Mark-lane, under the direction of Mr. Legg.

The design was prepared to accord with the old portion of the Exchange. The addition has been erected at a cost of about 5,000*l.* and is constructed with Doric columns, forming an octagon, supporting a circular glazed dome about 30 feet in diameter, surmounted by a lanthorn. Counting-houses for the stand-holders have been added.

The columns are of Portland stone; the architrave and cornice, with dressings of attic windows, in Aubigny stone. The dome is constructed with wrought-iron and deal-framed ribs, and the caissons are glazed with enamelled and ornamental plate-glass, with papier-maché enrichments, and finished internally in Keen's cement, and the lanthorn fitted with ventilating louvres. The old black stands have been removed, and mahogany stands substituted. The old columns have been cleared from the paint of a century, and a wainscot enclosure is formed to the lobby, fitted with swing doors.

The building was contracted for by Messrs. Piper, and the fittings by Mr. Myers.

EARL DE GREY'S ENTERTAINMENT TO THE INSTITUTE OF ARCHITECTS.

LORD DE GREY received the members of the Royal Institute of British Architects at his residence in St. James's-square, on Wednesday evening last, and invited, as usual, a crowd of distinguished individuals to meet them. Paintings, albums, and other works of art filled the tables, and the assembly included a large number of the more intellectual of the fairer part of creation, with a charming bevy of the budding beauties of the season. We have no list of the guests, but will turn court chronicler for the occasion, so far as memory at the moment will serve, and say we noticed amongst them Lord and Lady Mahon, Lady Morley, Lord Northampton, Lady Palmerston, Baron Parke, Lord and Lady and Miss Radstock, Lord and Lady Canning, Lady Aylesbury, Lord and Lady Bruce, Lord and Lady Cowper, Lord Granville, Lord and Lady Clanwilliam, the Ladies Cadogan, Lady Charlotte Denison and Miss Denison, Lady Dalmenie, Lord and Lady Goderich, Lady Augusta Seymour, Colonel Jebb, Mr. Caldwell Lewis, Messrs. Donaldson, Salvin, Ruskin, Ferrey, Rev. R. Burgess, Messrs. Mocatta, Scoles, C. C. Nelson, Hussey, Bunning, Godwin, Mylne, T. Wyatt, Jennings, Habershon, Bury, E. M. Ward, R.A. C. Landseer, R.A. Copley Fielding, H. Warren, Woodthorpe, Carpenter, John Britton, D. Wyatt, Hardwick, R.A. Uwins, R.A. Brockedon, Hickson, S. C. Hall, Grieve, Westmacott, R.A. Dr. Spurgin, Messrs. Bell, Sabine, Dr. Reid, Messrs. G. Mair, Thomson, J. Martin, Wood, Telbin, T. Wright, Sir C. L. Eastlake, the Hon. F. Byng, Sir Gardiner Wilkinson, Messrs. H. Roberts, Baring Wall, Dr. Sharpey, Sir John Burgoyne, Sir W. Newton, Messrs. Parris, Phillips, Severn, Collingwood Smith, Sir W. Ross, R.A. and many others.

THE WAGES MOVEMENT.

ONE very general circumstance in the present movement, as we have already pointed out, is an indiscriminate demand of a certain advance—6d. a day in many cases—for all sorts of workmen, good and bad, raw and experienced,—and this, too, in all sorts of trades, with wages in themselves widely varying, one trade from another, as well as one workman from another. Now a circumstance such as this manifests much more clearly and forcibly the anxiety of the working classes to better their position at all hazards—of which we do not complain—than their reasonableness, consistency, or consideration,—of the want of which we *do complain on behalf of the better order of workmen of every class.* The diligent workman is surely entitled to more than the idle, the skilful to more than the stupid, the experienced to more than the inexperienced. The interests of the superior workmen are overridden by those of the inferior in this extensive movement; and this not alone in the important circumstance to which we have alluded, but in other respects. This, in fact, too, is the case irrespective altogether of any previous recognition, in the shape of higher wages already possessed by the superior workmen; for it is clear that 6d. a day is a far greater proportion of 3s. 6d. or 4s. a day than it is of 6s. 6d. or 7s. which skilled workmen in many trades obtain, and to which they are well entitled,—better entitled, indeed, by far, than many in the same business are to half the wages. If an indifferent or a comparatively worthless workman be really entitled to this 6d. or 1s. a day of increase, for which there is so universal a demand, to how much *more* is the more skilled and more valuable workman entitled? In short, it is clear that the interests of the better class of workmen are merged in those of the worse; for if the masters are compelled to give to the latter as much as they give to the former, they are in truth virtually compelled to pay the latter wages justly due to the former, and are thus disabled from giving the good workman his due, in order to benefit the bad. And this is not the case in respect to wages alone. The demand for a uniform increase of wages has been frequently accompanied by a simultaneous demand for a uniform decrease of labour, which in itself is just equivalent to a redoubled demand for increase in wages, with the same injustice on the part of the less profitable class of workmen towards the more profitable.

Considerations such as these, we suspect, will lead to some new development and extensive adoption of piece-work between masters and men. To this it is pretty clear that the most repugnant will be the worst workmen, who will thus, by in the meantime overruling the better order of their fellows, ultimately work out, not exactly their own redemption, but their own improvement as artisans, as well as the liberation of their superior fellow-workmen from that slavery in which they still are virtually enthralled by them. Where wages really depend upon *work*, there work will be *done*, and finally, if certain difficulties can be overcome, much good may thus be effected; but it will be effected greatly against the grain with those who are now the main, and most active and urgent, agents in forcing it on. That will be a bright day, however, in which every workman will earn *his due*, and in which the idle or useless amongst workmen themselves will cease to live virtually on the labour of their more useful and diligent fellow-workmen.

That the indiscriminate demands made in the present movement are already generating and fermenting such ideas as these in the minds of the masters, we have reason to believe. The general tenor of a number of letters we have of late received clearly indicates this fact; and while not wishing it to be understood that we commit ourselves to any opinions expressed on the subject, we may, nevertheless, show the general tenor and drift of these ideas by a quotation or two. Thus "One who has been a journeyman Carpenter" and has "worked as such in London for nearly twenty years with all sorts of fellow-workmen, and for all sorts of masters,

at day-work and piece-work, in large jobs and small," but who has for the last seven years been a master builder, writes us:—

The *abilities* or *value* of men, are "*wide as the poles asunder.*" There are men who are not worth 2s. 6d. a day; nay more, men who are *absolutely worthless*, whose services, *gratis*, would be a *loss*; who would destroy the material they used and so spoil the jobs. There are men who are worth from 5s. to 7s. 6d. and even 8s. 9s. or 10s. per day. Now, Sir, must it not be *egregiously absurd*, to jumble all these together at 5s. per day? In a large firm the master may do very well, perhaps, by this "for better and for worse system;" but the injustice to a good workman is great: it *robs him of his fair value*, and places the "poorest hand" on an equality with the skilful and efficient workman. The result is, he is discouraged, and he very frequently drowns his mortification in a pot-house. But the usual reply to this argument is, that the best workman meets his reward in being retained while the bad one is discharged. In some cases this is correct; but in the *majority of cases* it is not so. I have worked at large shops where a foreman "*reigns supreme:*" this dignitary has "*lodgings to let*," *daughters to marry*, *keeps a shop*, or a public-house, or some grand interest to serve, *at the expense of his employer*. Those who are his customers will be *retained*, while a good man, who will not patronize such proceedings, will be dismissed. '*I speak what I do know, and testify what I have seen.*'"

We shall now, as heretofore, record the progress of the movement so far as relates to the building trades, since our last notes were written.

The London carpenters and joiners having sent a circular to their employers, respectfully memorializing them for an advance of sixpence a day on the present rate of wages, an aggregate meeting of fifty of the largest building firms in London was held on the 24th at the Freemasons' Tavern. They were unanimous in a determination *to resist indiscriminate rise of wages*, and after careful deliberation unanimously resolved, "That the demand for labour at the present time does not warrant an advance of wages."

The Northampton carpenters have been offered an advance of 3d. a day, but have refused, and concluded the dispute by forming themselves into a sort of joint-stock company, soliciting employment on their own account. The masters, we understand, are supplying themselves with workmen from other localities.

At Salisbury, indications of a strike for wages among the carpenters, have induced the master builders generally to increase the wages of their men from 1s. to 2s. a week. Owing to a scarcity of hands, the painters, plumbers, and bricklayers participate in the concession of their employers.

The Cardiff Builders and their workmen, says the local *Guardian*, "have, during the last three weeks, suffered the misfortune of a strike. We have been at some pains to ascertain the particulars. About six weeks ago, the carpenters and joiners sent a notice that after 30th April they would require an advance of 3s. a week on the old rates of 20s. and 21s. The builders formed a union, and offered 1s. a week *to those who were worth it*. This offer was peremptorily refused, and the strike was the consequence. A rumour reached the masters that one of their coterie had surreptitiously offered the full advance to the best men from the other shops in the town. This fact caused great excitement and anger; and one of our principal builders, indignant at being so treated, ordered his men to go to work *instantly*, giving the full advance. This brought matters to a crisis, and the builders determined to hold out no longer; and thus terminated the strike. We believe the principal object the builders had in view was to defer the rise of wages, if possible, to enable those who had heavy engagements, contracted when the value of materials and labour was much lower than at present, to get these works off their hands; and the workmen on this occasion acted with less than their usual judgment and generosity by demanding an *immediate* rise without considering the loss they thereby entailed on their unfortunate employers. *We believe this is the opinion of many of the men themselves;* but unfortunately, reasonable counsel was overborne by the 'eloquence' of young fledglings in oratory, and 'delegates,' who live out of the hard earnings of the innocent men whom they mislead."

The master carpenters of Trowbridge have advanced the wages of their men 2s. a week, without any strike.

The Birmingham carpenters and joiners have struck, as threatened, for an advance of 2s. although offered 1s. 6d. with the explanation that present contracts were all made on the basis of present and past wages, so that, even with the offer made, the masters would be seriously crippled in their resources. In respect to the wish of the men that they be all paid alike, Messrs. Branson and Gwyther, on whom the question mainly depended, say, in a letter to their workmen:—"To that part of your resolution we give the most unqualified opposition; the unreasonableness is so apparent that *we cannot imagine that any first-class workmen could have been consulted upon it*, as they must know that many of our men, instead of having their wages advanced, ought, from their want of ability, to have them reduced; in fact, we would rather they left us at once, as we think they are not earning the wages they are now receiving." We are informed, says last week's local *Journal*, that in the course of the week, twenty-three of the smaller firms have agreed to comply with the demands of the men, and that a number of the men employed by four of the larger firms had returned to work, on the rather equivocal condition that they would have what they sought as soon as other employers acceded to it. Beyond doubt, however, the struggle between those masters and men who still hold out is likely to be a protracted one; and, in anticipation of this, many of the younger workmen have already left Birmingham for London, Liverpool, Manchester, and other towns. Other trades, if the result of the present combination be successful, are evidently prepared to pursue the same course.

The joiners and carpenters of Rotherham and Masbro' made a stand for an advance of 2s. a week, and some of the employers having acceded to the demand, work was resumed. The men have determined, it is said, to form a union with the Sheffield lodge.

Strikes at Liverpool still continue. Several working cabinet-makers have been brought before the magistrates for intimidating their fellow workmen.

The joiners of Lancaster who struck for 2s. a week, and a decrease of working hours, have accepted the advance without the decrease of hours, and returned to work.

At Blackburn, most of the master painters have agreed to an advance of wages as demanded, so that the men have remained at work.

The master joiners at Shields, have refused to comply with the demand of their workmen for an advance to 27s. a week, and are clearing out their shops as their contracts are completed. Several of the workmen have found employment in Sunderland.

At Edinburgh, a pretty general movement for the advance of wages has taken place amongst the workmen. The wages of the painters have been already advanced from 18s. to 20s. a week, and the joiners in the same proportion. Other trades are taking measures to effect the same end. It may be stated, also, adds our informant, that a great increase has latterly been taking place in the price of many articles of import, such as wood, on account mainly of the scarcity of shipping; and this circumstance, coupled with the rise in the wages of workmen, must prepare the public for an advance in the price of furniture, painting work, and probably in many articles of daily use.

The movement has reached Aberdeen, where 2s. a week of advance has been sought by the house carpenters and joiners, to commence after the first week in May. The masters took time to consider of the demand.

The regular house-carpenters of Dublin have given notice that on and after 25th April the wages of the trade would be raised from 4s. to 4s. 8d. a day. An advance in the same proportion has taken, or will take, place in the wages of masons, slaters, painters, and other classes of tradesmen.

The journeymen carpenters of Waterford have put forth a temperate appeal to their employers, pointing out the many difficulties under which they have been suffering, and asking 4d. a day in addition to their present rate of wages, which is 3s. 4d. They also state that they cannot work longer than twelve hours – from six in the morning to the same hour in the evening—unless they are paid something extra for the overtime: very reasonable, too.

Fall of a Building near Oxford-Street.—On Saturday in last week an alarming occurrence took place in Wells-street, Oxford-street. A builder had been laying the foundations of premises to extend from Wells-street to opposite the old stage entrance of the Princess's Theatre, in Adam-and-Eve-court. To protect the houses on either side of the opening made, wooden struts were placed across; but all of a sudden one of these supports either fell or snapped asunder by the weight bearing on it, for one of the lengths dropped, and almost instantaneously the side wall opened, when a bedstead and chest of drawers, as if by magic, fell to the ground. The entire side of the building next fell, carrying with it chairs, tables, &c. Seventeen or eighteen persons were for some time in imminent peril, as the centre flight of stairs also fell while most of them were in the house. They ultimately escaped however by means of the Royal Society's fire-escape.

SIGHTS AND SCENERY.

The Haymarket Theatre. — The more special attention we have given, for some years past, to the scenery of our stage and to scene-painters, has aided in obtaining greater attention to these points on the part of some of our contemporaries of the daily and weekly press. They occasionally surprise us, however, by their commendation. It was extraordinary, for example, to find one of our most able dramatic critics, the writer for the *Times*, praising in strong terms the scenery of "Colombe's Birth-day," and the *Literary Gazette* and other excellently-conducted journals, expressing a similar opinion. We made no remark on the scenery when we noticed the play, not desiring to throw cold water on the new manager's well-intentioned efforts, but the piece being now withdrawn, we assert without hesitation, or fear of contradiction, that the scenery, so far from deserving the praise bestowed upon it, was very vulgarly painted, and was unworthy of the piece. An attempt was made in it to represent the mixed style of architecture common at the period of the play, but this was done without knowledge, and the details brought together were those which were never seen in conjunction. We do not make this remark with the slightest intention to annoy, but simply to prevent artist and manager being confirmed in error by unconsidered praise. We do it the more readily at this moment, because we can at the same time commend highly the scene which has been prepared for the new comedy now playing here, called "The Mousetrap." It represents a library, with projecting book-cases, forming retiring closets on each side, and is admirably complete in all its accessories. The piece itself is chiefly remarkable for the part of a Jack-tar turned Quaker, the opposed characteristics of the two characters being most artistically and effectively exhibited by Mr. Buckstone, and the skill with which Mrs. Fitzwilliam, setting Time at defiance, prevents any one from doubting that she is a gipsy girl something under twenty.

Professor Aytoun's Lectures. — Mr. Aytoun completed his course on the 24th, when he treated of the dead modern poets,—Scott, the great painter of action; Wordsworth, the poet of contemplation; Byron, the most brilliant literary phenomenon of our period; the dreamy, melodious Shelley; the exquisite Keats; the philosophic Coleridge; and the universal, and, therefore, unequal Southey. To Byron he did not give so high a position as we should be disposed to assign to him; to Keats, a higher than we should give, notwithstanding our admiration of much of his delicate imagery. In illustration of Shelley, the professor read his charming Stanzas written in Dejection, near Naples,—

> "I see the deep's untrampled floor
> With green and purple seaweeds strewn;
> I see the waves upon the shore,
> Like light dissolved in star-showers, thrown."

While commenting on the prospects of poetry in our day, and pointing out that we had the plentiful results of the last fifty years yet unexhausted, he denied that perfection in steam-engines and tubular bridges tended to make the present age less poetical than others, but lost sight of the result produced on the growing mind by confining it to "useful knowledge," and limiting the cultivation of the imaginative faculties. We felt with him when, in a previous lecture, speaking of the romance of an earlier age, and the absence of it in this, he exclaimed, energetically, "I love not those hard-headed historians, so bent on cultivation that they sedulously root up every hedge and shrub of imagination, and consider the space once occupied by them as so much waste land redeemed." He defended the thesis, Imitation in the fine-arts invariably ends in degeneracy, more conclusively than his assertion, that Excellence in the mode of *expression* is much more important in poetry than the ideas expressed. Although these lectures have not exhibited, as it seems to us, powers of a specially high order, they displayed the professor's cultivated taste and refined appreciation of beauty, and have pleased while they improved. We would gladly have heard from him a more extended course.

The *Zulu Kafirs*, at St. George's Gallery, Hyde-park-corner, are a singularly curious study, whatever may be said of them as a popular

exhibition. Under the auspices of Mr. Mitchell, to whom the public are constantly indebted, we have here eleven men, a woman, and a child, who, aided by scenery painted by Mr. Marshall, represent various important incidents in Zulu Kafir life, such as a quarrel, the charm song, the witch smeller (Kafirs have their quacks as well as we), Zulu marriage, the war-song, and battle. Although some of them are fine specimens of the animal man, they appear to be a despicable race, fit only, according to an old Indian officer, who sat near us, to be shot at and got rid of. Of the paintings, the *Inhabited Tree*, in the Basuta country, showing numerous huts constructed in its branches (lions being numerous below), is the most interesting.

NOTES ON BLASTING ROCK AT ST. HELENA

PERHAPS the following notes and observations on blasting rocks, both on shore and under water, may be interesting, and at the same time useful to some of your practical readers. In 1846 St. Helena was visited by a remarkable convulsion of the sea, very destructive in its effects, and which in the course of a few hours destroyed a vast amount of property, and washed away nearly the whole of the wharf, with its sea-walls and appurtenances. Within a quarter of a mile from the shore the sea was perfectly smooth and calm, while close on the beach the "rollers" were so furious as to overwhelm several slavers lying at anchor, and destroy everything within reach; they rose to a great height, and even washed away Chubb's battery at a considerable elevation above the sea. It was for the purpose of getting stone to repair the damage done by these rollers that blasting became necessary. The wharf is overhung by a vast mountain of volcanic rock, presenting an almost vertical face of nearly 200 feet high. From these rocks the whole of the stone for the sea-wall had to be obtained, and generally they were blasted down from a considerable elevation, often exceeding 100 feet. The entire rock is volcanic, in distinct layers of various kinds of hard lava. The principal mass of the rock consists of a very hard and rough material, made up of vitrified stones, cemented, as it were, together by a hard clinkery material, which has evidently at some remote time been in a state of fusion. There are also large beds or layers of a coarser kind not as firmly cemented together. The best stone is a hard dense lava of very close texture and great specific gravity; it is of more than iron hardness, and required all the tools to be well *steeled*, as common chisels and jumpers produced little or no effect upon it. The object was to obtain stones of great magnitude for the foundations of the sea wall, and others of less size for all the common masonry. The foundations had to be carried up from the bed of the sea, which is hard rock, and constantly exposed to heavy surfs and rollers. The foundation stones, of vast size, were merely rolled into the sea, and allowed to find their own bed. Ton after ton of these titanic blocks was rolled into the sea, till they showed themselves above low-water mark. As they rolled into their places so they remained, and gradually worked themselves into a solid, close-fitting compact mass of masonry, which stood the action of the surf remarkably well, and gradually became as firm as the solid rock itself. From low-water mark the next few courses were clamped together by massive rods of iron, and regularly built up in courses of huge, undressed blocks. The open joints were then filled in with cement and wedges of the hard lava, which made the lower courses quite waterproof. The upper courses were built in of large blocks in the usual way, well clamped together, and laid with island lime, which is of very strong quality, and stands sea-water remarkably well, although the mortar is made with *unwashed sea sand*.

The tools used in blasting were very simple, consisting merely of a few chisels and long heavy "jumpers"—all well steeled. The holes were generally about 1½ inch diameter, and were driven down to varying depths, according to the size and position of the block attached. Simultaneous blasts were used, that is, a run of holes was fired at the same time by a slow match and train. A constant supply of water was necessary while drilling the holes in the hard lava. The holes were not always filled with powder, but often tamped with clay, and under some circumstances it was found expedient to mix the gunpowder with *saw dust*. If the charges were too large, the block was shivered to fragments, which was of course both a waste of time and material; so that to guard against this, tampings with clay and *saw-dust* were resorted to. The most efficacious method was found to be, to *shake* the stone, or at most to *lift it*—and not to blow it bodily out: hence the plan of many holes and small charges was adopted, and with complete success, for by this method very large blocks were obtained, weighing many tons.

In blasting *under water*, tin tubes were inserted into the drilled holes. The tubes were made of the linings of old packing-cases, and when charged, were connected together by a thin lath, and a train of dry powder, fixed by a slow match made of *spun-yarn* steeped in damp powder which was found to answer every purpose. This method was adopted to blow up large rocks, and also for obtaining lime-stone under water, which is of better quality than that obtained in land.

The holes were drilled in the rocks under water by means of long iron jumpers, managed by two men, placed in a derrick-like scaffold, rigged out from the shore. It was never found necessary to use fine meal powder for priming—common ammunition-powder was always made use of from the first.

The men, although unused to this kind of work, soon fell upon the readiest methods, and were in general pretty sure in their operations, and worked for twelve months without any accident, though often blasting on narrow ledges upwards of 100 feet high. Drilling the holes under these circumstances was a very tedious operation, as they had to be supported by ropes slung round the waist. Notwithstanding all difficulties of blasting and heavy surfs, the works were completed within the estimate—the amount being defrayed by a Parliamentary grant for the purpose.

JOSEPH LOCKWOOD.

THE GLASS TRADE AND THE EDINBURGH GLAZIERS.

WE resume our abstracts of the series of articles on the "Condition of the Working Classes of Edinburgh and Leith," published in the *Edinburgh News*.

The glaziers rank side by side with the plumbers in respect to antiquity and history. There is scarcely anything to be said respecting the history of the trade in Edinburgh. The art of glassmaking reached Scotland during the reign of James VI. The first manufactory was a very rude establishment at Wemyss, in Fife. Subsequently there were larger works erected at Leith and Prestonpans; but these no longer exist, except in bottle-glass manufacture. The glaziers' business seems gradually to have increased in local importance up to the beginning of the eighteenth century; when it was joined to the incorporation of wrights and masons by an Act of Council in 1703. At present there are, including apprentices, only about forty-five workmen glaziers in Edinburgh and Leith. The wages average from 18s. to 20s. a week; and they have constant employment throughout the year. Like all other tradesmen, they have greatly improved in their character within the last thirty years. About the period of the building mania the glaziers, who at that time formed a much larger body, were very dissipated. The present number of workmen, though so small compared with other trades, would appear to be equal to the demand. Besides these, however, there are others who work in painters', plumbers', slaters', or joiners' shops; and there is a numerous wandering or itinerant class in connection with the trade.

In course of their business it is remarkable how few accidents occur to the glaziers; but they are more frequent and fatal among glazing painters and other tradesmen who practise the art.

The glaziers supply their own tools: the chief, most indispensable, and most expensive of these is their diamond. The art of cutting glass with the diamond was probably known in the East at a remote period, but it is certain that it was not known in Europe during the middle ages. The glaziers of old cut glass with a pair of shears under water. They also used for this purpose a piece of red-hot charcoal—singularly enough, the identical material of the beautifully crystallised gem which they now use. But carbon in another and less indurated form than that of the diamond will cut glass. Some of the facets on the minute crystals of a piece of railway coke will answer the same purpose. A couple of expert glaziers will, with ease, finish 1,000 feet of ordinary glazing in the course of a week. Many wrights are glaziers, most of the painters in Edinburgh, and, until very recently, the greater number of the plumbers; but it is not to be expected that these tradesmen can work glass with the facility and skill of a glazier. To prove this, we need only refer to some of the earlier plate-glass windows in Edinburgh, which cracked of themselves in the most mysterious manner, but which was entirely owing to their unskilful glazing. No provision was made for the expansion of the glass, which, though slight, is irresistible; nor the giving way of the surrounding materials, which is also sure to occur. No tradesman knows these things like a glazier. In some enormous plate glass windows, especially where the sashes are of metal, it is their practice to insert thin slips of wood between the lateral edges of the plate and the rebates of the sash bar for this very reason.

The art of constructing leaden sashes also constitutes a portion of the business. Several years' experience in the trade is necessary to constitute an efficient and expert glazier. The skilful cutter is a gainer, the unskilful a grievous loser. With proper care, a slab seventeen inches across the centre of the semicircle may be made to yield two panes fifteen inches by twelve, or two panes sixteen inches by ten, or again, two panes seventeen inches by ten. Crown glass cuts best in a warm temperature. When it happens to be hard, it is occasionally heated before it is cut. A bad diamond, or the unskilful use of a good diamond, is often the cause of breakage.

On the different kinds of glass now so extensively used by the modern glaziers, there are some remarks from which we may extract a few particulars.

Plate glass, from its importance, first claims attention. Since the prodigious impulse the manufacture received from the abolition of the duty on glass, this beautiful article has risen to an importance and magnitude in the fictile manufactures of the country that is scarcely credible to those unacquainted with its rise and progress. One manufacturing establishment in Lancashire alone employs upwards of a thousand people, pays upwards of a thousand pounds of wages every week, besides employing a large and valuable plant of machinery, and consuming an enormous quantity of material. There are at least eight establishments of equal extent in the country, to say nothing of the smaller and more numerous manufactories.

Rough plate in the trade is simply plate glass in its rough state as it emerges from the metallic table upon which it is cast. On the one side—the side next the table—the surface is rough and unequal; on the other it is smooth, though somewhat irregular from the unequal contraction of the glass. From its not being polished, rough plate is semi-opaque.

Rolled plate is produced much in the same manner. It is composed, however, of an inferior quality of metal, less carefully annealed.

Patent plate is manufactured in a precisely similar manner to that already described. It is cast, ground, and polished like plate glass, and is substituted for that material in a great number of cases.

Sheet glass was originally a German manufacture, and was not introduced into this country until about the year 1835. It possesses some advantages over crown glass, to which it bears a great resemblance. It has none of that wavy appearance we see so often in crown glass; and a larger square can be obtained from it when the sheet is formed. It has now become a manufacture of great importance, and is very useful in cases where a straight and large-sized glass is requisite. It is not, however, so suitable for fine work, nor for glazing dwellings.

Crown glass, or common window glass, is the

material *par excellence* of the glazier. It is now exclusively a British manufacture. In the whole compass of the useful arts there is not, perhaps, one that requires on the part of the workman so much judgment, precision, steadiness of nerve, and strength of arm as the art of making crown glass. The manufacture in ordinary eyes looks more like the work of a magician than that of a poor mortal of the Vulcan family.

PROVINCIAL NEWS.

Chelmsford.—The following tenders for pipes have been received by the Local Board of Health :—

STONEWARE SEWER PIPES.

	£	s.	d.
Mr. Stephen Green, Lambeth	3,858	7	3
Messrs. H. Doulton and Co. Lambeth	3,085	6	6
Mr. Thomas Smith, Lambeth, as corrected	2,670	9	8
Mr. D. Montague, Leigh	2,652	1	10

WATER PIPES.

Messrs. Cochrane and Co. Woodside Iron-works, Dudley	2,160	4	4½
Mr. Thomas Stirling Begbie, Mansion-place, London	2,088	14	8
Mr. Richard Barrow, Staveley-works, near Chesterfield	1,930	2	4
Messrs. Laurie and Co. London and Glasgow	1,908	6	2
Mr. Michael Kelly, Bankside, London	1,834	19	6
Messrs. Losh, Wilson, and Bell, Newcastle-upon-Tyne	1,768	8	6

IRON SEWER PIPES ACROSS RIVER.

Messrs. Losh, Wilson, and Bell, not galvanized	99	0	0
Messrs. Cochrane and Co. galvanized	270	9	3
Mr. T. S. Begbie, ditto	247	10	0
Mr. M. Kelly, ditto	222	4	0

Mr. Smith's tender for sewer pipes was accepted, with the usual proviso as to sureties. As to iron water pipes, the tender of Messrs. Losh and Co. was thought the most desirable; but they did not propose to test them at Chelmsford, and it was intended that every one should be tested there by a very high pressure. It was, therefore, agreed that they should be written to, to ascertain if they would undertake to test them at Chelmsford.

Bristol.—It has been found requisite to remove the remains of the church of St. Leonard, at the corner of Clare-street and Nicholas-street, to erect the banking-house of Messrs. Stuckey, and workmen are now obliterating one of the interesting remains of the early city. It will be recollected, says the *Bristol Mirror*, that the church of St. Leonard was removed, to carry into execution the present Clare-street. Originally, persons entering the city (the part encircled by the lanes of St. Leonard's, and the tower), had to pass under archways, somewhat similar to St. John's, although at St. Leonard's the passage was not under a tower. A great similarity exists among the Bristol crypts as to date and architectural forms. Particular mention is made of the church of St. Leonard, in Barret and Seyer.

Exeter.—Arrangements have been completed for commencing a training college for the diocese of Exeter, which, it is expected, will be opened for the reception of students early next year. The foundation stone was laid on Thursday in last week, by Sir John Kennaway, bart. assisted by the Bishop of Exeter and many of the cathedral dignitaries.

Saltash.—According to a Plymouth paper, arrangements for the commencement of the Royal Albert Bridge, at Saltash, are being made, and a large number of men will, as soon as the workshops are completed, and the necessary machinery erected, be set to work. The site was lately visited by Mr. Mare, the contractor, and by his chief engineer, Mr. Campbell. The masonry has been entrusted to Mr. Willcocks, who built the great viaduct at Ivy-bridge and other points on the South Devon Railway. It is reported that Mr. Meredith, the representative of the late Mr. Treffry, of Fowey, has taken the contract for the supply of the granite for the bridge.

Tiverton.—St. Peter's Church restoration is begun. It is calculated that the building will not be opened for divine worship again for nearly two years. We understand that Mr. Gibbs, plumber, of Broadmead, has contracted for new leading the roof.

Ross.—It has been proposed to erect a monument in honour of John Kyrle, the "Man of Ross," in the town-hall here. The only monument to him as yet in existence is the tablet in the parish church chancel, erected by a stranger to the town.

Cheltenham.—The local improvement commissioners are now, under the powers of their Act, advertising for tenders for a loan of 11,000*l.* for the purpose of carrying out the works for the general sewerage of the town.

Droitwich.—Oddingley Church, which has been closed for some months, undergoing extensive repairs (having in some measure been rebuilt), was re-opened on Sunday in last week.

Willenhall.—The chief stone of the new parish church of St. Stephen was laid here on Tuesday in last week, by Mr. W. H. Sparrow, of Penn. It will be built of stone, and will consist of nave, with north and south aisles, chancel with aisles, a vestry on the north side of chancel, and a south porch. At the west end will be a bell-gable, carried by an arch springing from two buttresses. The roof and internal fittings will be of deal, slightly stained and varnished. The style is English Gothic of the early part of fourteenth century. Mr. William D. Griffin, of this town, is the architect, and Messrs. Higham are the builders.

Liverpool.—The proposal for the erection of a new church, or rather cathedral, on the site of St. Peter's, Liverpool, has been negatived by the select vestry.

Rochdale.—On Friday week, an immense new weaving shed of one story in height, belonging to cotton manufacturers, near Rochdale, covering 10,000 square yards of ground, and only partially covered in, was blown down by a gust of wind; and about 2,000*l.* worth of property destroyed. The builders were at work, but all of them escaped alive, though some few sustained rather severe bruises.

Hull.—On Monday in last week the first stone of a hall, intended for the use of the Hull Literary Society and Hull Library, was laid by the Earl of Carlisle, assisted by the Earl of Londesborough. The Freemasons of the district assembled in large force and procession.

Hartlepool.—The contract for the new pier, or breakwater, at Hartlepool, has been obtained by Mr. George Adamson, of Carlton. Five others tendered. The sum required to carry out the undertaking to low-water mark will be about 40,000*l.*

NEW STREETS FOR LONDON.

WITHOUT undervaluing the advantages of the two new streets proposed by the Middlesex magistrate, which, however, I think would be improved by a slight deviation from his lines, there is one line of new street, the construction of which I consider of much greater utility for opening a communication between important parts of the metropolis, and easing the traffic of our present great thoroughfares, for which great facilities now exist, which are not likely long to continue so, and which, as you are well aware, has been often urged on the attention of the authorities, viz. a street from the east end of King's-road, Gray's-inn, past the Sessions-House, Clerkenwell-green, to the west-end of Old-street, thence to a little way down Old-street-road, viz. as far as the new church on the north side that road, and then in a direct line from that church eastward to Church-street, Bethnal-green, at the corner of Church-row, thus opening in conjunction with the line lately made (New Oxford-street), a direct communication from the west-end to Victoria-park, the Eastern Counties railway station, and the county of Essex, and all the eastern side of the kingdom. Most of the property is at present very poor, and the improvement would pay its own expense. It would of course intersect the north end of the new street northward from Farringdon-street on its way to Islington. VIATOR.

WITH reference to a paragraph in your last number, pointing out the necessity for two new streets connecting the Strand and Holborn, permit me to inform you that the plans for one of the new streets suggested by the writer, commencing from a point in the Strand nearly opposite to Essex-street, availing itself of the east side of Lincoln's-inn-fields, and opening into Holborn, nearly opposite to Red Lion-street, were prepared upwards of two years since by Mr. G. Pinchbeck, and that a company is now in course of formation for carrying these plans into execution.

C. BENHAM.

AN OBSERVATORY IN NEW YORK.

IN the neighbourhood of the American Crystal Palace, a number of buildings are being raised, and amongst them is one called the *Latting Observatory*, from the name of its projector. According to American papers, the tower is an octagon, 75 feet in diameter at the base, with an extreme height of 350 feet. It is of timber, well braced with iron, and is anchored at each of the eight angles with about 40 tons of stone and timber. The first story will be a refreshment saloon; the second probably a ladies' ordinary, ice cream saloon, or something of that sort. These stories are inclosed, and are together about 25 feet in height. Above this are three stories of open work, and then an inclosed landing to be fitted up in good style. Here will be the first look-out, 125 feet from the ground. Then come four open stories, above which is the second landing, 225 feet from *terra firma*. Passing three open stories, we reach the third and highest landing, 300 feet from the base. Access to the first and second landings will be by a steam elevator, running up a well-way in the centre about 15 feet in diameter. From the second to the third landing will be a winding stairway. The tower will be a finished spire, with a flag staff, in all 50 feet above the highest landing, thus making the extreme altitude from base to top of pole just 350 feet. The cost will be about 250,000 dollars. The proprietors have ten years' lease of the ground. The idea appears to have been taken from the *Builder*, in which a proposal to convert the London Crystal Palace into a prospect tower, on a much greater scale, was some time since illustrated by engravings.

PARKS, BUILDINGS, AND MONUMENTS, IN PARLIAMENT.

Hyde Park.—In course of last week it was elicited from Sir W. Molesworth, in the Commons, on the part of the Government, that they intended, if the old dilapidated houses which deface Hyde Park from Albert-gate eastward could be got at a reasonable price, to purchase the property and make extensive improvements there. The removal of Knightsbridge Barracks, however, was not under the consideration of the Government.

Rotten-Row.—Mr. Ewart called attention to the state of the ride in the Park, and suggested that some improvements should be carried out: these were promised to be effected before next year. A paragraph on the subject will be found in another part.

Park-Lane.—On Sir J. Shelly calling attention to the propriety of widening Park-lane, which was now a great thoroughfare for railway passengers, Sir W. Molesworth said he thought it desirable, but was of opinion that some subscription for the purpose ought to be entered into by the inhabitants.

Battersea Park.—Mr. W. Williams having stated that he believed it was currently rumoured that a builder had offered to take the ground off the hands of the Government by giving them the amount already expended by them in the purchase, Sir William stated that a proposal had been made, but that it was immediately declined.

Kew Gardens.—On Lord D. Stuart expressing his regret that the grounds of the Botanical Garden at Kew were closed on Sunday, it was announced that, by instructions from Sir W. Molesworth, they had been opened, and would continue for the future to be opened, on Sundays. Lord D. Stuart rejoined that he also wished the "pleasure-grounds" at Kew Gardens, as well as Richmond-park were opened on Sundays.

New Houses of Parliament.—On a vote of 145,774*l.* being agreed to for expenses attending the erection of the New Palace at Westminster, the state of the ventilation of the House of Commons was complained of by Mr.

Spooner, who reminded the House that Mr. Gurney had undertaken, for a few hundred pounds, to ventilate it perfectly. Sir W. Molesworth, however, stated, that if a new system was now introduced, it would entail a very considerable expense; and that the ventilation was now placed for a year under Mr. Wilson, and the experiment ought to have a fair trial. We hear, by the way, that the arbitrators appointed respectively by the Government and by Dr. Reid have, after a long and protracted inquiry, awarded a sum of 3,250*l.* to Dr. Reid.

Nelson's Monument.—Sir De Lacy Evans complained of the incomplete state of the monument to Nelson, in Trafalgar-square, and thought it was not creditable to the patriotism of the country that it should remain in that state. He hoped, now that the Government had taken it in hand, it would be completed without further delay.

The Bronze Statues in the Metropolis.—In reply to questions put by Mr. B. Wall, as to the cleaning and repair of these statues, Sir W. Molesworth said, that the Board of Works were not officially bound either to inspect them or to see them cleared from dust. The bronze statues were not under the control of the Board of Works at all. The repair of the statue and pedestal at Charing-cross he had ascertained would cost about 1,000*l.* and there was no immediate necessity for any repairs to that statue. At the end of a year, however, it might be desirable to ask a vote to the amount of 1,000*l.* for that purpose.

NON-LIABILITY OF A SEWER CONTRACTOR FOR WANT OF NOTICE OF ACTION.

BROMPTON COUNTY COURT.—BROWN *v.* HUMPHREYS AND THURST.

THE plaintiff is a chimney-sweeper, of Chester-mews, Belgrave-square, and the defendants are builders and contractors to the Commissioners of Sewers. The action was for damages, laid at 17*l.* 3*s.* 4*d.* alleged to have arisen from the neglect of the defendants, in making a pipe-sewer. From the evidence of plaintiff and his witnesses it appeared that on the 13th of January last the defendants filled up the sewer in Chester-mews, and repaired the service-pipe they had been compelled to cut, to carry out their work. On the following morning, the plaintiff's cellar, in which were deposited 1,600 bushels of soot, valued at 10*l.* 13*s.* 4*d.* was found to be under water to the depth of 2 feet. The plaintiff at once applied to the Sewers Office, but they took no notice of the damage for several days, when they sent an engine and men to pump out the water: at the same time the plaintiff had men at the same employment, but they could not, however, reduce the water. The defendants then re-opened the sewer, and traced the cause of the inundation to the service-pipe. The plaintiff had lost the use of his cellars up to February 1, and in consequence of having the soot in other parts of his house it ignited, and he was favoured with a visit from the fire brigade,—this inconvenience made up the amount of special damages. Evidence was given to show that it was through the defendants not filling in the earth properly the pipe broke.

Mr. Wontner, for the defendants, said, he had a two-fold defence,—fact and law. He would take it upon law. By the 11th and 12th Vict. cap. 112, clause 127, it was necessary that the plaintiff should give a month's notice in writing to the defendants, as servants to the Commissioners of Sewers, before any action or process of law could be commenced against them. This not being done, the Act says the defendants shall be entitled to a verdict. He should prove the work had been done by order of the Commissioners, and that the defendants, as contractors, were the servants of the Commissioners.

Mr. Roberts, for the plaintiff, in strong terms condemned the defence now set up by the Commissioners of Sewers, as vexatious in the extreme. If the Court admitted the objection, it would only be to have the case brought on again at a heavy loss to his client. Why did not the defendants or the Commissioners meet the case upon its merits and facts.

The Judge (Adolphus) in deciding that the objection was fatal, passed a few comments upon the defence, and called upon Mr. Wontner to adduce evidence to prove defendants' alliance with the Commission of Sewers.

Mr. J. Pollard, produced first the Commissioners' powers, and read from the order-book instructions to defendants to make 170 feet of 12-inch pipe sewer in Chester Mews for 32*l.* 10*s.* The witness stated that the order went first to the surveyor, whose duty it was to carry it out; and the surveyor gave the contractor the order through his Clerk of the Works. Mr. Pollard then put in the engineer's order-book.

Mr. Thurst produced the written order he had received from the surveyor's Clerk of the Works. He stated that he held an appointment under the Commission in writing. Mr. Bevan, the Clerk of the Works, gave orders, superintended, and saw that the sewers were built properly. The Commissioners paid the contractors, and they paid their own men.

Mr. Bevan, Clerk of the Works to the Sewers Commission, deposed to giving orders to make the sewers. He saw the job completed. The Judge said it had been held that it was not absolutely necessary for witnesses like the present to produce their written appointments. He thought this was a case in which the evidence was sufficient to prove that the defendants were servants of the Commissioners of Sewers, and as such entitled to a month's notice of action. He had no alternative but to nonsuit the plaintiff. Nonsuit with costs.

LAND COMPENSATION CASE.—HOLLOWAY.

G. FRASI AND T. CLEMOW *v.* THE NEW RIVER COMPANY.

THIS was a case tried before a jury, at the Sheriffs' Court, Red Lion-square, on the 13th inst. for compensation for certain land in Upper Holloway.

The claimants were proprietors of a field, containing about 5 acres, lying between the Junction-road and Maiden-lane, having a frontage on the former of 110 feet, and 240 on the latter, with a rise of 60 feet between the roads. The site taken by the company, under the powers of an Act of Parliament, obtained last year, occupies the top of the field, at an elevation of about 210 feet above high-water mark (forming a portion of lands required for a reservoir), and contains 1¾ acre, for which the owners made a claim of 26,147*l.* but the sum of 16,175*l.* only was claimed in court. The principal items forming this valuation were in respect of anticipated building ground rents, brick-earth, and damage to lower portion of field. The company's surveyors had estimated this at the sum of 4,025*l.*

Mr. James, Q.C. Mr. Hawkins, and Mr. Lush were for the claimants, and the Attorney-General, Mr. Bovill, and Mr. Field, for the company.

The claimants' case was partly gone into, when an arrangement was effected by their accepting a verdict for 5,000*l.*—4,000*l.* being for the land, and 1,000*l.* for severance, with the option to the company of taking the whole field at 10,000*l.* within a limited period, with certain brickmaking expenses and carcase of a house at a valuation.

THE CRYSTAL PALACE: OUGHT IT TO BE OPENED ON SUNDAYS?

WITH reference to the article by "An Old Boy," relative to the Sunday opening of the Crystal Palace, there is one point which, if I may be allowed a little space, I should like to say a few words upon.

Supposing the British Museum, National Gallery, and similar institutions had been thrown open, and public-houses, &c. shut up, on Sundays, during the past ten years, would the social or religious aspect of the working-classes have been worse than it is in the present day? Is it probable those more fortunate individuals who can afford to become subscribers to the "Surrey or Regent's-park Gardens are made immoral by their attendance on Sundays at these places? Are the bishops, clergy, &c. socially, morally, or spiritually injured while perambulating in their parks, pleasure-grounds, and lawns on Sundays? Certainly not: and he would be a short-sighted person who attempted to say yes to these questions. May we not justly apply the same mode of argument regarding the artizan visiting the Crystal Palace on Sundays? The people have been hitherto driven to the debasing excitements of public-houses, and other worse haunts. The mind oppressed and dispirited, the body weary with prolonged labour in ill-ventilated workshops, the poor man instinctively grasps the latter, because it excites his mind, and re-animates, for a time, the prostrated energies of his body. From these vicious indulgences on Sunday may be attributed that low tone of morality so alarmingly prevalent in our midst.

The Sunday opening question resolves itself into this: which is best, an unmitigated evil (that is, the improper way Sunday is often spent), or a partial good? I say partial, because the advocates of this movement do not (as some foolishly imagine) regard the Crystal Palace as the grand and only remedy for man's social, moral, and physical ills. Neither do they desire Sabbath desecration any more than the strictest Sabbatarian, but go a step farther, and wish to arrest the degradation of man, and the perversion of his faculties, as is enacted every first day of the week throughout the year.

I say, then, open the Crystal Palace grounds on Sundays, and let it be accepted as a partial good, because it will lead men from sensual enjoyments to a contemplation of the "good, true, and beautiful;" thus helping to the development of his moral and intellectual attributes.

ANTI-GLOOM.

REFORM OF EPITAPHS.—BATTERSEA.

AN interest having been excited about eccentric epitaphs, of late, and their improvement, it seems to have led to the belief that such things exist only in country churchyards. In walking past *Battersea* Church a few Sundays since, I observed three in the short avenue leading to the door, all as remarkable for bad grammar and absurd notions as any country specimens. The first, to the wife of Mungo Clark, runs thus:—

"This stone stands here to let the living know,
When I was laid in silence here below;
I suffer'd long, though my mortal sickness was short;
Prepare, for Death did suddenly pierce my heart."

The second, to one George Higgs, about 1807, takes in its last line a very literal view of the debts of life:—

"He lov'd, he dy'd, so much is love prevail'd;
In life belov'd, and al his death bewail'd;
His life and death so good, so great his love,
Can only be prais'd here, and paid above."

The third, to the memory of some infant children, might have been written by the parish baker, who, punished in this world for the shortcomings of bad weights and measures, was contrasting it with a happier country, where that indulgence was allowed:—

"Happy the babes who'r ordain'd by fate
To short labour and light weight,
Receiv'd but yesterday the gift of breath,
Order'd to-morrow to return to death."

F. W. F.

NEW CHURCH OF THE HOLY TRINITY, RUGBY.

IN Rugby and its neighbourhood are springing up several buildings deserving of architectural notice; among which may be named the church which forms the subject of our illustration.

It occupies a commanding site in the outskirts of the town, on the way to the railway-station, and is beginning now to show its decided outline.

The form of the plan is a cross, having nave, four bays in length, chancel, with side chapels, transepts, vestry, organ-gallery over, a central tower and spire, and a north porch. The height of the latter, when complete, is to be upwards of 200 feet. The materials are as follow:—

The outside walling is of Wingerworth stone; the inside, a limestone from the neighbourhood of Newbold and Lawford.

The dressings are all of Bath-stone, with the exception of the tower piers, which are of Ashover.

The fittings will be of deal, stained and varnished.

The church is expected to be consecrated in September, though part of the tower and spire will be incomplete.

It remains to give a few general dimensions, and particulars of the cost. The nave is 62 feet by 24 feet in the clear. The chancel, 36 feet by 24 feet. The transepts 24 feet wide, each. The tower, 29 feet from out to out. The ridges of nave, chancel, and transepts, are level, and 50 feet from the ground line.

The architect is Mr. Scott, of Spring-gardens, London, and the design is being carried out by Mr. Heritage, of Warwick, according to the following estimate:—

	£
Carcase of building, exclusive of spire and fittings	4,281
Fittings, floors, &c. including concrete, &c.	800
Tower above roof	700
Spire	785
Total	£6,566



CHURCH OF THE HOLY TRINITY, RUGBY.—Mr. G. G. SCOTT, Architect.

ST. GABRIEL'S, PIMLICO.

A CHURCH in Warwick-square, Pimlico, dedicated to the Angel Gabriel, was consecrated on the 12th inst.

This church is the third that has been erected in the out-ward of St. George, Hanover-square, within the last ten years, the funds having been raised by subscription. In this case, as in that of St. Michael, the Marquis of Westminster has contributed the sum of 5,000*l.* in addition to the value of the freehold site. The church is built in the Early Decorated style of architecture, of Kentish ragstone, with Caen stone dressings. There is a tower, with spire, 160 feet high, attached to the north-west angle of the church, sufficiently capacious to contain a peal of bells, and a sacristy at the north-east corner of the chancel aisle, with a door from the chancel. The aisles are divided from the nave and chancel by seven bays of Caen stone pillars and arches on each side, carrying a clerestory. There are galleries over the aisles standing free of the stone pillars, it having been found necessary to increase the accommodation by these means for the extensive and increasing neighbourhood. The Rev. Brymer Belcher, late curate of St. Peter's Church, Eaton-square, is the incumbent. The dimensions of the church are as follow:—Length of the nave and aisles, 80 feet; width, 55 feet; length of chancel, 34 feet; width, 23 feet; length of chancel aisles, 13 feet; width, 13 feet; height of the nave to the apex of the timber roof, 60 feet; height of aisles, 24 feet; height of the chancel, 40 feet to the top of the vaulted ceiling. The total accommodation in pews and free seats is for 1,150. The ceiling and east wall of the chancel have been decorated by Mr. Bulmer, of Sheffield. The total cost of the church, including the stone enclosure, iron railing, warming apparatus, and gas-fitting, is 9,360*l.* Architects, Messrs. Cundy. Builder, Mr. John Kelk. Mr. Potter executed the iron work, warming apparatus, and gas standards. The font was executed and presented to the church by Mr. Samuel Cundy.

NATURE AND ART.

THE verdant lawn, the shady grove, variegated landscape, the boundless ocean, and starry firmament, are contemplated with pleasure by every attentive beholder, though the emotions of different spectators differ widely in degree; and to relish with full delight the enchanting scenes of nature, the mind must be uncorrupted by avarice, sensuality, or ambition, elevated in sentiments, and devout in affections.

The fine arts owe their choicest beauties to a taste for the contemplation of nature, and from which source the refined and vivid pleasures of imagination are almost entirely derived. Painting and sculpture are express imitations of visible objects; and where would be the charms of poetry if divested of the imagination. She borrows from rural scenes. The generality of painters, as their skill increases, grow more and more delighted with every view of the animal and vegetable world; but the pleasure resulting from admiration is transient, and to cultivate taste without regard to its influence on the passions and affections, "is to rear a tree for its blossoms, which is capable of yielding the richest and most valuable fruit."

Actuated by this divine inspiration, man finds a fane in every grove, which scenes contribute powerfully to inspire that serenity necessary for the enjoyment of the beauties and harmony that are contemplated; for—

> ——"who can forbear to smile with nature?
> Can the strong passions in the bosom roll,
> While every gale is peace, and every grove
> Is melody?"

The taste for nature's beauties is subservient to higher purposes than those at present referred to, and the cultivation of it not only refines but dignifies and exalts the affection. Scepticism and irreligion are scarcely compatible with the sensibility of heart which arises from a just and lively relish of the wisdom subsisting in the world around us, and emotions of piety must spring up spontaneously in every bosom, in unison with animated nature. Physical and moral beauty likewise bear an intimate relation to each other, and may be considered as different gradations in the scale of excellence: the knowledge of the former should be deemed a step to the nobler and more permanent enjoyments of the latter. G. J. R.

GAS.

WHEN the City Gas Company, as well as others of the metropolitan gas companies, were obliged to reduce their price to 4s. the Company had the kindness and good feeling to make no deduction whatever from the wages of their firemen, although had they been at all inclined, they certainly had a very good pretence for doing so. Notwithstanding so generous a line of treatment, however, their firemen lately struck work for an advance on their rate of wages. The firemen were in receipt of 24s. 6d. a week, with three pints of porter a day, making their pay equivalent to 28s. a week: they demanded 31s. 6d. in addition to the supply of beer: to meet the emergency consequent on the strike of forty men, the lamplighters and others were set to work at 3s. 6d. for ten hours' work, in addition to the pay for their regular employment. The directors refused to employ any of the strikers, but engaged a fresh body of men, accustomed to the work, at the wages heretofore paid. The strike has been considered an ungenerous act by the trade generally. The lamplighters are about to have an addition of 2s. a week.——The Chelmsford Gas Company have reduced the price of their gas from 5s. 10d. to 5s. 5d. a thousand cubic feet. The company lately realized a dividend of 5 per cent. besides a reserve of 250*l.* expended in improvements.——The price of gas is to be lowered at Frome from 6s. 8d. to 5s. per thousand feet.——It is rumoured that Mr. Croll has become the lessee of the Winchester Gas Works, and that he has intimated his intention to guarantee the shareholders 5½ per cent. dividends, and reduce the price to the consumer 6d. per thousand feet—that is, from 7s. to 6s. 6d.: an improvement in quantity and quality is also looked for.——The price of gas has been reduced at Devizes, from 6s. 8d. to 5s.——The Shepton Mallet Gas and Coke Company originally charged 12s. 6d. and, "notwithstanding this high price, or rather in consequence of it," as a cotemporary rightly remarks, the consumption was so small that the Company accumulated a debt of near 800*l.* Eight years since the management was changed, and while the dividend has been maintained, and the debt paid off, the price has been reduced to 6s. Owing to the increased demand, extensive additions are about to be made to the Company's works, under the direction of a Bristol engineer.——A Gas Company for Quorndon and Mountsorrel, according to the *Leicester Advertiser*, is in course of formation.——The Dukinfield Gas Works are progressing satisfactorily, and are expected to be completed within the time fixed by the engineer, Mr. George Emmot, of Oldham.——It has been announced that from the 1st of July next, the price of the gas supplied by the Whitehaven Gas-Light Company will be 2s. per thousand cubic feet.——A Gas Company is being formed at Dufftown, in the north of Scotland.——A dentist in Washington (U.S.) has taken out a patent for generating gas from wood. The inventor has entered into a contract with a company in Wilmington, North Carolina, to light up that town with it. Pine wood, with which that country abounds, is preferred to any other, and the gas generated from it costs, it is said, comparatively nothing. It is estimated that every house in Norfolk, and all the public lamps can be lighted for a sum not exceeding one dollar a night. The apparatus for generating this gas is described as extremely cheap and simple.

Notices of Books.

The Lake Scenery of England. Painted by Mr. J. B. PYNE. Lithographed by Mr. W. GAUCI. Manchester: Agnew and Sons. 1853. Part I.

SOME of our readers will remember a notice in our pages of twenty-five pictures of the scenery of the lakes, painted by Mr. Pyne for Messrs. Agnew, and will recognise in the work mentioned above the commencement of their publication.

Mr. Pyne, without sacrificing truth, has treated his subjects with poetic intelligence. "A landscape, like the human face, is not always the same. A sudden gleam of sunshine or intelligence may invest the one or the other with a character of which it might scarcely have been thought susceptible until then. It is the province of genius to watch for such changes, and to select those which are most worthy of being perpetuated; to paint nature in her fairest phase: when truth is so brightened and adorned as to appear almost in the guise of poetry."

We need not now speak of the beauty of the country illustrated, or of the associations which belong to it. Some of the most deservedly eminent of our modern poets have made it their adopted home. The genius of a Wordsworth, a Southey, a Coleridge, a Wilson, and a Hemans, was either nursed or tranquillised amid its solitudes; and they have all repaid their obligations to it with a princely prodigality. Inspired by its influence, they have left the halo of their fame around its 'pleasant places,'—they have added glory to its sunshine, and greenness to its verdure.

The present part contains Dungeon Gill Forge, Skiddaw, Emmerdale Lake, Windermere Waterhead, and Rydal Water. The lithographer, Mr. Guaci, has succeeded best, to our liking, in portions of Emmerdale Lake, and Windermere Waterhead; but we shall look for some better work on his part in subsequent issues, and have no doubt we shall find it. The commission to Mr. Pyne was carried out so successfully, that Messrs. Agnew have been induced to enter into an arrangement with the artist for a series of thirty pictures of the Rhine, Switzerland and Italy, upon which he is now engaged.

The Patentee's Manual: being a Treatise on the Law and Practice of Letters Patent. By Messrs. James and J. H. JOHNSON. London: Longman and Co. 1853.

IF activity in the publishing department be any criterion of the impetus which the new law has given to invention, there is nothing to complain of, unless it be the force of that impetus itself. Once a month, at least, some new work on Patents comes before the public,—almost all of them, apparently, worthy of notice; and we can only hope that all will meet with it. Certainly there is as much need now as ever for those prudential rules and precautions gleaned from costly experience, with which the present work is filled, as well as with the legal and business instruction, as to forms, &c. necessary to every intending patentee.

The Law and Practice of Elections of Local Boards of Health under the Public Health Act, 1848; and Supplemental Acts. By JAMES J. SCOTT, of the Middle Temple, Barrister-at-Law. London: Charles Knight. 1853

THE purpose of this small volume is to give plain and detailed directions to those who may either be personally and actively engaged in conducting elections of Local Boards of Health under the Public Health Act, or who may be interested in watching, if not sharing in the proceedings connected with such elections. It is accompanied by decisions on cases which have arisen under the Act, together with those portions of the several Acts which relate to elections of Local Boards of Health, and will be found useful. Into the merits of the rules, &c. connected with these Local Boards, it is not necessary for us under present circumstances to enter. The result does not in all cases seem satisfactory.

Miscellanea.

IRON ROOFS FOR RAILWAY STATIONS.—Mr. R. H. Bow, C.E. at the Royal Scottish Society of Arts, has illustrated by diagrams his designs for iron roofs of great span—the results of calculation made with a view to compare these with the best forms at present in use. He insisted on the propriety of employing roofs of great clear span for principal stations, and deduced the triangular frame (in which the rafters constitute the main compressed member of the fabric) as preferable to all arched, compound, or other forms, when an inclined surface is demanded by the covering, of the character required for slating.

SPEED WITH SAFETY.—A correspondent of the *National Intelligencer* announces the invention of a form of road and locomotive, which he says will safely transport the mails and passengers at the rate of one hundred miles an hour. The writer says he has been made acquainted with the details, which, he adds, "every civil engineer and railroad man will, on examination, at once recognise and admit as the desideratum, even to the extent of safety and speed above indicated."

Improved Cottages for Rural Labourers.—A large and important meeting of landed proprietors and tenant farmers connected with the western district of Wigtownshire, in Scotland, was held at Stranraer on 29th ult. for the purpose of organising a society for improving the dwellings of agricultural labourers in the district, Lord Dalrymple in the chair. The subject was brought forward by Sir Andrew Agnew, Bart. who frankly confessed he had hitherto neglected his duty in this respect, as they all had. Agricultural improvement had advanced of late years in an unprecedented manner: none of them would think of putting up a feeding byre without the necessary drainage: everywhere good farm steadings were rising up: the stable for the cart-horse would not be built without proper ventilation; and yet the poor labourers, whose hands had toiled in carrying out all these improvements, were lodged in cabins destitute of the necessary arrangements for comfort and decency, with damp earthen floors below the level of the ground outside, without an attempt at drainage, with no proper fireplaces, and no ventilation. A great deal could be done at a very small expense. A drain dug round a cottage, and a tile floor, would make many a wretched hovel habitable and dry. Ventilation was a most important thing. A grate or a little oven was a great comfort; and above all, divisions were absolutely necessary for decency as well as comfort. In seconding Sir Andrew Agnew's resolution, Mr. M'Culloch, of Auchness, said he knew from experience that a little money expended in this way was a good investment, as the labourers being reluctant to leave a comfortable home endeavoured, by faithful service, to secure their employer's good opinion; and as the best class of farm servants was yearly becoming scarcer, it was the interest of the owners, by being enabled to offer comfortable homes, to induce good hands to remain with them. If this view, self-interested though it might be, were more generally recognised, it would give a permanent impulse to the improvement of our cottages. The Society was formed, a president, vice-presidents, and committee chosen, including the principal landlords of the district; and at the conclusion of the meeting a large number of those present enrolled themselves as members.

Growth of Public Libraries and Museums.—A parliamentary return has just been printed, at the instance of Mr. Ewart, to show what has really been effected by the two Acts passed in 1845 and 1850, to encourage the establishment of museums and libraries. This document affords the following, amongst various other and similar particulars:—In Liverpool there have been established, since 1845, a botanic garden, herbarium, museum, and public library. The library, open without restriction to the public, now contains about 12,000 volumes, and there is besides a small library of botanical works, connected with the gardens and herbarium. At Bath, a free public library, museum, and gallery of art, are in course of formation. At Dover, a museum has been built by means of a rate, which produces about 177*l.* a year. The annual cost of maintenance is only about 55*l.* Manchester has established noble libraries, both for circulation and reference. The former contains, at present, 5,832, and the latter, 16,619 volumes. The Winchester Museum, originally established by subscription, was brought under the Acts in 1851. The inhabitants have taxed themselves to the amount of 91*l.* a year, and have subscribed, in addition, between 60*l.* and 70*l.* a year. There is a small library of reference attached to the museum. At Oxford, no rate has been levied, and no subscription made, and the report says:—"The prospect of establishing a public library and reading-room in the city of Oxford is not encouraging." Cambridge keeps her sister in countenance: no library or museum has been formed.

Monument to Shakspeare.—A few weeks since an article appeared in your estimable publication, headed "Where is Shakspeare's Monument?" And the remarks of your correspondent were strongly indicative of that apathetic and pounds shillings-and-pence spirit of the British people, in not raising a fitting monument in the metropolis. It is not to be expected that the expense of such a memorial should be borne by a few individuals, however great their admiration of the poet might be, and where two-thirds of the great body of the people are his ardent admirers, and thousands daily profit by his works, surely it is not impossible to raise funds sufficient for such a purpose. There cannot be a doubt that her Majesty and his Royal Highness Prince Albert would head a subscription, and grant a site for its erection. Nor would the nobility be backward in the great work. All the theatres in the United Kingdom would end their aid; and authors, managers, actors, and actresses give their services gratis for the occasion. The architects and sculptors of the age should be requested to furnish designs, which should be exhibited in Drury-lane Theatre, the public paying for admission.—J. E. R.

The Iron Trade.—It is now believed that the next quarterly meetings cannot pass over without another acknowledged reduction in price. Indeed, as admitted by the *Birmingham Journal*, "some very gloomy rumours are afloat as to the position and prospects of the iron trade." The mischief done by the late speculations is now very generally admitted. These speculations consisted not so much in the purchase of iron ready made and bought at a certain price as in contracts for iron not then made, and in fact not made yet; and, as remarked, if the makers who took these contracts insist upon their fulfilment and the delivery of the iron, then an immense amount of pig-iron will be thrown upon the market, which must affect it to a considerable extent. But even though the makers can be induced to abandon the contracts, the excessive make in Wales, Scotland, South Staffordshire, Shropshire, and Worcestershire, has created a complete glut. The make in Wales during the last twelve months is said to have amounted to about 700,000 tons; Scotland, 600,000; and South Staffordshire and Worcestershire, 600,000. These, with the make in Shropshire and other places, in the aggregate, will produce between 2,000,000 and 3,000,000 pigs during the last year; and as such quantities cannot be worked off by the mills and forges, the result is, that the prices of pigs is going steadily downwards already, without the access of the anticipated fulfilment of speculative contracts. The *Times* reports from Birmingham "a depressed and uncertain state of the iron trade pending the complete adjustment of the recent mischievous speculations." As for the prices nominally current, pigs in course of the present month at Glasgow have been falling from 51s. 3d. to 50s. to 49s. 3d. and to 49s. Manufactured iron displays a less marked tendency as yet to sink rapidly from the rates ruling at the commencement of the quarter, but, as already observed, a further decided fall is anticipated by next quarterly meetings, though some insist that the fall then will not exceed 10s. a ton.

Ferry across the Thames.—Sir: Reading of a proposed ferry across the Thames, from Charlton to Blackwall, which was laid before the Lords Commissioners of the Admiralty, and was objected to on account of the piers being likely to become a hindrance to the shipping, and an obstruction to the tide, I send you the following suggestion. My proposal is as follows:—A dock to be formed on both sides of the river; the docks to be of the same depth as the middle of the river; the bed of the river between the two docks, to be made level with the bottom of the docks; and then a roadway to be laid down from the farther extremity of each dock, on a dead level across the bed of the river. Then a framework is to be formed and fixed on wheels, to support a roadway, or platform, of a certain length; the wheels, the open framework, and the roadway, when all fixed together, to be so constructed, that the roadway or top of the bridge would be exactly level with the wharfs when in the docks. So that vehicles of any description would only have to run off the wharfs on to the roadway, without rising or falling at high or low water. I would then have a watertight compartment under the roadway in the framework, to contain a steam-engine, which could be made to cause two or more of the wheels of the platform to revolve, and then the whole platform would commence its course across the river. The platform of course would be of dimensions varying according to the situation or traffic: it could be long enough to take a railway train across, or could be made on a small scale for general traffic. Whatever size the platform or bridge is made, the dock ought to be just large enough to admit of it coming into the dock, and filling it up, so that it would only be to draw any vehicle on it the same as from one part of a wharf to another.—C. Eades.

Architectural and Archæological Societies.—The Oxford, Beds, Bucks, and Warwickshire Architectural and Archæological Societies, announced in the *Banbury Guardian* last week, that they were to hold meetings in Banbury this week, when papers would be read, and excursions made, &c. The following were the papers promised:—"On Compton Wynyates," by Rev. Lord Alwyne Compton; "On Church Arrangement with reference to Church Music," by Sir H. E. L. Dryden, Bart. "On Druidical Remains," by the Rev. H. J. Williams. "On the Roman and Saxon Occupation of Britain," by the Rev. J. Taddy. "On MSS. in Bedfordshire relating to Milton, Barrow, and others," by the Rev. H. J. Rose.

Zinc Paint.—A few months ago, I had the outside of a house fresh painted with two coats of lead paint and a finishing coat of zinc paint: it is now in many parts covered with red spots like rust, and in parts, too, not exposed to the weather. I should like to know if any other persons who have used the zinc paint have experienced the same thing, and whether it can be attributed to the combination of the lead with the zinc paint.—An Architect.

Testimonial to Mr. H. Roberts, Architect.—The services of Mr. Henry Roberts, F.S.A., who, since the establishment of the Society for improving the condition of the Labouring Classes, in 1844, has filled the office of honorary architect, and under whose advice and direction the several important establishments opened by the Society throughout the metropolis have been erected, were on Wednesday in last week acknowledged by the presentation of a service of plate, at the Freemason's Tavern, where a few noblemen and gentlemen, members of the committee, entertained Mr. Roberts at dinner. The Earl of Shaftesbury was in the chair; and among the other gentlemen present were Viscount Ebrington, Lord Haddo, Lord Moreton, Major Little, Mr. J. Egerton Hubbard, Mr. W. Long, Mr. J. Bridges, Mr. W. Gregson, Mr. R. B. Seeley, Mr. R. B. White, Mr. J. Jackson, &c. The plate consists of a centre-piece, with dinner-set and tea-service, and chased salver, bearing an appropriate inscription.

The Metropolis Roads.—On Friday in last week the Commissioners of the Metropolis Turnpike Roads north of the Thames held a public meeting, to let by auction the tolls within their jurisdiction for one year from 1st July next. The tolls were divided into ten lots, of which only two lots were sold, namely, the Uxbridge and upper division of the Tyburn roads, and the Hackney and Lea-bridge roads. The former were offered at 9,500*l.* and bought by Mr. Levi, for 9,900*l.* The latter were knocked down to Mr. Bolton, for 5,700*l.* the sum asked being 5,310*l.* which they were let at for the previous year.

The Excavations at Fountains Abbey.—Of the progress of these interesting excavations we have occasionally taken note. Earl de Grey has, during the past winter, and up to the first of this month, employed a great number of workmen on the unexplored ground east of the chapter-house and between that building and the south wall of the choir. The space south and east of the Lady Chapel, too, has been cleared for a considerable distance. The discoveries made are considered important and curious. The passage leading from the abbot's house to the south door of the Lady Chapel is now cleared to its original level. On its east side has been a large doorway, leading into an open court. On its west side is the base of a building of the Perpendicular period, having a doorway from the said passage, and one leading into the court on the south side of the choir. In one corner is a circular staircase, lined with bricks, once leading to the main apartment above—for this base story, which is a few feet below the regular level, was merely the undercroft of the principal apartments above. From the south-east corner buttress of the Lady Chapel to the north-west corner of the abbot's hall has run a wall, dividing a spacious court south of the Lady Chapel from the open cemetry, which has been on the east side. An interesting part of the discovery is that of eight coffin slabs, of different ages and designs, all laid in various positions in this cemetery, within 26 feet of the east wall of the Lady Chapel.

Hyde-park Improvements. — Widening of Rotten-row.—The Woods and Forests have commenced widening Rotten-row, from the stone culvert opposite Albert-gate to the Kensington end of the ride, in some places to double its pristine width. In doing this, they have trespassed rather freely upon that portion of the park which belongs to the walkers. There is one important consideration in the improvement, which, it is to be hoped, will not escape the attention of the Royal Ranger and the Woods and Forests,—the providing some better security and facility to pedestrians crossing the row, than have hitherto existed. Unless some scheme is devised, it will not only be dangerous, but impossible to get across.

TENDERS

For the erection of a Corn Exchange, at Louth, Lincolnshire. Quantities not supplied. Mr. P. Bellamy, architect.

	Part stone, and Cement front.	Whole front in Caen stone.
Young, Lincoln	£2,494	£2,724
Lundie, Grimsby	2,424	2,891
Abbot, Alford	2,523	2,623
Kirk, Lincoln	2,060	2,280
Clark, Louth	1,950	2,185
Dales, Louth	1,797	2,147
Levitt, Louth (accepted)	1,919	2,110

The above is exclusive of the old buildings and plate-glass for roofs, which are valued at about 550*l.*

For rebuilding warehouse for Mr. T. B. Armfield, in Crown-court, Cheapside. Mr. J. Belcher, architect.

Brass	£1,497	0	0
Sanders and Woolcott	1,472	0	0
W. Lawrence and Sons	1,420	0	0
Brown	1,367	0	0
Wilson	1,356	0	0

For Rectory at Thorne Coffin, Somersetshire, for Rev. Philip Rufford. Mr. G. Truefitt, architect.

Chick and Son, Bedminster	£1,025	0	0
Clarke, Bruton	978	0	0
Davis, Langport	925	0	0
Rowland and Evans, London	910	0	0

For building Congregational Church at Battle-bridge. J. Hodge, architect.

Lucas	£4,616	0	0
Myers	4,309	0	0
Sanders and Woolcott	4,195	0	0
Haynes and Eyre	4,145	0	0
Pollock and McLennan	3,994	0	0
Hopkins and Roberts	3,919	0	0
Rowland and Evans	3,629	0	0

For the erection of the New Town-hall and Police station, uth, Lincolnshire. Quantities not furnished. Mr. erson Bellamy, architect, Lincoln.

Ward, Lincoln	£7,910	0	0
Wass, Hull	7,460	0	0
Margison, Hull	7,448	0	0
Clark, Louth	6,583	0	0
Levitt, Louth	6,575	0	0
Dales, Louth (accepted)	5,927	0	0

TO CORRESPONDENTS.

Induration of Stone" (in reply to our inquirer under this d, a correspondent directs attention to the works for the indu- on of soft stone established at Tunbridge Wells, which have n in operation for some time), "Onward," "A. H. W." (the ilt would be more than hazardous), "A Retired Physician," R. W." (the Commissioners of Sewers have power to assess perty for the sewers rate under Act of 11 & 12 Vict. c. 112, con- ued by subsequent Acts), "A Subscriber," "C. and Co." "P. P." T. E." "E. B." "P. B." (it is only fair to charge on average : when above 1,000*l.* it is not usually done), "*Rene Cherbonneau*," in Purbeck" (we would not use the compo at all, but point stonework. If used, it may as well be done at once), W. M" "A Reader" (Mr. Thos. Cubitt was the builder), udens" (the section r ferred to in notice of Panopticon was engraved. The window given has no connection with it), pt. H." "G. W." "W. H." "*Vesta*," "G. R. F." "C. C. N." G." "H. B." "C. W." "Constant Reader."

"*Books and Addresses.*"—We have not time to point out books or addresses.

OTICE.—All communications respecting *advertisements* should ddressed to the "Publisher," and not to the "Editor:" all r communications should be addressed to the EDITOR, and *not* ne Publisher.

ADVERTISEMENTS.

TO ARCHITECTS, SURVEYORS, &c.

HE Commissioners for the Improvement of the Town of Scarborough are prepared to receive Applica- s for the Office of SURVEYOR and CLERK to the COM- SIONERS, now vacant by the death of Mr. John Irvin. The missioners will require their Surveyor to be fully competent ake Levels, draw Plans and Specifications, and measure off nage and other works ordered by the Commissioners, to be n Accountant, and to write a good hand. Salary 165*l.* per m, the entire time of the Surveyor being at the disposal of Commissioners. Testimonials as to character, accompanied pecimens of the Applicant's ability in Drawing Plans, &c. be sent in to me on or before the 3rd day of JUNE next, and ier particulars as to the duties required may be known on ication at this Office any day between the hours of TWELVE ONE at noon.—N.B. Security will be required from the suc- ful candidate for the due performance of his duties.

By Order, EDWARD FAIRBANK, Clerk pro. tem. ommissioners' Office, St. Nicholas-street, Scarborough May 24th, 1853.

EW TOWN-HALL, LOUTH, LINCOLNSHIRE.—To JOURNEYMEN CARPENTERS. ANTED immediately, several steady, good, and experienced kmen. None need apply who have not a sufficient quantity of Also Wanted, a Carpenters' Labourer.—Apply on the ks, or to Messrs J. and B. DALES, Builders. N.B. A first- Cabinet-maker and Upholsterer also Wanted. uth. May 25th, 1853.

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REPERTOIRE of MEDIÆVAL ART, 52, Wigmore-street, Cavendish-square.—Mr. BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Metal work, chalice and patens, offertory, basons, candlesticks, censers, brandreths, gas fittings, crosses, lamps, monuments, brasses, inscriptions, tablets, frames, sconces, lecterns, velvets, rich pictures, albs and stuffs, for altar hangings, &c. woven silk, lace, embroidery in gold and silk, gold and silver lamps, painted candles, pictures, frames, trucks, banners, &c. &c. Church walls, Reals, size of 14 in. 2 ft. 7 in. wide, 6 ft. 7 in. high, ditto 14 in. 2 ft. 6½ in. by 6 ft. 5½ in. Price of 14 in. 7s. 6d. each; ditto 14 in. 6s. 6d.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the floor-boards generally used is sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the favours of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present month:—

3-inch yellow or white, 13s. to 14s. 6d. per square.
1-inch ditto, 16s. 6d. to 18s.

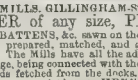
Battens 9s.; Deals, 8s. 6d.; and pluck, from 4s. 6d. per 12 feet; timber, from 72s. 6d. per load; and every kind of English and foreign wood direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW DEAL FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slab, Slab, Tiles, &c. on Sale at the lowest remunerative prices. Good-handed and carted Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

Per square.		Per square.
3 inch yellow	3 inch white	14s. 6d.
2½ "	16 0	2½ " 15 6
2 "	16 6	2 " 16 6

2½ per cent. discount for amounts exceeding fifty pounds.
ARCHIBUTT and ATKINSON, St. Pancras saw-mills, Cambridge-street, Old St. Pancras-road.

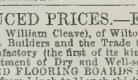


SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS and BATTENS, &c. sawn on the most approved principle Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge.

Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing



TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE at E. FULLER'S Depôt, Wharf-road, City-road. Spanish and Honduras Mahogany, Walnut, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand at his Manufactory (the first of its kind ever established), a very large Assortment of Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber, deals, &c. cut and uncut, to any extent at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDING, having manufactured by themselves, they offer it at the lowest remunerating profit. Buyers of timber, &c. from the company will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to the NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, framework, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices affixed, may be had on application, or shall be forwarded on receipt of any postage stamps (the amount of the postage thereon).

A VERY SUPERIOR DEAL SAW-FRAME and ENGINES FOR SALE.—To be seen at the premises of Messrs. Hodgkinson and Bennett, Bankside, Southwark. Deal Saw Frame, fitted up in the best possible manner, with all the newest improvements. Also, ten-horse and six horse engines,—of every description of machinery manufactured for, and manufactured by, their materials and workmanship.—Orders promptly attended to. WILLIAM DORWARD, Manager, Atlas Company, Engineers, Emerson street, Bankside, Southwark.

DURRAND'S "BONDED and SUFFERANCE WHARF," TIMBER-PRESERVING WORKS, ROTHERHITHE. BETHELL'S process consists in preparing timber with creosote, or oil of tar, and is particularly applicable to Railway Sleepers, Fencing, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges. And also for use in the colonies, as being perfect impervious to the attacks of all land and marine animals.—PAYNE'S, Sir BURNETT'S, and MARGARY'S processes, in addition to the preservative properties, are likewise non-combustible and consequently, adopted in her Majesty's Dock-yards, as a preventive of fire in Ship Building; and are also extensively used in House, Farm, and general Building.

Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are consequently, equally applicable for Colonial and Foreign Trade.

Scale of charges and every particular of P. ST QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 3 Charlotte-row, Mansion-house, City.

PADDINGTON SAWING, PLANING and MOULDING MILLS, 3, Iron-gate Wharf, Praed-street, Edgware-road, near Great Western Railway Station, and having on the Grand Junction and Regent's Canals, affording advantage of railway and water carriage.

W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING-BOARDS, MATCH-BOARDING and MOULDINGS of every description prepared in superior manner, from the best goods.

W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive machinery of which affords convenience to purchasers for immediate conversion of their goods, on the most moderate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded post-free, on application.

N.B.—Sawing and planing for the trade.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1853, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in dump situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of this cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 21, King-street, Liverpool.

6, South Wharf, Paddington.

PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by H. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Monai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 200 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.

Agent for Southampton, R. L. FLUDER, American Wharf.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf Paddington.

TO CONTRACTORS AND OTHERS.

WILLIAM PETERS (late Poynder and Medlicott), 7, North Wharf, Paddington, and Wouldham Hall, Grey Stone Lime-works, on the Medway, near Rochester, begs to inform all large consumers of Grey Stone Lime, he can supply them upon the most advantageous terms, in quantities of not less than 50 or 100 cubic yards, per barge, alongside any wharf in London or elsewhere.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

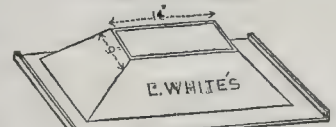
As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 256 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 22, Steel-yard, Upper Thames street. A liberal allowance to wholesale dealers.

IMPORTANT TO BUILDERS.



REGISTERED CAST-IRON CHIMNEY-HOPPER and CHIMNEY-BAR COMBINED, ensuring a perfect formation of the Flue, and rendering smoky chimneys impossible. One trial will cause their adoption in every building.

Price from 8s. 6d. each, according to size.

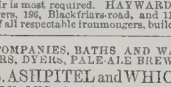
CAST-IRON KITCHEN SINKS, with overflow-pipe, 8s. 6d. each.

IRON PIPES and connections for gas, water, and liquid manure.

RAIN-WATER PIPE and EAVE GUTTERS, at wholesale prices. Also, O-G Gutters, Sash-weights, STABLE FITTINGS, pumps, corn-bruising, cattle and pig troughs, and COLUMNS with caps and bases, and every kind of builders' castings, in stock, at LYNCH WHITE'S Iron Wharf, Upper Ground-street, London, near Blackfriars-bridge.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the admission of pure air through an



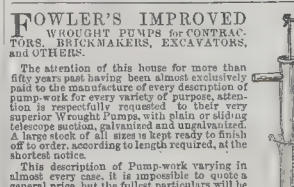
EXTERNAL WALL.

With single pulley, from 6s. each; with leading pulley, from 6s. 6d.

These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which times a constant supply of fresh air is most required. HAYWARD, BROTHERS, sole Manufacturers, 195, Blackfriars-road, and 117, Union-street, Borough: and of all respectable ironmongers, builders, &c.

TO WATER COMPANIES, BATHS AND WASHHOUSES, BREWERS, DYERS, PALE-ALE BREWERS, &c.

MESSRS. ASHPITEL and WHICHCORD'S PATENT VALVE, adapted for high-pressure or inequality of temperature. The greater the pressure the more perfect the valve.—Manufactured and sold by THOMAS POTTER, 44, South-Molton-street, London.



JOHN WARNER and SONS, CRESCENT, JEWIN STREET, LONDON,

Galvanized Iron Tub Garden Engine, with Warner's Registered Spreader. Is strongly recommended for durability and low price, viz. 3l. 3s.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

FOWLER'S IMPROVED WROUGHT PUMPS for CONTRACTORS, BRICKMAKERS, EXCAVATORS, and OTHERS.



The attention of this house for more than fifty years past having been almost exclusively paid to the manufacture of every description of pump-work for every variety of purpose, attention is respectfully requested to their very superior Wrought Pumps, with plain or sliding telescope suction, galvanized and ungalvanized. A large stock of all sizes kept ready to finish off to order, according to length required, at the shortest notice.

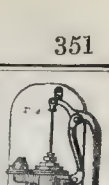
This description of Pump-work varying in almost every case, it is impossible to quote a general price, but the fullest particulars will be given on application.

A large stock of Wrought Pumps, from 3-inch single to double 15-inch barrel, is also kept on hire prepared for hand or steam power, on reasonable terms, at

BENJAMIN FOWLER'S ENGINE-PUMP MANUFACTORY, Whitefriars-street, Fleet-street, London.

TO BUILDERS AND PLUMBERS.

The attention of the Trade is called to JOHN WARNER & SONS' PATENT VIBRATING STANDARD PUMP,



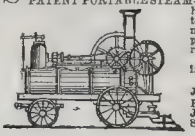
which is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the vibrating standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London, Manufacturers and Pump-makers.

STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS, Engineers and Contractors, John's-place, Holland-street, Southwark, London.

TO LOCAL BOARDS OF HEALTH, ENGINEERS, AND SURVEYORS OF WATERWORKS.

By Royal  Letters Patent.

GRAY'S IMPROVED GALVANISED STEEL or GLASS BALL VALVE FIRE-COCKS or HYDRANTS.

T. W. GRAY begs to inform engineers of waterworks and others, that he has recently taken out a patent for a new description of Hydrant or Fire-cock, with Glass or Steel Balls, combined with India-rubber seatings, and with powerful double screw bottom stand-pipes, both of which he will warrant to stand any amount of water-pressure.

The superiority of the new Patent Hydrant over all others consists in a cheap valve without bruising, marking, or sticking to which all other ball valves are liable, and it offers advantages not hitherto obtained. Boards of health, water companies, and the public have the option, under the new and old patent, of using a steel or glass ball. The glass ball has been under the pumping main of 400 feet pressure for many months, and the reports are perfectly satisfactory, for which testimonials can be given for its durability. The strength and beautiful surface of these balls calls the attention of all engineers interested in water supply. The new patent also claims the cock and box combined, which considerably decreases the expense.

Drawings and particulars may be obtained, or sent free by post, and Fire-cocks or Hydrants supplied in any quantity, on application to T. W. GRAY, at his Offices, 79, King William-street, City, London; or at the Works, 1, Margaret-street, Limehouse.

HAND-IN-HAND INSURANCE OFFICE, 1, New Bridge-street, Blackfriars, London. Established in 1696.

DIRECTORS

The Hon. Wm. Ashley	John Gurney Hoare, esq.
The Hon. Sir Edward Cust	P. Pusey Maitland, esq.
Arthur Eden, esq.	Wm. Scott, esq.
John Lettsom Elliot, esq.	John Sperling, esq.
James Esdaile, esq.	Henry Wilson, esq.
Harvie M. Farquhar, esq.	W. Esdaile Winter, esq.

Life Department.—This office offers a low scale of premiums to non-members without participation in profits, or a member's scale of premiums with an annual participation in the whole of the profits after five full annual payments.

In the years 1849, 1850, 1851, and 1852, the premiums on all members' policies were abated 25 per cent. that is to say, a premium of 100l. was reduced to 47l. 10s.

Insurances effected before the 24th of June next will participate one year earlier than if effected after that date.

Fire Department.—Insurances are effected on every description of property at the usual rates. By order,

RICHARD RAY, Secretary.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

Established 1824.—Empowered by Special Act of Parliament.

ADVANTAGES.

EXTENSION OF LIMITS OF RESIDENCE.—The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira, the Cape, Australia, New Zealand, and in most ports of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit divisible in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual office, with, at the same time, complete freedom from liability—thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of life, one-half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES.—Five Bonuses have been declared; at the last in January, 1852, the sum of 131,125l. was added to the Policies, producing a Bonus varying with the different ages from 24 to 55 per cent. on the Premiums paid during the five years, or from 5l. to 22l. 10s. per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1855, therefore those who effect Policies before the 30th June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than at most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are indisputable except in cases of fraud.

INVALID LIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life from 50l. to 10,000l.

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The accounts and balance-sheets are at all times open to the inspection of the assured, or of persons desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.

99 Great Russell-street, Bloomsbury, London.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind; hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,

12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE,
Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be considered, because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent, (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 50lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames-street. Mr. Richd. Cooke, 7, Basinghall-street.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Douglas.
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

THE VIEILLE MONTAGNE ZINC

MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC

MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations, being completely innocuous and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulterant be mixed with the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the MARK and TRADE-IN Hull, by Messrs. BLUNDELL, SPENCE, and CO; when ground and dry by Messrs. T. B. MORLEY and CO; and by the Company's Grinding Agents in London, Messrs. CHARLES DEVAUX and CO., wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 3, Tottenham-court, New-road, and 80, Upper Thames street, City. In Manchester and Liverpool, by Messrs. LAWTON and CO. of 20, Northleigh-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT.

The PERMANENT WHITE of the Ancients, by its costliness hitherto rendered the first instance, now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, while a hundred weight of Zinc White mixed with even gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in the first instance, as well as desirable on every other consideration. To a contractor for extensive works taken at competition prices this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.

For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.

A circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London (opposite the London Docks).

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.

HEALTHFUL HOMES, with avoidance of

the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom,

Now supply this innoxious substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe.

In 1 lb. 2 lbs. Kegs, and upwards, from the Depôts of their respective Agents:—

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ZINC PAINT is much below the price of White Lead, possesses equal body, a fine surface, and will not be being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent men, of its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Factories, 30, Lombard-street, London.

FRONTS of HOUSES.—BELL'S PATENT

COLOUR is now established beyond question for permanency, beauty, and economy, destroying all greenish vegetation May be applied by any ordinary Workman, and only one-eighth the cost of oil paint. In casks of 1 cwt. and 5 cwt. at 8s. 10s. and 21s. each.

DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 10s.; and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price: only 28. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage. 28s. per cwt. or 4d. per stone.

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MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

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The largest stock in England of Marble in Blocks and Slabs, Veined, Sardilla, Dove, Black, and Black and Gold, Sienna, St. Anne, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Bare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARBLE.—Mr. J. FABBRICOTTI, of

Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

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BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

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PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

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The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Pinners court, Old Broad-street, London, Agent; or to Mr. J. J. THATHAN, Manager of the Works, Liskeard, Cornwall.

Notice of the column exhibited from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue."

By Professor ANSTED.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension the magnitude of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

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List of prices at the quarries and depôts, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

THE PIMLICO SLATE-WORKS.

Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia

Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, for slating floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; sole agent for Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

CHEAP PAVING.—Yorkshire tooled

Paving, at 33s. per 100 feet; also at 40s. and 45s. Sinks, 1s. 8d. per foot. Coping (18in and 18in), Sills, Steps, &c. rubbed and selfaced Paving, Selfaced slab, Harehill slab (in great variety for hearths), Millstones, Troughs, Cantees, Vicountees, and Ladies' stones, clay, and stone drain pipes; plain and footed ties, chimney-pots, &c.—Builders and others are invited to apply for a price-list, which will be sent free on application to F. W. STURGE, Bridge-wharf, City-road, as this will be found the cheapest wharf for stone.

CAEN and AUBIGNY STONE.—

F. POUCARD Stone Merchant and Quarry Proprietor, Quai de Juillet, Caen, and at 3, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

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Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

BOX WEATHER STONE, of best quality,

SCALLETT BLOCK, &c. &c. supplied direct from the Quarries by ROBERT STRONG, Quarry Proprietor and Stone Merchant, Box, Wilts. The great durability of the Box Ground Stone, withstanding the most intense frost, renders it a desirable stone for all external building purposes. Orders to any extent immediately attended to. Depôt, Box Station, Great Western Railway, where an extensive stock is always kept. Every description of Stone Work, both plain and ornamental, prepared ready for fixing. Ashlar, Rangework, Walling Stones, &c. &c. always on sale. Vases in elegant variety, URNS, FOUNTAINS, CHIMNEY PIECES, &c. &c.—Box, Wilts, March 10, 1853.

ANCASTER STONE QUARRIES.—

Mr. JOHN WILSON (late of the firm of Neale and Wilson) begs to acquaint the public he is now the sole proprietor of the above quarries, and will be glad to execute any orders his friends may favour him with.—Offices, Grantham, May 18, 1853.

ARTIFICIAL STONE CHIMNEY-

PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

By her Majesty's Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY

are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without perceptible change in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in cornices, strings, architraves, friezes, copings, fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.

Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.

Specimens may be seen and further particulars obtained at the offices

3, John-street, Adelphi. EDWARD MENDHAM, Sec

The Builder.

SATURDAY, JUNE 4, 1853.

THE Exhibition of Cabinet Work which has been opened at Gore House, Kensington, in pursuance of a determination on the part of the Committee of Privy Council for Trade that a collection of fine specimens of cabinet work would be useful to the students of Schools of Art, and the public generally, should be visited by our readers. It includes a number of beautiful works of industrial art, and a larger number of most costly pieces of manufacture. Their value, indeed, is so great, that the liberality and confidence evinced by their possessors should be praised. One of the best-informed dealers in articles of this character tells us, he should think the collection would sell for nearly half-a-million of money. We should not go so far as this, although we are perfectly well aware of the fabulous prices which may be obtained just now, both on the continent and at home, for remarkable specimens of furniture; but we can vouch for its great value. We may add, that the same authority said he would himself give 5,000*l.* for the cabinet of mahogany and or-molu sent by the Queen, and that the three China vases which stand on the cabinet No. 64 would probably sell for 3,000*l.* These are figures which startle one, and serve to show that the money which a country may spend in improving, and getting a reputation for its productions, is not thrown away.

It must not be supposed that all the specimens exhibited are of good design; many of them are as bad in this respect as it is possible to imagine anything—displaying broken pediments, superabundance of heterogeneous ornaments, heavy cabinets standing on quivers of arrows for legs, and other weaknesses; but each is remarkable in some particulars, and may be usefully studied. We should be glad to see more furniture of an earlier period. It would be interesting to get together some of the ancient chests, trestles, desks, and benches of the 14th century: we find in them a propriety and sense which are less observable in some works of later date.

A carved ebony cabinet in the first room (15) sent by Mr. R. Holford, is a singularly good example of wood-carving in low relief. The walnut-tree cabinet (20) in high relief, is very inferior to it. There are many fine specimens *en marqueterie*; take, for example, the writing-table (25) sent by the Queen. Works in marquetry of very great merit are produced in England at this time. In viewing such works, distinction must, of course, be made between those composed with woods mostly of their natural colours, and those wherein dyed woods are used, which often fade. Great care is needed in the selection of woods likely to retain their colour, and skill and taste are needed in the combination, so as to produce a harmonious effect. It was in Florence and Sienna (where excellence in marble mosaic work was early attained), that marquetry was first used to any extent. In the middle of the 16th century, these works were very popular in Italy. In our own country marquetry has been practised for two centuries, and has a character of its own. The modern name, it will be remembered, was given to it from M. Marquet, who re-introduced its use in comparatively recent times.

The small "Buhl" cabinet sent by Mr. Baring Wall, M.P. is an excellent specimen of inlaying. Buhl has its name, we may mention, from its inventor, Boule, a French cabinet-maker, who introduced this mode of ornamenting furniture at the end of the seventeenth century. In this process, no part of the material is wasted: two or three thin veneers of different woods are fastened together; the patterns are then cut out with a fine saw, and the cavity in one veneer is filled up with the pattern cut out of the other. Brass, with a dark wood or tortoiseshell, were the materials which Boule himself employed, and it is to works in these materials that the term is more particularly applied. The cabinet sent by Lord Granville (31) is a beautiful specimen of this work.

The Duke of Hamilton's *commode*, in buhl and or-molu, is a beautiful work.

The Duke of Northumberland has contributed a noble cabinet of the seventeenth century (38), ornamented with Florentine mosaics and raised decorations, also in *pietra dura*. In design, it is not free from puerilities. It is attributed to Le Pautre, about 1670.

In Florence, the working in marbles, pursued so successfully by the Byzantine artists, was revived early. Fra Mino executed mosaics in Florence in 1225. In the sixteenth century the Grand Dukes of Tuscany founded, and still maintain, a manufactory of this work, from which have proceeded some extraordinary productions. Agates, lapis lazuli, jaspers, giallo antico, on a ground of nero antico, or rosso antico, are the materials chiefly used, and come under the general denomination of *pietre dure*. The patterns to be inlaid are carefully cut out of a slab, with a saw and file, and the hard stones, worked into the proper shapes by the ordinary methods of gem cutting, are accurately fitted into the spaces in a finished and polished state. If the whole face of the work when completed, were polished together, some of the stones, being softer than others, would be worn away too rapidly, and produce inequalities of surface. In Devonshire and in Derbyshire some very beautiful works have been recently produced.

A bronze group for lights (63), including three figures, which stands upon a Buhl cabinet (47), is an admirable piece of work. We look for a great extension of bronze working in England: an impetus has been given to it which will, it is to be hoped, augment. A wide field for artistic industry is here open. The value of bronzes annually made in Paris at this time, cannot be less than a quarter of a million sterling.

As an encouragement to those who are following this branch of art in England, we may mention that Hatfield has just now found a purchaser, at the sum of 300*l.* for his bronze figure, after Mr. Foley's "Youth at the Stream," produced by him for the Great Exhibition.

There are several specimens of furniture, presenting panels of porcelain, the *pâte tendre* of Sèvres, the cabinet (64), for example, sent by her Majesty, which afford useful hints for modern ingenuity to work upon.

The *pâte tendre*, or "old Sèvres," was the result of many experiments made by French manufacturers and chemists at the commencement of the eighteenth century. The workmen who had been engaged in the first manufactory of this china founded an establishment on their own account, from which afterwards, namely, in 1745, the then Minister of Finance purchased the secret of the composition. Louis XV. elevated the works into the Royal Manufactory, and became ultimately sole proprietor of it. The most eminent artists were connected with the establishment, and specimens of such excellence were produced as to obtain for it a world-wide reputation. The composition of earthenware, the opaque coatings, the enamel colours, the vitreous glazings, have occupied the lives of men, have involved the intensest mental labour, little thought of by those who regard simply the results.

Study and analysis of the Oriental china led to the production of the *pâte dure*, or hard porcelain. After much research, proper materials for its composition were discovered in France; its fabrication was introduced at Sèvres, and at the beginning of the present century the manufacture of the *pâte tendre* was abandoned altogether in its favour.

So much has been done in this department in England lately, that we feel assured if there were a sale for works of the highest class, which necessarily cost much money, whether in France or here, we should have no difficulty in producing works rivalling those of the Sèvres manufactory.

The cabinet of mahogany with applied ornaments of or-molu, contributed by the Queen, and already referred to (71), is one of the finest pieces of workmanship ever seen, more particularly in the metal work: the exquisite manner in which the flowers and scrolls are formed cannot be sufficiently admired. When the doors are opened, the drawer handles show the same care and skill. The design is injured by the caryatide figures at the angles, which do not accord with the rest of the ornament, and the puerile conceit shown in the legs.

In our desire to lead our readers who may visit the collection to inquire into the various processes and branches of art which are illustrated by the examples it contains, we have left ourselves little space to speak of the works of the students in the various schools of art in connection with the department, or the series of studies from the life lent by Mr. Mulready. Many of the works of the students are very creditable productions. Amongst those whose efforts deserve praise are Mary Julyan, Florence Collins, Sarah Hipwood, Susan Ashworth, and Eliza Mills, all of the London school: William Hough, of Coventry; Walter Quill, of Paisley; and B. Williams, of Worcester, for a singularly clever painting of fruit.

AN ACCOUNT OF THE MEANS TAKEN TO RAISE A SUNKEN FLOOR OF A WAREHOUSE, AT MILL-LANE, TOOLEY-STREET.

In the year 1849, Alderman Humphrey built a stack of warehouses at the bottom of Mill-lane, Tooley-street, from designs prepared for him by his architects, Messrs. Allen, Snooke, and Stock. That portion of the work which forms the substruction was carried on somewhat irregularly, and was directed in great measure by the Alderman himself. The builders were Messrs. William Cubitt and Company, of Gray's Inn-road. The foundations of the piers and front wall, against the street, were put in entirely under the Alderman's own direction, so that, whatever has taken place from defective construction reflects in no manner either on his architects or his builders. Some time since, we described briefly, after a personal visit, the failure in the foundation here, and the means adopted to raise the floors. On the 16th ult. Mr. I'Anson laid the particulars of the case before the Institute of Architects, and we add a portion of his statement:—

The building consists of seven stories, including the basement. The roof is a queen post roof, of about 60 feet span; the height of the top story, from the floor to the under side of the tie-beam, is 10 feet; the walls are 1½ brick thick in the recesses, and 2 bricks thick in the piers. The upper floor is constructed with wooden girders, having a bearing from centre to centre of the iron posts of 15 feet; the girders are 13 inches square; the joists, 12 inches apart, 12 inches by 3; and the bearing between the girders is 11 feet 6½ inches, or from centre to centre of the posts 12 feet 7½ inches; the girders are supported by iron posts, to which I shall hereafter refer, and their ends rest on stone templates. The height of the story next beneath the topmost floor, from the top of the floor to the under side of the joists above, is 8 feet 10 inches; the walls on this floor are 2 bricks thick in the recesses, and 2½ in the piers. This floor is constructed as a fire-proof floor, with arches

1 brick thick, in cement, springing, with a rise of 12 inches and a span of 12 feet 7 inches, from iron girders, or springers; there is a layer of concrete over these arches, on which the floor surface is formed with asphalte; the abutment of the arches is stiffened by tie bolts running longitudinally through the building, one in the centre of each bay, between the iron story posts. The construction of the floor next but one to the topmost floor is similar to that of the top-most floor; the walls are 2½ bricks thick, and the height of the story, from the top of the floor to the under side of the joists, is 8 feet 9 inches. The floor next but two to the topmost floor is fire-proof, being formed of brick arches built in cement with a thickness of concrete, covered by an asphalte flooring, as already described for the floor next the topmost floor; the walls are 3 bricks thick. The height of this floor, from the surface of the asphalte to the under side of the joists above, is 8 feet 9 inches. The floor next but three to the topmost floor, in ordinary parlance the first floor, is of timber construction, and similar to that of the topmost floor, except that the spaces betwen the joists are filled in with concrete, supported on a layer of slates fixed between the joists by wooden fillets. The height of this floor, from the surface of the floor to the under side of the iron springer, is 8 feet 2 inches, but under the centre of the arch 9 feet 2 inches; the walls are 4 bricks thick in the recesses and 4½ in the piers. The ground floor is paved with slate, bedded on concrete, resting on the arches of the basement story, which arches are 9 inches thick, built in cement, and have a span of about 9 feet 4 inches, and a rise of 13 inches. This floor is 9 feet 10 inches to the under side of the girders, and 10 feet 10 inches to the under side of the joists; the walls of the same thickness as in the floor above. The basement floor is paved with stone, and is 8 feet 10 inches high under the centre of the arch.

The iron posts supporting the floors increase in size from the top of the building downwards; the caps are cast with the posts, and have a spread of 3 feet. The diameter of the upper story posts (or rather the width of the web) is 8 inches, and the metal web is 1 inch thick, and the centre of the post is, I believe, hollow. The diameter of the lower story posts is 11 inches, the metal of the web is 1½ inch thick. The warehouse is thus divided into four horizontal compartments, which are, it is presumed, effectually fire-proof, and the compartment between the ground floor and first floor is further made more secure by the quasi fire-proof construction of concrete laid between the joists,—a principle which Alderman Humphrey has carried out to a much greater extent in some of his other warehouses. The total area of each floor is about 6,656 feet, and the total cubical contents of each fire-proof compartment, including the thickness of the timber floor, is 133,000 cubic feet. The communication between the several fire-proof compartments is at present, and is intended permanently to be, by means of a staircase external to the building, but between the two compartments comprised between the fire-proof arches, it is by the usual internal ladder from floor to floor.

Before its completion the warehouse began to show some evidences of settlement, which, as the loading was applied, greatly increased until the settlement of the story posts reached as much, in some cases, as 10 inches, one of the first symptoms being the crushing of the arches springing from the piers in the basement.

With the exception of the great defect of putting all the floors out of level, the building suffered no further damage than that the several brick arches, and particularly those in the basement floor, were all more or less fractured, and some of the stone templates in the wall were also split.

The simple and efficacious means which have been used to rectify this defect is the subject to which I now call attention. Simple and comparatively easy as the operation may appear, I know of nothing of its kind which has been more successful; and the experiment having been conducted on a scale of some magnitude, and with such satisfactory results, I have thought it might not be devoid of interest.

The warehouse having been relieved of all its contents, except on the upper floor, which was loaded all the time, the first operation was to remove the pavement of the basement, and to shore up the warehouse on that floor. For this purpose four cast-iron girders, each capable of bearing a weight of 150 tons, were inserted through the piers under the springing of the arches, and these were effectually shored up by timber shores. The next step was to sink down to the foundations of the piers. Here the concrete was found defective and soft, but the great error seems to have been in not excavating the ground down to the gravel, and placing the original concrete on it. In restoring the work this was, however, done. The first concrete was removed, and the ground below having been excavated, fresh concrete of Thames ballast and stone lime was put in, resting on the gravel. The thickness of the new concrete was from 5 to 7 feet. The lower parts of the original brick piers, which were built in mortar, were removed, sometimes in one and sometimes in two at a time, the upper parts being carried during the underpinning by the iron girders, and the piers were rebuilt with brickwork in cement. These parts having been made secure, new arches of three half-brick rims were introduced under the original arches, springing from pier to pier, and on which the skewback which carried the floor arches of the ground floor was cut. These arches were considerably crippled, and the springing line now shows by its sagging, as it were, towards the middle of the building, how considerable a settlement has taken place, but it is now only in this part of the building that it can be observed. The floor arches were repaired and made good. The concrete covering was also partially removed, and the whole of the slate paving of the ground floor. The concrete having been made good and brought to a level, the slate pavement was relaid. The foundation having then been perfectly secured, centres were fitted to the two end bays of all the brick arches above the basement, which was shored up, and one course of bricks was removed all along the crown of the arches which were shored; against the side walls of the warehouse the arches were cut through so as to leave them quite free and clear of the walls, and the brick-work round the ends of the iron springers was cut away so as to leave the ends free, and all the bolts securing the caps to the wooden girders were screwed out and left loose. Stout uprights were then placed in the centre between each post, from the basement arch to the underside of the iron springer of the first fireproof floor; and twenty-eight screw-jacks of various forms and power having been procured, were fixed as close as they could be conveniently to the sides of the posts, and other strong uprights were placed above the jacks up to the underside of the girders on the top floor. A man having been placed to look out on every floor, the screwing commenced, by which at every effort the floors were raised from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch.

The raising was thus effected of all the floors above the first floor, and gradually, as they rose, iron wedges were applied under the caps of the first floor, and also over the uprights between the posts. This operation of screwing having been gradually carried on a little at a time, at intervals of a day or so, until the floors were raised as high as was considered safe, the screw-jacks were removed, and upright shores were placed against the posts, which were then left loose, and by the aid of two small jacks they were each got up, and stone and iron bases placed under them and well wedged up. When the whole had been made secure and firm, the brick arches were repaired, and made good. The whole operation of screwing up, including the preparing for it, and making good after it, occupied two months. The jacks were worked two at a time, and there were sometimes ten men to one jack. The whole work has now been most effectually carried out, and there are few traces (except the sunk line of the springing of the basement arches) to indicate the great settlement which took place. The restoration has not, however, been carried out with mathematical precision, and it has been thought necessary to introduce some iron wedges between the iron caps and springers; and to make doubly sure, the wooden girders have had an extra camber given to them, and are blocked up with wooden blocks on the iron caps.

The warehouse has now been carefully and fully tested, and there is no further evidence of settlement or giving in any direction.

One thing which is particularly instructive in this partial failure, is the fact that the foundation of the flank wall, which was built at the same time as the foundations for the story posts, and is carried down to the same level, has not sunk. Another instance of the necessity of making the foundations for story posts and columns stronger than the continuous foundation of a wall, once came under my own observation, in the case of the enlargement of a warehouse, where the flank wall, which had stood perfectly well, having been removed, and the warehouse enlarged by building another flank wall removed further out by one bay, a range of posts was built on the foundation of the old wall, every one of which failed.

The cost of Alderman Humphrey's warehouse was about 12,000*l.* in all, or about 190*l.* to the square superficial. The cost of the restoration was about 1,000*l.*

PASSAGE OF THE ALPS—RAILWAYS IN ITALY.

IN my former communication (p. 670, vol. x.) I stated that I hoped to obtain information from the Chevalier Maus concerning his plan for forming a tunnel through the Alps. Having since been favoured by him with full particulars relating to his project, I now send you a statement of the manner in which he proposes to effect the great object he has in view—prefacing my account with a short description of the route he considers it best to adopt, and a few other particulars in connection with the subject which may be interesting to your readers.

The line of communication selected by M. Maus skirts the southern side of the Mont Cenis following the valley of the Dora and passes by the towns of Susa, Oulx, Bardoneche, &c.; thence by means of a tunnel under the ridge of the Alps it proceeds to Modana, a town situated in Savoy, on the west of that extensive chain of mountains, by a route only 30 miles in length; while the existing public thoroughfare over the Mont Cenis pass is nearly 40 miles, so that a saving of about 10 miles would be at once effected between Susa and Modana; and the time required to travel between these two places would, in the event of this project being put into execution, be reduced from eight hours (the time which the mail takes to go by the present road) to one hour and a half, a very moderate calculation for the railway—being only at the rate of twenty miles per hour.

Thus the portion of the great Savoy trunk line of railway, projected by M. Maus, would commence, on the Italian side, at the town of Susa near the confluence of the Dora with the Cenisis, a rapid stream that takes its rise in the Mont Cenis; and would form a continuation of the Turin and Susa railway, now in course of construction: the line would then pass to the right of the village of Gioglione and over the high grounds of Chaumont (where the mountainous character of the country involves the necessity of two tunnels, which are, however, of minor importance, the one being about 3,040 yards in length, and the other only 330. A short tunnel will likewise be necessary at the Fort of Exilles, in order to avoid some of the outworks, and farther on another tunnel, which, however, will be only 2,230 yards long. We thus arrive at Salbertrand, situated ten miles from Susa and nearly 1,670 feet above its level, which gives for this portion of the line an average ascending gradient of 1 in 31. Beyond this, passing Oulx, Savoulx, Beaulard, and even for some way farther on than Bardoneche, the surface of the country is remarkably uniform, and will not present any difficulty: the length of this section is about eleven miles, and its average rate of inclination 1 in 57. The remaining nine miles is a descending gradient of nearly 1 in 57, likewise. And here the line obtains a passage beneath the Alpine ridge by a tunnel of about eight miles in length, at a depth of 5,248 feet, or as nearly as possible a mile below the surface of the pass.

The three principal gradients above men-

tioned being divided into others, to suit the nature of the ground, the rates of inclination on some portions of the line will be steeper in certain cases than those named, but in no instance will they exceed 1 in 28. Throughout the whole length of the principal tunnel the gradient will be 1 in 53.

M. Maus estimates the cost of the work as follows:—

	£
For forming a heading with a machine invented by him for the purpose	180,000
For increasing the size of this heading, so as to form a tunnel in the usual manner through a lias rock, containing scales of mica and grains of quartz, of so compact a nature as not, apparently, to require any facing in masonry	370,880
	£550,880
For the remaining portions of the line forming approaches north and south of the proposed tunnel, viz.:—	
Cost of land	26,019
Earthwork	181,366
Bridges, culverts, &c. including the several shorter tunnels above alluded to	468,448
Rails, chain, sleepers, &c.	171,969
Total	£1,398,682

Say 1,400,000*l.* altogether in round numbers.

As the projector considered that the great difficulty in the way of carrying out this bold conception would be the amount of time and labour which, according to our present system of conducting such operations, it would necessarily require, he has contrived an excavating machine, for facilitating the labour, and which, at the same time, is calculated to expedite in a very great degree the execution of this and similar works, and from the success which has attended the trials he has already made with it, he states that he has no hesitation in fixing five years as an amply sufficient period for the completion of the projected tunnels, working at both ends at the same time, although without shafts, which the height above renders impossible.

The excavating-machine consists of a frame, in which are set a number of very broad chisels, having projections on their face, acting somewhat after the manner of the hammer used by masons to restore the rough surface to the granite pavement in London when worn smooth by the traffic.

The chisels are so arranged as to cut into the face of the rock, at the extremity of the heading, five horizontal grooves, and two vertical channels bounding the former, and at right angles thereto. These grooves or channels are run one into the other, and serve to insulate four rectangular blocks of stone which will then remain attached only by one of their planes to the solid mass of the mountain-rock, from which they may readily be separated by wedges, driven with heavy hammers into the grooves.

These blocks will be about seven feet long, three feet wide, and eighteen inches in thickness.

The machine acts only upon half the width of the heading at a time, so that while it is at work cutting the grooves, which separate the blocks of stone at one side, the workmen are engaged in removing those already cut in the other half-width of the heading.

When the machine and the labourers have each completed their tasks, they mutually change places. The machine again sets to work to shape out new blocks of stone, and the workmen proceed to detach those which have just been cut, beginning by inserting the wedges at the top of the heading, and proceeding downwards: by thus prizing the stones, they are easily separated from the rock, after which they are placed on trucks, and conveyed to their destination, so that the space is again left clear for the machine to recommence its operations.

The excavating machine cuts the channels in the rock, by means of several series of chisels placed one beside the other, in straight lines: these lines of cutting tools are so arranged as to be capable of a slight lateral motion in the direction of the grooves after every stroke: the object of this is to bring the chisels to bear upon all the spaces lying between the several cutting tools situate in the same line, so as to produce not a succession of holes, but a continuous channel similar to a very wide saw-cut.

This lateral shifting of the lines of chisels, which takes place alternately from right to left, and from left to right, is caused by a corresponding motion given to the frames in which they are fixed. Each chisel is driven against the rock by a spiral string coiled round it, and which produces an effect similar to that caused by the muscles of a man in the act of throwing a javelin. This spring, driving the chisel forcibly against the rock, obliges it to act efficaciously, notwithstanding the slight inequalities at the bottom of the channel, arising from a want of uniformity in the resistance of the stone.

When the machine is in operation, the several lines of chisels are all drawn back simultaneously, by means of a species of cam, or moveable bar, which acts against projections formed on the cutting-instruments. This, by forcing back the chisels, and thus compressing the above-mentioned springs, leaves them in a position to exert a strong percussive force as soon as the pressure is removed. This is effected by suddenly raising the bars, by means of an inclined plane, situated at the proper place for the end of the stroke. As soon as the blow has been struck, the springs are again immediately compressed, as before, and the process is continued until grooves have been worked to the requisite depth into the solid substance of the rock.

Although all the chisels in each row are similarly acted upon by the moveable bar, they are, nevertheless completely independent one of the other, so that they may each be removed at pleasure, without interfering with the motion of those adjacent, or even suspending the operations of the machine; and if it be observed that one or other does not act efficiently, such may be removed, and new chisels substituted in their stead, without causing any delay or cessation.

The back and forward motion of the bar, which performs the functions of a cam, by pushing against the projections with which the several chisels are furnished, is caused, through the intermediation of rods and cranks, by two rotatory drums, which themselves are made to turn by an endless rope, communicating with a water-wheel, or other suitable motive power, situated at the entrance to the heading. The apparatus is arranged so as to enable the chisels to strike 150 blows in a minute.

The machine, at the same time, sets in motion a pump, which forces a constant supply of water into a reservoir, the upper part of which is filled with compressed air. By this means, the water is driven out in jets, through small pipes placed between the chisels, and is thus made to play upon the grooves, where it performs the double office of preventing the cutting instruments from getting heated, and removing the dust and chips of broken stone, which would otherwise accumulate in the grooves, and thereby prevent the effective working of the excavator.

The idea that suggested this substitute for manual labour in one of the most tedious of engineering operations is extremely ingenious, and the inventor of this piece of mechanism, which in my opinion is destined, in a short time, to become of general utility, is deserving of the highest credit. I must frankly own that I was not sanguine of its success previous to having examined it, but since I have heard it described, and seen how it works, I feel no hesitation in saying that it will, ere long, be applied to facilitate mining and quarrying operations, and will become extensively used in the carrying out of railway and other works.

I have no motive in extolling thus highly this invention, further than a desire to see introduced and tried on a large scale a mechanical contrivance which recommends itself on account of its extreme simplicity, and very especially because it may be considered the forerunner of a class of automaton labourers which cannot fail to benefit society, inasmuch as they inevitably tend to diminish human toil, and thereby will have the effect of raising the working man in the social scale, and enabling him to find leisure to cultivate his mental faculties; while, at the same time, it will afford increased encouragement to the progress of industry, and will enable us to undertake and prosecute successfully many splendid and important engineering projects which, without its aid, we should not even have dreamed of.

The manner in which the engineer proposes to provide for a proper supply of fresh air during the progress of the work is by means of a tubular ventilator, which he intends to lay along the bottom of the gallery. At given intervals throughout its entire length, according as they may be found necessary, he would insert fans, which he suggests might be placed on the spindles or shafts of the rollers or sheaves over which the endless rope is made to pass, so that they could constantly be worked with very little additional expense. These fans would force the air from one chamber of the tube into that immediately succeeding it, and as the ventilator would be made air-tight throughout its whole length, and only open at its extreme ends, so that the air introduced through the tube may pass out through the heading, he considers that a constant current of pure air would thus be continually maintained in the tunnel, which, by its uninterrupted circulation, would cause such incessant, successive, displacements as to prevent any possible accumulation of noxious gases or unoxygenated atmosphere.

Since writing the above, I have learned that Mr. Robert Stephenson, the eminent English engineer, when passing through Turin, on his way to Egypt, in the month of September, 1850, went to see the experimental machine, then in operation at Valdoc, and M. Maus says he recalls with much pleasure the approbation and encouragement given him by our distinguished fellow-countryman, who, in a letter addressed to the Sardinian Minister for Public Works, stated it as his opinion that it would be advisable for the Government to make a trial of the excavating-machine on an extensive scale.

The exhausted state of the Piedmontese exchequer, consequent upon the war with Austria, and the expenses of the great works connected with the line of railway between Genoa and Turin, have hitherto precluded the possibility of putting the invention to the test of practice in the actual execution of the works proposed. Nevertheless, now that the question of forming lines of railway through the Alps is every day becoming of greater importance, the time is probably not far distant when we shall see active measures taken for the realisation of this important proposition.

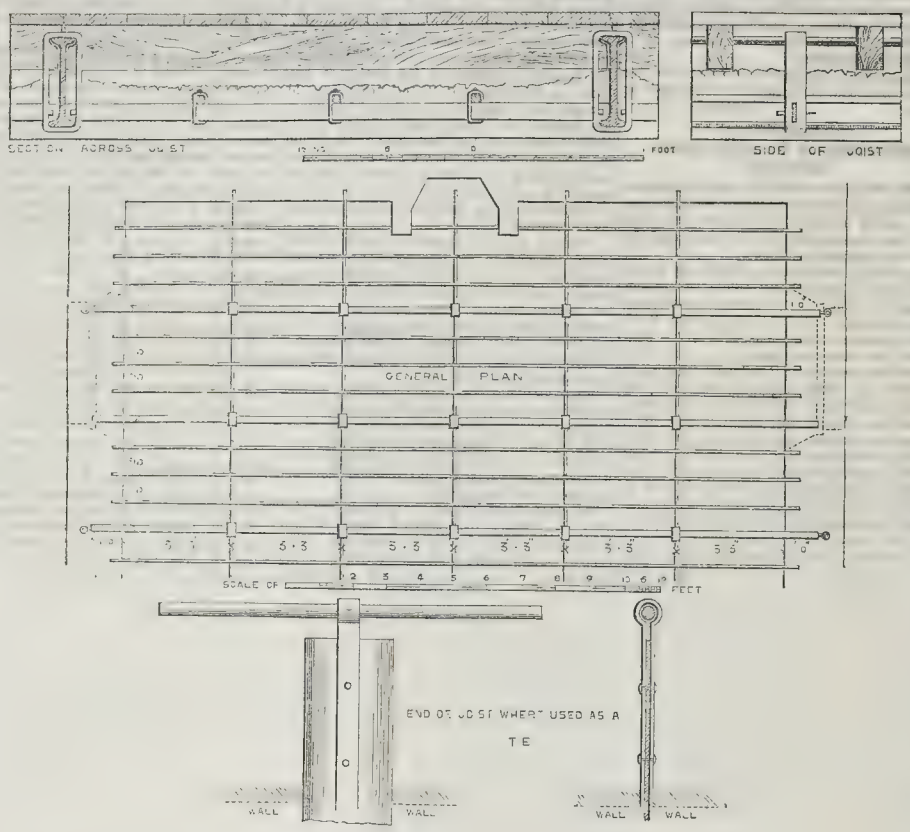
Italy. WM. H. V. SANKEY.

THE CLOCK AT THE 'CHANGE.

I AM sorry that your correspondent, who has pointed out the disfiguring excrescences on the face of the Royal Exchange, did not at the same time draw attention to another remarkable feature, which appears to be somewhat of an anomaly in that celebrated building. The clock, which is said to be a most perfect work of its kind, and upon which, I believe, a very large sum was expended, was supposed to be designed, not only for the use of those who have business on 'Change, but also as a standard to regulate the time for the whole City of London. Yet, it is actually so placed, that it cannot be seen from any part of Cornhill, or either of the surrounding streets, except from one single spot. Any person coming from Princes-street or the Bank, and wishing to set his watch, must circumambulate the whole building, until he comes to the corner of Birchin-lane, before he can accomplish his purpose; and, what is still more extraordinary, the clock is equally useless to the greater part of the frequenters of the Exchange, for it is shut out from at least three-fourths of the quadrangle and the arcade surrounding it. Such a want of foresight as this is surely a great reproach. A MIDDLESEX MAGISTRATE.

THE PENNSYLVANIA ACADEMY OF FINE ARTS, at Philadelphia, have elected Sir Charles Eastlake, Mr. Copley Fielding, Mr. Dyce, Mr. Cousins, Mr. George Godwin, Mr. J. P. Knight, Mr. Maclise, Sir Edwin Landseer, Mr. Stanfield, Mr. John Ruskin, Mr. Butterfield, and Mr. H. Warren, honorary members of the Academy. The Pennsylvania Academy of Fine Arts is the oldest artistic body in the United States. The President, the Hon. Henry Gilpin, is now in London, seeking to establish for America more intimate relationships with British artists and Academies.

FRENCH METHOD OF IRON FLOORING.



FRENCH SYSTEM OF IRON FLOORS.

THESE floors are composed of joists, slightly arched in the proportion of 0·005 metre in the metre; they are placed at the distance of 1·00 metre from centre to centre, and are united by *entretoises*, or flat bars of iron, at the same distance apart. These entretoises rest on the lower projecting edges of the joists, and are secured in that position by passing into, and being fastened to, a band round the joists.

On the entretoises are tied (by means of wire) square iron rods, the same length as the joists.

Certain joists have ends fitted to act specially as ties, as have also the entretoises; thus the whole being firmly built into the walls, the sides of the house are effectually united. The iron-work is then painted, and afterwards filled with pottery bedded in plaster, or with plaster alone, by which process a ceiling is formed to the apartment below: this portion of the work is done as soon as the walls are of sufficient height to receive it.

Where a wooden floor is required, it is nailed to small joists notched in between the ironwork.

The joists are of rolled iron, regulated in their size and depth by their span, the other portions are made in a manner to insure their going together without the aid of forge or file at the place of construction.

The whole, complete, forms a floor at once light and fire-proof, occupying about 15 per cent. less space, and adding (in Paris) little to the ordinary cost of wooden construction.

The accompanying drawing is for a span of from 5·00 to 6·00 metres, upon the system of Mr. Thuasne. H. H. B.

ON THE HEATING OF OUR CITIES AND TOWNS, &c.

If we reckon the number of individuals to be provided for daily with meat, clothing, and warmed houses by means of fire, and reflect upon the subject, we naturally inquire why no means have been yet adopted to mitigate the annual cost of heating our abodes, &c. The charges and attendant expenses of fuel and its use are numerous. According to the operation of one of the principles of civilization (if progressive civilization), the necessaries of life generally (instance paper) become cheaper as the demand for them increases; but hitherto there has been no means of supplying us either with heat or its materials by the operation of that principle; nor can we to any extent acknowledge the benefit of any improvement from which we derive it as we do in other manufactures by the application of science; and besides, we have become so reconciled to the defects of this individual practice by general usage, that the habit almost precludes our hoping to witness the whole separate fire system immerging into one grand concern.

Companies afford us light and water, which they make available at any moment, and at less expense than it could be effected by individuals; and although large interests and thriving too, are connected by means of the present system of separate fires in houses, yet let us not reject or demur to a scientific arrangement for consuming our fuel and supplying it in a form, and by a system adequate for the manufacture of heat upon an extensive scale.

Why object to thus heating the principal rooms adjoining main streets, &c. because it could be done at infinitely less expense than they now are at present by individual exertion, &c.; besides, by having the prepared element on hand, rooms and apartments could be heated more quickly than now.

The smoke nuisance would gradually disappear.

The degree of heat, the most beneficial for our rooms, might then be indicated by a thermometer, and more than the required degree would be injurious: how improved would be the state of rooms for health and comfort. All houses require fire and water—the latter, if heated, would supersede a great demand for the former for that purpose alone.

We are persuaded that capital and ability will accomplish this object, at an almost incredible diminution of our present outlays, for upon reviewing the various forms and changes, fire or heat (not smoky heat) assumes, and its numerous and varying degrees of intensity when manufactured from materials of various properties and their combination, we recognise the probability of soon having it in such form and quantity, to almost each of our wants, as to supersede, in part at least, the utility of so many separate fires for individual establishments.

Fire, air, and water may all be conveyed to any point from an original manufacturing source, provided we apply science and such apparatus as it suggests.

We may render the apparent destructiveness of heat applicable and serviceable to heating water: these elements accompany one another from one point to another, and travelling side by side, either in a direct or circuitous course,

when one surrounds the other, are harmless. This arrangement, by varying the surrounding of each other at different points not only renders to each the moving principle, but removes the dangerous tendency or power of fire to escape, and corrects it under unfavourable circumstances, should they ever occur, by a momentary quenching.

Thus arranged, the action of water and fire would be incessant and onward to the escapes or ranges. VITRIFIED CLAY.

SHIPMENT OF MARBLE FROM CARRARA.

THOSE who have visited the marble quarries at Carrara, and seen the immense and laborious traffic carried on there, must have been surprised, and unfavourably so, at witnessing the process of shipping the blocks.

The coasting vessels to be loaded are drawn up on the beach, and shears erected alongside, by means of which, and a clumsy capstan and tackle, the blocks are hoisted on board. With blocks of ordinary dimensions, this is the plan adopted, but when these happen to be of extra sizes, another most singular method is employed. The vessel in which a large block is to be embarked, after being hauled up on the beach, has her masts taken out, and the hold filled with sand, an inclined plane of the same material being raised from the shore to the side of the craft: these preparations completed, oxen are yoked to a sledge on which the block is placed: it is then dragged up the incline, and ultimately deposited in the centre of the hatchway. The sand is then thrown out, and the marble gradually lowers into its place. The expense and delay connected with this system are beyond conception. Weeks are often lost waiting for fine weather, and sufficient depth of water for relaunching the loaded craft, which, if of a large size, as a precaution against her capsizing, is bound round with empty casks. Oxen and men then lend their assistance, and by their united efforts the vessel is dragged into the sea.

Such is the system that has existed to the present day, which appears the more extraordinary, when it is considered that nearly one thousand tons of marble are shipped monthly.

The maxim of "better late than never" has, however, had its illustration here, as we hear from a recent visitor to the newly-erected Walton Pier, constructed by a marble merchant of that name, and American consul, at his sole expense.

This bold and enterprising work, forming a double line of rails, is constructed on piles of from 60 to 90 feet in length, and extends into the sea nearly 800 feet. The timber for its fabrication was brought from the Apennines beyond Florence, down the Arno to Leghorn, and from thence, by boat, to the works. It affords us additional pleasure to add, that all the trade may take advantage of its convenience on paying a moderate toll.

His Royal Highness the Duke of Modena gave a ready permission to Mr. Walton to construct the pier, and remitted half the duties on all the materials imported and applied to its construction. The engineer, Mr. Thomas Robertson, of Leghorn, was enabled to complete the undertaking in thirteen months. He conducted our informant over the works, and explained the various methods adopted for carrying out the design—no easy task in the face of the violent storms which so frequently occur on that open coast.

We have been informed, that the Duke of Modena has granted permission for the formation of a railway from Mr. Walton's pier to the marble quarries and the city of Massa. This is a move in the right direction, and we congratulate Mr. Walton in having originated and executed an improvement so much required to develop the commerce of Carrara as the pier we have attempted to describe will doubtless prove.

There are now two powerful cranes, of improved construction, at full work on the pier.

NEW CHURCH AT CHATHAM.—The Earl of Shaftesbury has laid the foundation-stone of a new church, dedicated to St. Paul, in the parish of Chatham.

THE LATE M. BLOUET, ARCHITECT.

MONSIEUR BLOUET, architect, member of the Institute of France, and honorary and corresponding member of the Royal Institute of British Architects, recently died at Paris, and was buried a few days since at the cemetery of Montparnasse. The Secretary of the Academy of Fine Arts in the name of the Institute; M. Damont, secretary of the School of Fine Arts, as representative of the professors; M. Caristie, as member of the Council of Buildings; M. Rohault de Fleury, vice-president of the Central Society of Architects, and M. Marcellin, in the name of M. Blouet's pupils, spoke in most touching terms of the career of the respected deceased, and in a manner to impress the minds of all who were present on the melancholy occasion.

When a pupil, it appears that M. Blouet carried off most of the prizes at the school, and above all, the "grand prize"—which entitled him to be a student at Rome. He there crowned his various studies by his restoration of the Baths of Caracalla, which was published under the auspices of the Minister of the Interior at the recommendation of the Academy, and is a valuable and interesting work.

Entrusted with the direction of the artistic part of the expedition in the Morea, he collected together many valuable materials for this work.

Being sent by the government to America, to study there the cellular prisons, he brought back with him some valuable and judiciously selected documents on the subject.

As Professor of Theory at the School of Fine Arts, M. Blouet distinguished himself by the correctness of his views, the rectitude of his principles, and by his zeal and devotion to the fulfilment of his studies. Head of a numerous private school, the pupils under him were noted for their success amongst various schools, and those of the Academy of Fine Arts.

Besides the theoretic works in which M. Blouet was engaged, he directed the important publication of a supplementary volume on the Art of Building, by Rondelet, and revised a new edition of this remarkable work. L'Arc de l'Etoile, that colossal and noble monument, the erection of which had fallen into the hands of several generations of architects, was completed by M. Blouet. The crowning ornaments only, for which he composed several beautiful designs, remain unexecuted. Nevertheless, the suitableness of his selection of subjects for the sculpture, the simplicity of their lines, and the harmony of their proportions with the mass and the details of the architecture, would have surely fixed the choice of the government on one of these compositions.

M. Blouet had for several years filled the post of architect to the Imperial Palace at Fontainebleau, where he carried out some difficult restorations. The Emperor in making a present to that town, at his last visit there, of 200,000f. to complete the sum necessary for the erection of a church, worthy of that residence, committed it to the hands of M. Blouet. If the monarch in thus giving to this architect so striking a testimony of his appreciation of his talent, has not been able to procure for M. Blouet the connection of his name with an edifice worthy of himself and his sovereign, at least the artist has found in the prospect of the realization of this design the most agreeable occupation and the greatest satisfaction to soothe the last moments of his too short life and career.*

INDUSTRIAL EDUCATION AT SHREWSBURY.—Dr. Lyon Playfair lately visited Shrewsbury, on invitation, as secretary to the Department of Practical Science under the Board of Trade, in order to explain the views of the Government on the subject of industrial education, and to afford such other information as was necessary. Nearly forty gentlemen met Dr. Playfair at the Royal Free Grammar School, where the headmaster, Dr. Kennedy, provided an elegant luncheon. The Rev. Dr. Kennedy presided, and in course of the meeting it was proposed to unite the several scientific and mechanics' institutions of Shrewsbury under one management, if possible, as a preliminary to further steps being taken for the promotion of industrial education in the arts and sciences.

* This notice, gathered from the Paris journals, was read by Professor Donaldson at the Institute of Architects, on Monday evening last.

SANITARY DANGERS.—PURE WATER.

A PARAGRAPH, under this title, extracted from the *Leader*, and going the round of the newspapers, may do some damage to the cause of Sanitary Reform, so far as regards the substitution of good or pure water for Thames ditch-water, or other "cat and dog flavoured" *pabulum mortis*, such as is supplied to more towns than London. Iodine is a well-known medicinal or sanitary agent, which is now found, along with its confrere Bromine, to pervade, not only many waters, but a multitude of other substances naturally apt to get into the human and other animal systems, and even the air we breathe; so much so, and of such importance in the general economy of nature are these halogens, chlorine, or the true spirit of salt, inclusive, that they seem to constitute a sort of "sanguis naturæ," as these very agents were actually called in ancient times, when, though erroneously imagined to be modern discoveries, they were perfectly well known to natural philosophers, as was shown some years since in the first of a series of articles on the metals, in our columns. Now, it has been known for some time, that the absence of iodine in Alpine waters is a cause of goître and cretinism; and a singular collateral proof of this has lately occurred, and we give it in the words of the *Leader*:—

"Fully and Saillon, two villages on the right bank of the Rhone, although almost touching each other, have long been remarkable; Fully being a notorious cradle of cretinism, Saillon as notoriously free from cretinism or goître. Of late years, however, Saillon has become infected. And the reason, say the inhabitants, is none other than the *sanitary* (?) measures recently taken to *purify* the water. Formerly the water of the Salente, before reaching the village, was wont to mingle with the streams of a hot spring, named *source de fer*. To bring *purer* water into the village, they altered its course, and turned it away from the hot spring. Observers declared that the date of the appearance of goître in Saillon coincides pretty nearly with that of their being blessed with 'pure water.' M. Chatin investigated the matter; he analysed the water of the Salente, the water of the hot spring, and the water where the two springs mingle; the result confirmed his previous publications; he found the Salente water free from iodine, and the water of the hot spring and of the two mingled strongly impregnated with it. The conclusion is irresistible: wherever the water in these districts is free from iodine, cretinism and goître are observed among the inhabitants; wherever it is impregnated with iodine, these diseases are absent. To 'purify water' is not always to make it better adapted to our organism; and there may be some physiological instinct in that paradoxical lady's announcement—'I like water with a dead-cat-and-dog flavour in it.'"

The deprival of a village, in such a vicinity especially, of water from hot springs, in customary domestic use, without analysis or sanitary consideration, even while under sanitary pretences, was most injudicious, but certainly constitutes one of the oddest sidelong or implied arguments *versus* sanitary reform in water supply and in favour of cat-and-dog flavours and the let-*bad*-alone system that we ever recollect to have heard of. Had such hot springs as those alluded to been *infused into* the water heretofore supplied *to Fully*, that would have been a *sanitary* improvement indeed; but the withdrawal of them from that supplied to Saillon deserved no such name, and was, on the contrary, an insanitary measure, in express contradiction to the objects and views of sanitary reformers, who do not necessarily require "pure water" to be without any impregnation whatever, were it even possible to procure it in such a state, which we have long since shown to be impracticable—even pure rain-water being believed to contain ammonia before it has descended out of the atmosphere, in which, moreover, it absorbs carbonic acid gas, if not oxygen, and nitrogen too. The case on the Rhone, in fact, constitutes conversely one of the strongest possible arguments in favour of the sanitary influence of a change in source and quality of water supply, wherever that may be shown to be really requisite.

PROVINCIAL NEWS.

Yarmouth. The extensive works in connection with the Great Yarmouth Waterworks and the Wellington Pier Company will shortly be commenced. At preliminary meetings of the directors, held subsequently to the Act receiving the Royal Assent, it was announced that Messrs. Cochrane and Co.'s tender for iron pipes required for the former company was accepted; and that Mr. Ashcroft, the engineer, had concluded contracts for the timber, &c. for the latter.

Wigston Magna.—The spire of the church of St. Wolstan in this parish has been completed, and the vane, the spindle of which forms part of the lightning conductor, fixed. The building committee, however, gave instructions to Messrs. Walker and Goodacre, the architects, to enter into a second contract with Messrs. Lindley and Firn for repairing the tower from the spring of the belfry windows downwards, so that the contractors might have the advantage of the scaffolding which they had erected for the rebuilding of the spire. There still remains a sum of 130*l.* to be raised in order to enable the committee to complete the undertaking.

Sonning.—The restoration of the old church of St. Andrew, Sonning, has been completed, and the edifice reopened. The cost, amounting to several thousand pounds, will be defrayed by voluntary contributions. Portions of the arcades in the nave have been rebuilt; a new south arcade in the chancel has replaced three brick arches of debased design; and the eastern arch in the north arcade has been restored by Mr. Phillip, sculptor, who has also carved the figure of St. Andrew, in the north porch, and the foliage generally throughout the church. A new nave roof has been raised upon a clerestory, lighted by circular sex-foiled windows,—and, with few exceptions, the windows generally throughout the church are new. The walls, externally, have been cased with black flint to correspond with the south aisle: the roofs of aisles have been opened and their timbers shown, except in the chancel, where the ceiling is panneled, the eastern portion being stellated and its mouldings intersected with carved bosses, by Rattee, of Cambridge, who has furnished the greater portion of the wood carving. The whole of the fittings have been constructed of old oak. Messrs. Minton's tiles pave the sanctuary, and the eastern window is filled with painted glass by Wailes, of Newcastle, the subject being the Transfiguration. Mr. Dell, of Sonning, was the contractor, and Messrs. Wheeler, of Reading, executed all the stone work. The works were superintended by Mr. Woodyer.

Oxford.—The church of St. Paul in this city, built for the relief of the parish churches of St. Giles and St. Thomas about the year 1839, had originally no chancel, the altar being placed in a recess at the east end. The new chancel, which was consecrated by the bishop of the diocese on Tuesday, the 31st ult. has been built principally by the munificence of the present vicar, the Rev. Alfred Hackman. It is divided into chancel and sacrarium, the latter having an apsidal termination, and being covered with a semi-dome. The sacrarium is distinguished by being raised three steps above the chancel, by the reredos, which has been extended from the size of the original, by the marble pavement, and by the lining of the walls above the reredos with Caen stone, and the pilasters having carved capitals. The entrance of the chancel has an arch, beneath which are two steps, thus elevating the altar five steps besides the platform upon which it stands. The upper portion of the sacrarium has three circular-headed windows, the centre of which contains, in medallions, the Crucifixion, the Holy Sepulchre, and the Last Supper; the side windows having figures of St. Peter and St. Paul, with the emblems of the Evangelists. This glass was executed by Willemont, and is a fine specimen of his skill. The ceiling is finished a deep blue, and studded with stars, the form of which and their application are taken from the church of St. Nazarro e Celso Ravenna; they are supposed to be of the fifth century. In the semi-dome they are gathered in the form of a cross. The works have been executed by Messrs. Castle and Son, builders, and the stall-benches by Messrs. Margetts and Eyles. The fronts of the stalls, with seats for the choir, are not yet completed, but are being executed in cast iron by the Coalbrookdale company. The works have been executed from the design of Mr. Edward G. Bruton.

Southampton.—Public baths and washhouses are about to be established here by a joint-stock company. The corporation have given a piece of land over which the tide flows. No rent is to be paid, but poor people are to be allowed to bathe for one penny each after five o'clock in the evening. The baths are to be on the model of those in Paris, and have been projected by a gentleman long resident there.

Newland (Worcestershire).—The late Earl Beauchamp devised 60,000*l.* towards erecting and endowing almshouses at Newland, on condition that within twelve months from his decease a proper site for such almshouses be provided by some other person or persons. Should this condition be unfulfilled, the will directs the legacy to lapse to the trustees of St. George's Hospital, Middlesex. The earl died on 22nd January last.

Chippenham.—A premium having been offered for the best design for Langley Burrell New District Church, a number of drawings and estimates have been sent in, and three have been selected for final decision.

Hay.—The foundation-stone of Llowes new church was laid on 19th ult. by Mrs. De Winton, of Maesllech Castle, and Mrs. Beavan, of Brynyr-hydd House, under the superintendence of Mr. W. J. Worthington, of London, architect. The style of building is Early English. The contractor, Mr. William Jones, of Brecon, has just completed the adjoining parish church of Clyro.

Cardiff.—Great exertions have been made to raise subscriptions for the Cardiff Sailors' Home, by the honorary secretaries, Lieut. Crewe Read and Mr. Ware, with many other gentlemen of this town; but their praiseworthy endeavours have proved unavailing. Under these circumstances the trustees of the Marquis of Bute have decided to carry out this much-desired institution themselves. A church, the presentation of the Marchioness of Bute, is to be attached. It is anticipated that the works will be proceeded with immediately.——At last there is some prospect of having this town drained. It was decided a fortnight ago to refer the question to Sir William Cubitt; but that gentleman having declined the office, it is to be placed in the hands of Mr. Hawkeshaw, whose decision is to be final.——The proposed Welsh church here will shortly be commenced, as the trustees of the Bute estates have given a site. The Marchioness of Bute has subscribed very handsomely towards this building.

Leamington.—The chief stone of the Royal Leamington Literary and Scientific Institution and Public Hall was laid on Monday in last week, with great masonic formality, by the Provincial Grand Master of the Warwickshire lodge of freemasons.

Leigh.—On Thursday week, the foundation stone of Christ Church, Pennington, was laid by Lord Lilford. The total cost is calculated at 4,300*l.*: a parsonage-house is also proposed to be erected, but the subscriptions still fall short of the amount required for the completion of the undertaking. Mr. Shellard, of Manchester, is the architect; Mr. Foggett, the builder; and Messrs. Ellis and Hinchcliffe, sub-contractors for the masonry. The style of architecture is Perpendicular. The edifice is to be erected from Yorkshire white stone: the portico is already erected. The whole will comprise a nave and two side aisles, with the chancel at the east end, a tower at the west, and a porch on the south side. Externally the aisles will be each divided into six bays, each bay containing a large window, and a buttress being placed between each. The clerestory nave will contain six pointed windows on each side. The chancel will be nearly as high as the nave, and of the same width. It is divided into two bays on the south side: each bay will contain a window with buttress between. The east end will be occupied by a large window, with perpendicular tracery, the whole of the walls terminating in a plain parapet. The tower will rise 70 or 80 feet, and consist of three stages, with angle buttresses at each corner. The parapet will be embattled. Internally the body of the church will be separated from the aisles by six pointed arches, rising from octagonal piers of stone. The chancel will be divided from nave by a moulded archway, and the floor slightly raised. The roofs will be open timbered, and, together with the pewing and other wood work, stained of a dark colour and varnished. The principal entrances are at the west end, through the tower, and through the south porch. The church will accommodate 800 persons. The nave and aisles are 70 feet long by 50 feet wide. The works will be completed in a few months.

Leek.—At a vestry meeting the parishioners, last week, resolved to submit to a rate of 1d. on the pound for the establishment of baths and washhouses. The chairman, Mr. John Davenport, of Westwood Hall, gave a detailed estimate of the cost of erecting baths, according to the plans of Messrs. Francis, of London, who were the architects of St. Luke's Church, Leek, which plans were exhibited in the vestry-room. The estimated total cost was 1,760*l.* including all requisite apparatus and land. The amount promised by voluntary contribution was between 800*l.* and 900*l.* It is proposed to borrow the remainder from Government, to be repaid out of the rates in twenty years. ——The new building recently erected in Derby-street, at the corner of Russell-street, for the Savings Bank, has been opened. The building is of Italian character, and contains accommodation for the actuary. It was designed by Mr. W. Sugden, of Leek, architect, under whose superintendence the building was carried on and completed. The cost, exclusive of the site, is about 900*l.*

Claughton.—"We understand," says the *Liverpool Journal*, "that a contract has just been entered into for the erection of a magnificent mansion, near Lingdale House, in Claughton, for Mr. Robinson, iron merchant, of Liverpool, a gentleman connected with the Coalbrookdale Company. The design, plans, and specifications are by Messrs. W. and T. Scott, architects, and the contractor is Mr. James Routledge, of Tranmere. We understand the cost of the mansion and offices will be nearly 5,000*l.*

Leeds.—The chief stone of a new Roman Catholic church of St. Mary was laid on Tuesday in last week, on the highest ground of Richmond-hill, at the east end of Leeds, by Dr. Briggs, the bishop, assisted by about twenty priests. The architect is Mr. J. A. Hanson, of Edinburgh and Preston, and the style will be Geometric. It is intended at once to complete the nave, leaving the aisles to be completed when the congregation require additional accommodation. The nave will seat 700 persons, but when the building is completed it will accommodate 3,000. The nave and aisles will be 120 feet long, by 60 wide, with a height of 100 feet to the ridge, supported by clustered pillars, each 35 feet high. Distributed over the edifice there will be a cloister, confessionals, a sanctuary, and various chapels. At the north-west corner will stand a tower and spire, reaching an elevation of nearly 300 feet. Connected with the chapel by a cloister, will be a new residence for the Religious—that is, the body of priests who will perform the ministrations in St. Mary's, to which gardens will be attached, on the westerly side of which a terrace will be constructed, commanding an extensive view of the town and its suburbs.

Skipton.—On Tuesday in week before last, the church of St. Mary, Embsay, was consecrated by the Bishop of Ripon. The church is built in the perpendicular style, from a design by Mr. T. Shaw, of Leeds, architect.

Glasgow.—On Thursday week, the foundation and key stones of the Kelvin Bridge were laid in presence of a numerous assemblage. When this new bridge is finished, the connection of Hillhead and Gilmourhill with the city will be complete. The following are the dimensions of the bridge:—Clear span, 70 feet; breadth over parapet, 37 feet 6 inches; height of arch from visible spring, 13 feet 6 inches.

Musselburgh.—A monument is to be erected to the late Dr. Moir, the "Delta" of *Blackwood's Magazine*, at Musselburgh, near Edinburgh, at which village he dwelt. The monu-

ment will consist of a statue of the poet, 7 feet in height, on a pedestal 10 feet in height. The work is to be executed by Mr. A. H. Ritchie, of Edinburgh.

Grangemouth.—At Grangemouth, in Scotland, a new school and hall has been completed and opened. It is 80 feet long by 30 feet wide, with a ceiling 20 feet in height, and is said to be the largest hall in the county, accommodating from 700 to 800 persons. Besides school-rooms, the hall is intended for public meetings. It is lighted by twenty large windows, and at night by four gasaliers, each with four branches, and twenty brackets round the walls. The building has been designed, contracted for, and finished by inhabitants of the town. It was opened on Tuesday week with a grand concert.

Elgin.—Efforts are being made by the Building Committee of the new Free Church, according to the *Forres Gazette*, to complete the original design by surmounting the north façade with the spire, at an expense of 400*l.* The edifice is now in course of erection: the side walls are levelled, and the builders are about to commence the gables and spire. Mr. Lamb, contractor for the mason work, has a numerous staff of builders and hewers engaged on it. The material is from the Hospital Quarry in the vicinity. A manse for the ministers is also proposed to be erected.

THE ORTHOGRAPHIC BEAUTY OF THE PARTHENON REFERRED TO A LAW OF NATURE.

UNDER this title Mr. D. R. Hay has printed, with additions, the paper by him which was read at the Institute of Architects in February last.* We have already given the substance of the essay, with a summary of the remarks made on it,† and will now add the result of an examination of the theory, by one who has given considerable attention to the subject, in his own words.

We may say that the paper is written in a good spirit, the author assuring his readers, in the words of an ancient philosopher, that,—"If any one can prove that he has found any method yet better and more suitable, he shall be treated, not as an enemy, but as a friend, and his ideas shall prevail."

In my examination of Mr. Hay's theory of the Parthenon, contained in his paper read before the Institute on Feb. 7th, I confined myself to six points, and the results are as follow:—

1. In his theory, the height of the architrave and frieze, taken together, equals the length of the front, which I shall call F, multiplied by tan. $5° = F$ tan. $5° = 8{\cdot}866$ ft. Whilst the measured dimension $= 8{\cdot}842$.

2. The ordinary intercolumniation, according to the theory $14{\cdot}037$ ft. Measured $14{\cdot}090$.

3. Height of pediment to the top of cymatium $= F$ tan. $30° = 58{\cdot}505$. Measured height, $59{\cdot}127$.

4. Height of column, *without its abacus*, $= F$ tan. $16° = 32{\cdot}926$ ft. Measured dimension from the angle columns, $33{\cdot}104$, or from the middle columns, $33{\cdot}069$.

5. Height of pediment, including cymatium, above the level line drawn from the extremities of the cornice,

$$= \frac{F}{2}\left(2 \text{ tan. } \frac{\pi}{6} - \text{tan. } \frac{\pi}{8}\right) = 13.329 \text{ ft.}$$

$$1 + \frac{\text{tan. } \frac{\pi}{8}}{\text{tan. } \frac{\pi}{14}}$$

The measured dimension is $14{\cdot}073$.

6. The breadth of the triglyph, according to the theory is $2{\cdot}559$ft. The measured dimension $2{\cdot}766$.

In all the above cases approximations may also be made by simple relations of the kinds hitherto usually recognised.

1. The whole entablature $= \frac{2}{7}F$, and the cornice being two-elevenths of this, there results for the frieze and architrave $8{\cdot}844$. Measured, $8{\cdot}842$.

2. Ordinary intercolumniation $= 2\frac{1}{2}$ diameters of the column $= 14{\cdot}075$. Measured, $14{\cdot}090$.

3. Height to top of cymatium

$$= \frac{F}{12} \cdot 7$$

$$= 59{\cdot}125$$

Measured, $59{\cdot}127$.

4. Height of column.—We may obtain this by again taking the ratio $\frac{7}{12}$, multiplied into the whole height, *i.e.* $59.125 \times \frac{7}{12}$, to give the height to the top of the abacus of the middle columns above the angles of the stylobate, that is, including the rise due to the curvature, and by deducting the latter for the *net* height of the columns, *including the abacus*, we get 34.256. The angle columns measure $34{\cdot}253$, and those in the middle of the fronts $34{\cdot}218$. The thickness of the abacus is $1{,}149$.

5. Height of the pediment.—This is the same as the ordinary intercolumniation, viz. $14{\cdot}075$. Measured, $14{\cdot}073$.

6. The breadth of the triglyph seems, in common with the subordinate dimensions, to be determined by minutes or sixtieths of the column. Here $26\frac{1}{2}$m. $= 2{\cdot}763$, and the breadth of the triglyph is $2{\cdot}765$. F. C. PENROSE.

* Blackwood and Sons, Edinburgh and London. 1853.
† See p. 192, *ante*.

THE LABOUR QUESTION.

At Birmingham the journeymen joiners and carpenters have at length agreed to accept the advance of 2d. a day offered by the master builders, on the understanding that in course of two or three months, if provisions and labour continue to advance, the masters will feel disposed to give the other penny asked for by the men. Meantime, also, the masters agree to closing on Saturday at 5 o'clock instead of half-past 5.

At Walsall, the journeymen carpenters and joiners held a meeting on Tuesday in last week, when it was resolved to solicit from their employers an advance of 2s. a week upon their present wages. "in consideration of the increased and still increasing price of provisions."

The Salisbury bricklayers, who struck on Saturday week, have got an increase of 2s. a week, and the labourers 1s. making the wages now 20s. and 12s. The carpenters during the previous week had obtained a like advance of 2s. and 1s. a week on their wages.

At Carlisle, numerous building operations have been retarded by a general turn-out of bricklayers' labourers, who demand an increase of 3s. a week on their wages, which the masters are not inclined to give. A labourer has been since committed to prison for a month, with hard labour, for intimidation of his fellow-workmen.

A question on the law of wages and dismissal was decided at the Town-hall, Wolverhampton, in course of last week, when a cleaner of engines summoned the Shrewsbury and Birmingham Railway Company for nonpayment of 1*l.* 13s. 6d. wages. For the defence, the Hon. E. Petre, superintendent of the locomotive department, stated that the complainant had been in the employ of the company for a few weeks, and at the time of his entering into their service he signed his name in a book, to which was attached the rules for the regulation of the workmen at the Stafford-road works. The first rule was to the effect, that if a workman committed any of the offences specified in the rules, he should be liable to dismissal, suspension, or fine. The complainant had infringed one of the rules, whereby an engine had been damaged to the extent of upwards of 30*l.* and had therefore been dismissed by him, and fined the amount of his wages towards the damage done. The magistrates were of opinion that he (Mr. Petre) had not power to dismiss and also to fine, and ordered the payment of the sum claimed. Mr. Petre then applied for a summons against the complainant for damage done to the engine, which was granted.

A writer in the *Liverpool Journal*, who congratulates the workmen generally on the present movement, nevertheless thinks it right to caution them on the subject of capital and profits, and in course of his remarks, points to the conclusion, that since bank interest on money lent to builders and other employers is low, the profits made by employers must also be low, otherwise competition for capital would inevitably raise the rate of interest, which therefore would be high were profits really high. "You see merchants ride in coaches," he continues, "cotton spinners purchase estates; master builders vieing with both,—and therefore, you are sceptical. You see the exceptions, and you draw a general inference. The majority of those engaged in trade, commerce, and manufactures, do not ride in coaches, or purchase estates; they live; and a list of the landed gentry, and a return of private vehicles, surprise in showing how few have emerged from the commercial and manufacturing class into the aristocratic. For the reason stated, the gains of industrial employments are absorbed in the creation of augmented means of employing labour. As wealth accumulates, competition grows more active, and the inevitable sequence is, low profits. . . . . The rate of interest is now at a minimum. An advance in the rate of wages, or an advance in the price of material, has a necessary sequence—a rise in the price of manufactured goods. It matters not one farthing to the employer whether he pays his operatives 20s. or 30s. provided the wages paid do not curtail the quantity consumed of the manufactured article. Within a certain range the consumer must pay: when consumption diminishes fewer operatives are employed. Hence the conclusion that *the rise in the rate of wages is not always a gain*. Labour constitutes a large item in value; and, as the labourer is a consumer, he contributes to the payment of his own wages. Except in cases of urgency, where the occasion was or is temporary, the advance has been 2s. a week,—a very moderate addition; but you can hardly have failed to see that the general rise in wages has affected this increase, and is likely to affect it still more. Houserent has risen, or will rise; wearing apparel will rise, or has risen; and an advance is inevitable in every article, into the price of which labour enters. When you count up the advances, 2s. are seriously invaded; and, for the reason I have given, another advance of 2s. would have a similar result, and might go further—stop consumption by raising prices. There is matter here for serious reflection."

Messrs. Truman, Hanbury, Buxton, and Co. we are informed, have issued an intimation to the effect, that the whole of their workmen (about 300, including mechanics) are to be allowed one half-day every week for their own use.

Wages are rising in many parts of France: about forty workmen, employed on the fortifications of Avesnes, lately struck for an increase.

It is with the greatest interest that I have weekly read your observations on the wages movement, and I am glad to see that there is some one to put forward the interest of the superior workman. Having had fifteen years' experience as a carpenter, joiner, &c. in builders' shops, and in some of the first jobs in the country, I think it but just to mention one or two of the grievances which the first-class workman is labouring under. In the first place you go to a builder and ask for a job, when he tells you he wants a good tradesman. You go to work, and soon find that out of a score of men in the shop, there is not more than one good workman—often not one,—and not one in twenty that has got anything like a good chest of tools; and what is the remuneration you get for having in your possession a first-rate chest of tools, and knowledge to use them in any work that may be put before you?—why, the poor paltry sum of about two shillings more than the poorest workman in the shop! It is no solitary case this, but an every-day affair. If you say you cannot work for the wages, you are told that they cannot give more, as it would be the means of raising wages generally; but they will own that you are worth more, but would sooner you left than advance your wages, and give you what in justice is your due. And again, as to piecework, oftentimes have I taken piecework at a fair price, and could earn from five to eight shillings per day; but how was it the next time?—you were cut down in price till you were not able to get more than four shillings, or not that. Is that justice to the man who has studied his business, and done all he could to advance himself in all that constitutes a good workman. Most builders that I have had any conversation with say, they want to see more skilled workmen in the country: but first let them do justice to those they have. If you were to question fifty of the best joiners in the country, they would tell you that the builders generally are the greatest enemies to the advancement of skilled workmen. There are many of my fellow workmen that I have met in different jobs, superior men, who have left the trade disgusted with the treatment they have experienced. No wonder that there are so few good workmen in the country.

A VOICE FROM THE COUNTRY.

MASONS' PROVIDENT INSTITUTION.—We would direct attention to an advertisement in another column, showing that the Masons' Provident Institution, established in 1845 for granting pensions and erecting an asylum for aged and decayed masons and their widows and orphans, are to hold their second annual dinner in aid of their funds on Monday next, the 6th inst. when Mr. Tite, F.R.S. will be in the chair, supported by a goodly number of honorary stewards. It is to be hoped that influential members of the trade will also rally round him, and assist in producing a result that will be of some consequence to the widow, the orphan, and the aged mason, for whose benefit the institution has been founded.



ST. JOHN'S SCHOOLS, ANGELL TOWN, NORTH BRIXTON.

SCHOOLS AT ANGELL-TOWN, NORTH BRIXTON.

THE schools at Angell Town, North Brixton, are built of Rochester brick, with Bath stone dressings, and consist of a school-room for 120 girls, 72 feet by 18 feet; school-room for 180 boys, 100 feet by 18 feet; with a class-room, 28 feet by 18 feet, having a residence attached; an infants' school, to hold 100, 37 feet by 23 feet, with a mistress's house adjoining. The cost of the school-houses was 1,100*l.*; residences and other outbuildings, fences, &c. 550*l.* The works were executed by Messrs. Holland, under the direction of Mr. B. Ferrey, architect.

In a recent number, we published a view of the church built here, on a site given by the owner of the estate, Mr. B. J. A. Angell. The surrounding land is fast taking shape for the erection of buildings.

WEAVERS' LODGINGS, SPITALFIELDS.

WILL you allow me to put a different construction upon the fact—that the model lodging-house (or *Metropolitan Chambers*, as the name is) in the neighbourhood of Spitalfields, has not been hitherto so well filled as might be expected from the excellence of the place,—than the one given in the last number of the *Builder*? It is there stated, as based on information gleaned from those who reside in this district, that one of the chief objections to this establishment is that of not being able to enjoy in such a lodging the agreeable tea-table conversation of some female, who might be as a mother or sister to the unhomed worker. Now, this is altogether an extremely pretty and natural sentiment, and has the special interest of coming from the lips of a class of people who so long have had the pleasing repute of loving flowers and singing birds,—although these flowers have no better place to bud and blossom in, than in an ugly, small, earthenware pot; and although the birds, linnets, and larks—even the ambitious-breasted skylark—be imprisoned in cages!

Still, is the statement itself really the fact? Is it the truth, that the Spitalfields weaver's love for the wholesome and sweetening influence of the womanly presence is so strong, that he knows of no other cause to keep him from taking up his abode in these chambers? No, I do not believe that these are the right reasons, generally speaking; and I am of this opinion simply because I know, that a large family commonly pay no more rent for the one room which is to be both the home and workshop for all, than is demanded in this lodging-house for the individual man. Besides, the unmarried weaver must necessarily have his cooking done, take his food, and find his bed where his loom is, and with those who are loom-employed like himself. He is so compelled for many reasons; in one way, because of the breadth of window he requires; in another, in consequence of the noise which his shuttle and foot-treading make; and in another, through being wholly unable to pay as much as half-a-crown per week for his lodging, with something in addition for loom-room rent in another place.

In short, the location of a half-a-crown-a-week lodging-house in this neighbourhood, combined with the extensive character of these "chambers," has been a sad misapplication of judgment, as respects at least the present time; though, doubtlessly, when the new and wide thoroughfare passing across Whitechapel and along the front of Spitalfields church comes to be properly flanked with houses of the better order, then many of the clerks, porters, and other classes of the better paid than weaver workmen, may be expected to avail themselves of the advantages of these "chambers," while for the weaver himself, the chopper of fire-wood, lucifer-match maker, and the followers of other low-paid occupations, a less expensive and ostentatious mode of model lodging-house must be contrived, and as, indeed, is very much wanted,—a lodging which ought to be no higher than 1s. 6d. per week, and which, no doubt, at this rate, might be so built and conducted, as to prove equally remunerative to the now greater charges of 2s. 4d. and 2s. 6d. per week.

J. D. D.

THE CONDITION OF THE SPITALFIELDS WEAVERS.

IN the name of the Spitalfields weavers, I humbly beg to offer you our sincere and heartfelt thanks for the exposition of our miserable condition, contained in the leading article of your last week's journal. The few cases you noticed are undeniable and accurate, and though our trade abounds with similar instances, they were quite sufficient to show that the sufferings of the silk-weavers were no chimera. There are very few of the silk-weavers whose earnings from Christmas to Christmas, average 10s. per week; very few indeed: they have so many drawbacks, and loss of time waiting for their work, besides the low price they receive for their labour, that it is really astonishing how many of them live.

Sir, I can assure you, that the *Builder* is not quite a stranger even among the silk-weavers, and the zeal with which you advocate the interests of the working classes, and the improvement of their dwellings, is duly appreciated, and your services gratefully acknowledged by them. You, sir, kindly but truly stated that the weavers were mostly remarkable for intelligence: it is the more remarkable when considered how scanty are their means to obtain it. They really have no time to improve their morality or intelligence. Even the Sunday brings no Sabbath to many of them: they know no change but from the loom to the bed, and from the bed to the loom. The weavers are considered by many who are without the least knowledge of their real condition, as an ignorant, discontented set of people, always making a noise, and never satisfied.

These persons, sir, would do well to follow your example, by making a personal investigation; they would then be able to judge whether we have not sufficient cause for complaint. I think, sir, it would be difficult, if not impossible, in this country, to find a body of mechanics forced to toil so incessantly, and subsist in such penury as the silk weavers, and whatever will be the end of this state of things (which cannot last much longer), I am at a loss to imagine. Hundreds of the silk-weavers would be but too glad to transfer their labours to other channels of industry, did the opportunity but offer itself. I have long been trying to find other means of employment myself. I am now only thirty-one years of age, and feel strong and active enough for any work; yet being friendless, I have, like many others, failed in my endeavours. So I suppose we must struggle on in our hopeless condition a little longer, trusting to the hand of Providence to come to our rescue.

Sir, it is seldom the true state of the Spitalfields weavers is brought to public notice. The *Builder* of last week was eagerly sought for by them. I lent mine to several who could not purchase one for want of means, and they were all unanimous in giving you their thanks and heartfelt gratitude, for this and your former observation on the Spitalfields weaver.—I am, your very humble but grateful servant, F. M.

DISCOVERY OF A STONE AND LEAD COFFIN IN THE MINORIES.—In excavating foundations a little to the south of Holy Trinity Church, a stone chest with a cover fastened by iron clamps, and containing a leaden coffin, with human skeleton, was found by the workmen and broken open. An invitation to inspect the relic reached us on the morning of the day after that appointed, which may explain a remark in some of the newspapers as to no deputation from the Society of Antiquaries having been there. The coffin is attributed to the Roman era, though from the accounts of it given we should have thought it of more recent date.



CHURCH AT STRASBURG.

STRASBURG.

STRASBURG Cathedral is celebrated all over Europe, and there are other interesting specimens of Gothic architecture in the city. The reconstruction of the cathedral, after a fire, was commenced in 1177, but the works were so much delayed by dissensions, that the first stone of the western façade was not laid till 1277. The foundations for the tower were placed in 1776, under the superintendence of "Magister Erwinus de Steinbach." Steinbach's son succeeded him as architect, but the one spire, with its winding staircases, was not finished till 1439, when Jean Hültz, a native of Cologne, was the architect.

The accompanying engraving represents one of the churches in Strasburg, remarkable for the length of the three-light window in the transept. The church is simple in design, but is made effective and majestic by its height. In England we erect churches in the Pointed style less in height than ordinary dwelling-houses, and then attribute the defect to the style.

The early tower, with its beacon still remaining, adds to the picturesque effect of the pile.

THE NEWARK DYKE BRIDGE, ON THE GREAT NORTHERN RAILWAY.

At the institution of Civil Engineers, May 24th, "A Description of the Newark Dyke Bridge, on the Great Northern Railway," by Mr. J. Cubitt, was read.

This bridge, for carrying the railway across a navigable branch of the River Trent, near Newark, was described as being erected at a point where the line and the navigation intersect each other, at so acute an angle, that although the clear space, measured at right angles, between the abutments, was only 97 feet 6 inches, the actual span of the girders was 240 feet 6 inches.

The structure consists of two separate platforms, one for each line of rails, carried upon two pairs of Warren's trussed girders, each composed of a top tube strut, of cast-iron, opposing horizontal resistance to compression, and a bottom tie, of wrought-iron links, exerting tensile force; these is connected vertically, by alternate diagonal struts and ties, of cast and wrought iron respectively, dividing the length into a series of fourteen equilateral triangles, whose sides are 18 feet 6 inches long.

The top tubes rest upon the apices of equilateral, or A frames, fixed on the abutments, and each pair of girders are connected by a horizontal bracing, at the top and bottom, leaving a clear width of 13 feet for the passage of the trains.

Each tube is composed of twenty-nine cast-iron pipes, of $1\frac{1}{2}$ inch metal and $13\frac{1}{2}$ inches diameter at the abutment ends, increasing to 18 inches diameter with $2\frac{5}{8}$ inches metal at the centre of the span,—the ends of the pipes being accurately turned and fitted, so as to give exact contact of the surfaces, where they were connected together by bolts and nuts. The lower tie consists of wrought-iron links 8 feet 6 inches long, of the uniform width of 9 inches, but varying in number and thickness, according to the tensile strain to which each portion is subjected.

The diagonal tie-links vary from 9 inches by $\frac{1}{2}$ inch to 9 inches by $\frac{3}{4}$ inch, and, in order to accord with the relative strains, are distributed in groups of four, for the first three lengths from the ends, and then in couples for the next four lengths, on each side of the centre.

The links of the lower tie are supported, in the middle of each length, by a pair of wrought-iron rods, $1\frac{1}{2}$ inch diameter, suspended from each side of a joint pin traversing the top tube; and by means of nuts and washers they could be

made to bear a portion of the weight of the platform of the bridge.

The trusses are so arranged, that all the compressive strains are received by the cast iron, and all the tensible force is exerted by the wrought iron the proportions being such, that when the bridge was loaded with a weight equal to one ton per foot run, which considerably exceeded that of a train entirely composed of the heaviest locomotive engines used on the Great Northern Railway, no strain could exceed 5 tons per square inch of section.

The total weight of metal in each pair of girders, composing the bridge, is 244 tons 10 cwt. of which 138 tons 5 cwt. are cast iron, and 106 tons 5 cwt. wrought iron, which with 50 tons for the platform, &c. make the total weight of each bridge 294 tons 10 cwt. or 589 tons for the whole structure; and the cost, exclusive of the masonry of the abutments, and of the permanent rails, but including the staging for fixing and putting together and the expense of testing was 11,003*l.*

The proportions of the several parts of the structure were originally given by Mr. C. H. Wild, and have been only slightly modified by the author during the execution of the work.

A SUGGESTION IN GAS LIGHTING.

EVERY one who has had experience of rooms lighted with gas must be aware of the great heat produced by its combustion, and of the effect it has in diminishing the purity of the air, and therefore rendering it less fit for respiration. Now, I beg to propose, that in order to remedy these evils, each main gas-pipe should be accompanied by another, conveying air from the external atmosphere, ramifying with all the pipes, and discharging its contents by openings alongside of all those from which the inflammable gas issues. The proportion of oxygen in atmospheric air, and the relative proportions of hydrogen and oxygen uniting in the combustion of these gases, require that the atmospheric air tubes and orifices should be as 5, and the coal gas tubes and orifices as 2. If gas-pipes were fitted up in this manner, so that every burner should draw its supply of oxygen from the external air, and not from that of the room in which it is burned, the air of the latter would not be so much heated, nor so greatly diminished in purity. I offer these suggestions with great diffidence, and shall wait with anxiety for the opinions of architects on the subject. Before concluding, I beg to ask your chemical readers if there be any ground for believing that in the formation of mortar the lime combines with the silicious sand, thus forming a silicate of lime. Should chemical examination prove that this is the case, will it not more clearly explain the stony hardness acquired by good mortar, and ought it not to lead to the use of the finest silicious sand, when we are desirous to make mortar of the very best quality?

A RETIRED PHYSICIAN.

BUILDING NOTES IN IRELAND.

THE temporary platform over the Boyne has been satisfactorily tested. The works are progressing towards completion, and the government inspector has declared that the traffic of the line may be proceeded with. This being one of the most important lines in Ireland, and forming the link between the Metropolis and its principal commercial town, Belfast, the facility of communication attained by the advanced stage of this work cannot but be regarded as a great desideratum by the well-wishers of the country. The readers of the *Builder* are aware that in previous notices we have described, and carefully watched the progress of this immense structure, and we hail its present position (as suitable for traffic) as an event which will contribute in no ordinary manner to the better connection of the Irish and Scotch Metropolis.

A monument has been erected by the members of the Masonic Lodge, Downpatrick, to the late Mr. Ward, of Vianstown.

We are informed that the new R. C. Church at Landragee, has been opened for Divine Service, and its erection is mainly due to the exertions of the Rev. Edward Campbell. The position of the building is favourable, being situated on an eminence, in the centre of the town. The design is Early English, of plain character. At the western extremity is a tower of 100 feet in height (facing the main street). All the dressings of doors and windows—strings, corbels, &c. are of Dungannon sand-stone. Mr. J. R. McAuley, architect.

The new shipping quay at Dundalk, to which we alluded some time since, has been commenced.

Fair-street barracks, at Drogheda, have been purchased, and are to be converted into an archiepiscopal residence, for the new R. C. Primate, Dr. Dixon, as also into a building for educational purposes.

Two new school-houses are to be erected at Hilsborough, on the estate of the Marquis of Downshire, one at St. John's Church, Corcreeny, and the other at Cabra-bridge, Magheradartin.

The Ballynahinch Gas Company are about erecting extensive gas-works in the town.

IMPROVEMENTS AT SWYRE.

A SCHOOL-HOUSE and residence, together with a number of cottages for labourers, have been lately erected on the Duke of Bedford's property, at Swyre, in Dorsetshire. The cottages are built from the duke's own design; the school, if we understand rightly, by Mr. H. Barnes. His grace has lately communicated his plans to the transactions of the Royal Agricultural Society, for their journals. It has been the subject of remark in parliament, that the duke's benevolent anxiety to augment the comfort and self-respect of the labourer, by giving him a decent and convenient dwelling, with those appliances and advantages which may attach him to home, has induced him to build, on various parts of his extended property, a very considerable number of well-arranged cottage dwellings; and in no part of his estates, according to our informant, has more gratifying effect been produced than in the parish of Swyre, a sea-coast village near Bridport, where, until lately, for many years, no clergyman was resident, and the ordinary means of improvement in morals or religion were either wholly denied or supplied inadequately to the wants of the poorer population, whilst the exciting and hazardous practices of smuggling and poaching aided in no small degree to produce recklessness of character and idle habits. Thanks to the liberal manner in which the duke has provided means of instruction to the rising generation, and augmented all those comforts tending to promote prudent conduct, self-respect, and attachment to home for the lower orders, this parish has already, before twelve months have elapsed since the labours of an efficient schoolmaster commenced, begun to present a marked contrast to the former habits of the parents, and the wild and mischievous manners of the children now under the wholesome restraints of regular occupation, cleanliness, and decent appearance, and eager to profit by the instruction afforded.

ON THE OPENING OF THE CRYSTAL PALACE ON SUNDAY AFTERNOONS.

SEEING in your pages an article under this heading, signed, "An Old Boy," and taking it for granted that the *Builder* is what he represents it to be, viz. "an impartial host," I take the liberty of offering a few remarks on the above subject. In the first place, as one of the English mechanics referred to, I at once fling back with contempt the *degrading* assertion "that the English mechanics have no means of giving a wholesome change and impulse to their thoughts, but fly to beer, and are literally compelled to put an enemy into their mouths to steal away their brains." It is as degrading as untrue. Your correspondent refers to what he is pleased to style "a strange act,"—that of petitioning Parliament to keep closed on Sundays what he is pleased to call the region of *wholesome instruction* and *rational amusement*, against the hard-worked population of this immense city. Perhaps he will be kind enough to inform us whether the thousands of cab and omnibus men (of whom upwards of 2,000 have signed petitions against the opening of the said Palace on Sundays), with the other thousands employed on railways and steamboats on Sundays, are included amongst the hard-worked population referred to? If so, upon what principle of common honesty to those men, their wives and their little ones, does he ask that they be compelled to toil on the Sunday, in order that he and others of the pleasure-loving thousands may be gratified?

Your correspondent speaks of this country as being "not free from cant." What is cant? Is it cant for a man to ask for social freedom who would refuse it to others? Is it cant for a man to assert "that the masses are denied the legitimate enjoyments of a day of repose, and that they indulge in gross and demoralizing pastimes," while he himself would debar *thousands* of the *masses* from the *truly* legitimate enjoyment of spending one day in seven in the company and bosom of their own families? The voice of the public is loud against the opening, there having been near 120,000 signatures against it, and about 17,000 for it. May every man who would advocate social enjoyments sign the petition against any encroachments on the rights of the working classes.

A LAMBETH POTTER.

Notices of Books.

Scientific Dialogues for Young People. By the Rev. JEREMIAH JOYCE; with Corrections and Improvements by Dr. OLINTHUS GREGORY. A new edition, containing additions. By CHARLES V. WALKER. London: Longman and Co. &c. 1853.

JOYCE'S "Scientific Dialogues" has long been a standard work in its way, for the instruction and amusement of the young. The name of Olinthus Gregory itself was a password to public favour. In this edition Mr. Walker appears to have welded new matter with the old dialogues very neatly, and has added many fresh points of progress to the compendium, which is illustrated with several new engravings on wood.

Reports and Papers read at the Meetings of the Architectural Societies of the Archdeaconry of Northampton, the Counties of York and Lincoln, and of the Architectural and Archæological Society of the County of Bedford, during the Year 1852. Masters, Aldersgate-street, London, &c.

BESIDES the reports of the several societies named, this volume contains the following papers, &c. read before the Northampton Architectural Society:—On the Church of St. Sepulchre's Northampton, with especial reference to the restoration of the Round, by George Ayliffe Poole, M.A.; a Synchronological Table of the Bishops of the English Sees, from 1050 to 1550, by the same author. The following read before the Yorkshire Architectural Society:—On the History of Church Arrangement, by W. H. Dykes; on the Recent Excavations of Sawley Abbey, in Yorkshire, by J. R. Walbran; and a Historic Sketch of Pontefract Castle, by R. E. Batty, M.A. The following read before the Lincolnshire Architectural Society:—On Churchyard Monuments, by M. B. Bloxam; on Heckington Church, by G. G. Place; on Open Seats, by F. P. Lowe; on Sleaford, Sempringham, and other churches, by C. Kirk, B.A.; and on the Abbey of St. Marie, at Thornton, on the Humber, by F. P. Lowe. And the following read before the Bedfordshire Architectural Society:—On Tradesmen's Tokens, by Captain W. H. Smyth, R.N. F.R.S. &c.; on the Moral and Intellectual Expression of Architecture, by J. Taddy, M.A.; and on Samaritan Coins or Hebrew Coins, by H. J. Rose, B.D. Notices of some of the papers have appeared in our pages. The volume is illustrated by many rough sketches, plans, &c.

The Encyclopædia Britannica, or Dictionary of Arts, Sciences, and Miscellaneous Literature. Eighth edition, greatly improved and brought up to the present time. Edited by THOMAS STEWART TRAILL, M.D. F.R.S.E. Professor of Medical Jurisprudence in the University of Edinburgh. Adam and Charles Black, London and Edinburgh. 1853. Vol. I.

WE have already, in noticing the new issue of the first of its celebrated dissertations, recommended this valuable work to the favourable notice of our readers, though it needs no special commendation from us. In the first volume we have dissertations first and second,—on the Progress of Metaphysical and Ethical Philosophy, by Dugald Stewart, and the Right Hon. Sir James Mackintosh, L.L.D. &c.; with an Introduction by W. Whewell, D.D. Professor

of Moral Philosophy in the University of Cambridge: also dissertations fourth and fifth,—On the Progress of Mathematical and Physical Sciences, by Professors Playfair and Sir John Leslie: and a new dissertation On the Rise, Progress, and Corruptions of Christianity, by Richard Whately, D.D. Archbishop of Dublin. From these introductory treatises, and from a specimen of the body of the work, containing both letter-press and engravings, which is also before us, it would appear that the new work, besides its additions and corrections, will rival its predecessor, the seventh edition, in other respects as well. The "Encyclopædia Britannica" is a work for all, and for none more especially than for those who are interested in art and science in any or all of its branches.

We understand that the articles on Architecture and Building are to be rewritten by Mr. Hosking, with the view of bringing their information up to that of the present day.

Murray's Railway Reading.

AMONGST recent issues of these pleasant volumes, in their fiery-red wrappers, are, the Life of Lord Bacon, by Lord Campbell, which will serve out a pretty long run, having twice as much matter in it as usual; Wellington, his Character, his Actions, and his Writings, by Jules Maurel,—interesting as a Frenchman's idea of the old soldier, and containing a short preface by the Earl of Ellesmere; and a Month in Norway, by John G. Holloway—which will draw a little more attention to this less hackneyed route for tourists than heretofore.

Miscellanea.

CURIOUS MECHANICAL INVENTION.—A mechanic of Liverpool, Mr. John Craig (by trade, we believe, a cabinetmaker), according to a Liverpool paper, has invented a machine for raising weights, which he deems analogous, in construction, to the appliances adopted by the builders of the Egyptian pyramids. Mr. Craig did not feel bound to explain the principle and mode of action of his invention. By means of a model a small weight was made to raise and sustain another of five times the size. The apparatus is capable of being applied to the steam-engine, and with such success that twenty horse-power of steam and fuel would be equal to one hundred horse under present circumstances? "With this machine," said Mr. Craig, "a small chain, capable of bearing six cwt. and a small winch to give the first motion, I could raise five tons." We are informed, adds our authority, that there is not a wheel or block about the apparatus, and that the power is not gained by any modification of the lever.

STRANGERS' HOMES.—A shilling pamphlet, by J. D. Devlin, a working man, has just been published by Messrs. Saunders and Stanford, of Charing Cross, with a title which describes its objects, and which we therefore give in full,—namely,—"Strangers' Homes; or the Model Lodging-houses of London described, and recommended as an example of what ought to be done, at home and abroad, for the stranger workseeker in general, but especially as regards the humbler class of emigrants. By one who has been both an Emigrant and a Model Lodger." We have read the essay with much interest. As a graphic picture of model-lodging-house life, by a model lodger, and of humble emigrant and immigrant requirements, by one who has personally experienced them, this little treatise is valuable as well as interesting; and without accordance with every opinion expressed or suggestion made, we think it worthy of perusal by all who are interested either in the emigration of the poorer classes, or in providing comfortable homes for them or indeed for wayfaring strangers of the working classes in general, whether intending emigrants or not. We would also recommend it as interesting to the working classes generally; and to all who take an active part in the erection of model or other dwellings for them, as embodying the expanding ideas and the grateful feelings of those whom the latter thus so greatly benefit, and among these we should think there are few who more warmly appreciate their motives and exertions than J. D. Devlin, working shoemaker.

RAPID FILTER.—A patent has just been sealed for the invention, by Mr. Bardwell, of a rapid filter for large bodies of water and sewage, through which filter, liquids, it is stated, will pass nearly as quickly as they run in. The patentee proposes to place such filters at or near the mouths of the great sewers, connecting the smaller sewers therewith, and thus he expects to see the Thames completely free from pollution, and as pure and silvery as in the days of Sir Philip Sydney.

TELEGRAPHIC PROGRESS.—The Magnetic Telegraph Company effected their communication between this country and Ireland on Monday week, when their new cable between Donaghadee and Portpatrick was successfully laid down.——The prospectus has been issued of an association, under the title of the Mediterranean Electric Telegraph Company, formed with the object of uniting Europe with Africa, the East Indies, and Australia, by way of France, Piedmont, Corsica, Sardinia, Algeria, and Egypt. The route is said to have been carefully surveyed. The company are making arrangements for the construction of a subterranean line along the coast of Africa, from Algeria to Alexandria; and with the aid of the British Government and the East India Company, the wires may be prolonged across the Desert, the Red Sea, Arabia, and Persia, to meet the great Indian line of 3,000 miles, now in course of construction by the East India Company, and which may eventually be extended to the Australian colonies. The capital is 300,000*l.* in 30,000 shares, of 10*l.* each, deposit 4*l.* per share. The Government of France is said to have guaranteed interest on 180,000*l.* and that of Sardinia on 120,000*l.* A contract has been entered into for the complete execution of the works from Spezzia to Tunis, including all preliminary expenses, and a transfer of the concessions, with exclusive privilege for fifty years, for the sum of 300,000*l.* the amount on which interest has been guaranteed. The works are said to be already in active progress in Sardinia.——In a lecture delivered at Belfast a few weeks ago, Mr. J. B. Lindsay said that he had recently instituted a series of experiments with the view of testing an idea that he had formed some fifteen years ago,—that no submarine wires are necessary for the transmission of electricity. In explanation of this principle, he said, "Suppose a wire connected with the copper end of the battery to be let down to the shore, and connected with a sheet of metal laid in the river. Suppose a wire from the zinc end taken to Broughty Ferry, and soldered to a metallic plate placed also in the river. Suppose similar plates laid in the river on the Fife side, at Newport and South Ferry, and these joined by a wire having in its course one or more telegraphs. Suppose now that a charge of electricity is sent through the wire on the Dundee side, this current may make its circuit from the copper to the zinc either by leaping four miles through the water from Broughty Ferry to Dundee, or by a leap of two miles across the river to the other wire at South Ferry, and another leap of two miles from Newport to Dundee. In such a case, I have found that part of the electricity does not go across, and *part of it does*; but the part of it that does go across is sufficient to work one or ten thousand telegraphs." The possibility of this we long since noted.

REVOLVING SHUTTERS.—The shutter referred to by your correspondent, "J. F." at Limerick, 45 feet long, is not so long by 6 feet as one erected by us at Water-lane, Blackfriars, three years since,—passing round a corner, rolling in a space of 20 inches diameter, and opened and closed in 1½ minute: we would have no hesitation in constructing a shutter 100 or even 200 feet long on this principle. The great difficulty is to make revolving shutters with horizontal laths of great width in one piece, as the shaft or roller can have no centre support. The shutter referred to in Fleet-street is 24 feet wide and 18 feet high, in one piece, and is opened or closed with ease in 30 seconds. We have recently obtained a patent for some important improvements,—first the combining iron and wood in their construction, whereby great stiffness and lightness is obtained,—qualities, obviously of great importance; also for curving the laths of metal shutters in such a form that the joint, or hinge, is formed in the solid, greatly increasing the strength and appearance, and permitting them to be rolled in either direction, greatly facilitating their application.—CLARK and CO.

THE CHILLIANWALLAH MONUMENT.—We have been favoured, says the *Portsmouth Times*, with a memorandum from a friend encamped near the battlefield of 1849, that enables us to present our readers with the following particulars of this most interesting monument. The Pillar, which has been built of grey sandstone, quarried from the neighbouring hills beyond the Jelum, rises about 70 feet above the mound, and 120 above the plain. The stonemasonry has been beautifully executed by Sikh stone-cutters, and the whole appearance of the edifice, from far and near, is elegant and appropriate. An inscription is now being cut on one face of the obelisk by two soldiers of her Majesty's 24th Foot. A translation of this in Persian and Goormookee might, with much propriety, be added to the other sides, but there are not, we fear, sufficient funds left to meet the additional expense. If funds were forthcoming, the names of all officers who fell in the action might be engraved on the shaft of the obelisk; and it is only the want of money that prevents this being done.

ARCHITECTURAL MEETING AT BANBURY.—Joint meetings of the architectural societies of Oxfordshire, Bedfordshire, Buckinghamshire, Warwickshire, and the archdeaconry of Northampton, were held at Banbury on Tuesday and Wednesday in last week. On Tuesday an excursion party visited Bloxham, Adderbury, Kingsutton, Warkworth, and Middleton. The first meeting was held at the mechanics' institute, when the vicar of Banbury was called to the chair, and the Rev. Lord Alwyne Compton read a paper on Compton Winyates; the Rev. H. Williams, vicar of Kempston, Beds, one on Druidical Remains; and the Rev. John Taddy, rector of Northill, Bede, one on the Roman and Saxon Remains lately disinterred at Sandy, Beds, and some remarks on the Roman Settlements in Britain. An evening meeting was also held at the Mechanics' Institute, and was more numerously attended than the morning meeting. Lord Alwyne Compton presided. The sitting was occupied by the reading of a paper by Sir Henry Dryden, bart. "On Church Arrangement, with reference to Church Music." On Wednesday, the excursion was to Broughton, where both the church and the castle (the latter open to visitors by permission of Lord Say and Sele) were objects of interest; thence to Swalcliffe, and on to Compton Winyates. Here a large party assembled, and after thoroughly examining the building, were hospitably entertained with luncheon. The excursionists returned by Tysoe and Wroxton Abbey. At nine o'clock the concluding meeting was held at the Mechanics' Institute. Rev. G. M. Nelson was called to the chair. Mr. E. A. Freeman read a paper "On the Three-fold Division of the Ground Plan in Churches." Mr. Faulkner made a few observations on the importance of preserving monumental brasses, which, with gravestones, he remarked, were, in early times, the only records of pedigrees. As an instance, he mentioned that a solicitor of Banbury had not long ago worked out through gravestones and parish registers, the title of a poor man to property of considerable amount. Several interesting relics, brought by visitors, were on view during Tuesday, at the White Lion. The *Banbury Guardian* gives a pretty full report of the meeting.

A NEW PERCUSSION CARTRIDGE FOR BLASTING.—Capt. Norton has invented a blasting-cartridge which, it is said, can be used in blasting rocks under water, but the main purpose of the invention of which is the shattering and destroying of forest trees in wild countries or in bogs, the removal of blocks of ice impeding navigation, &c. The *modus operandi*, as applied to trees at Cork, is as follows:—A triangle is made of three larch spars placed over the root to be blasted, a hole being bored by an auger into the root; a gouge rimer after the auger clears away the rough interior, and admits the cartridge freely. About 3 inches deeper than the centre, a plug of iron 1½ inch long, or a small round stone, is forced into the bottom of the hole, so as to prove a *solid* foundation. The cartridge, with a percussion cap on each end of its steel pillar, is then dropped in, and rests on the iron foundation. A rammer of iron, about 4 inches longer than the depth of the hole, is then inserted. A block of wood, about sixty pounds weight, suspended by a strong cord vertically over the projecting head of the rammer is then allowed to fall on it, when, by the momentum or blow, the explosion takes place. The charge in these cartridges is about an ounce of Hall's powder; and it is said to be probable that the fourth part of the powder used in the present manner of blasting will be found by this method to be sufficient.

ARCHITECTURAL ILLUSTRATIONS.—The *Athenæum* says,—"We are informed that a rather extensive collection of drawings and illustrations of mediæval architectural works is now offered for disposal at Leipsig. The collector is Dr. Puttrich, author of 'The Architectural Monuments of Saxony,' and who has been for forty years bringing them together. The collection amounts to nearly one thousand water-colour drawings, by Dorst, E. Gerhardt, J. Goldstein, Haach, M. Hauschild, Al. Hermann, E. Kirchner, Loeillot, H. Steenwyk, H. Nicolaj, C. Patzschke, G. Pozzi, Pulian, Domen, Quaglio, Rossbach, Rothbart, C. Sprosse, Thürmer, Vermeersch, G. and O. Wagner, C. Werner, Wilder, and others, as well as of nearly three thousand copper-plate engravings, lithographic prints, woodcuts, &c. taken from similar works of art; a portion having been prepared for the work, 'Architectural Monuments of Saxony.'"

VENTILATION OF THE HOUSE OF COMMONS.—Sir,—In a paragraph in your last impression you say the ventilation of the House of Commons is under Mr. Wilson, this I shall be obliged by your correcting. It is, as well as the whole of the other portions of the palace, placed under my charge by the Office of Works. The defects, whatever they be, of the House of Commons, must rest on the arrangements which I have been required to adopt, without having had given to me the opportunity, as yet, of making my own.—ALFRED MEESON.

RAILWAY MATTERS.—In singular accordance with all we have maintained for years in regard to the trim of trains in transit, and the question of communication between guards, passengers, and drivers, Mr. Wyndham Harding, the well-known civil engineer, and railway secretary, has addressed a letter to the *Times*, in which he gives it as his opinion that the attempt to communicate between the guard and driver by means of wires or tubes linked or coupled to each other, is, as he has found in practice, a mockery, a delusion, and a snare; and that there is only one safe and rational way of communicating between guards and drivers—namely, that along every train, without exception, the guards should be able to make their way to the engine, so as to make personal communication to the driver. This is to be accomplished by safe handfasts, holdfasts for the feet, and by lengthening the foot-boards. The same means of course would enable the guards to communicate personally and directly with the passengers in every carriage.——We used also to maintain, that till directors were made personally responsible, none of these and other necessary improvements were likely ever to be carried out, but we scarcely anticipated that by this time directors *would* be made responsible. Three directors of the York and North Midland have actually been arrested on a charge of manslaughter; and still more recently, a verdict of manslaughter has been given against the chairman of the South-Western,—a most severe verdict, considering that,—as not many weeks back, the *Times* approvingly remarked,—this South-Western line is the only one on which the lives of the public have been really held sacred, or anything like safety assured to them.——The London and Brighton Company have commenced a long-desiderated improvement in second-class carriages. Some new ones have been provided with cushions covered with leather, and in some cases the backs of the seats are padded. As old carriages go in for repairs, this change will be made in the seats and backs. The company have also added superior third-class carriages to their stock: they are covered in, and divided in the centre; so that some protection will be afforded against heat, wind, and rain.——It should be noted in respect to possible causes of accidents, that extreme cold will so far contract the rails of a railway as to leave wide gaps between each rail, so that there is more jolting and jarring on railways in winter than in summer. Again, if in summer allowance were not made for expansion, the rails would bulge each other out, and also thus endanger the line.

LODGING-HOUSE LEGISLATION. — The Common Lodging-houses Bill passed through committee in the House of Lords last week, on a motion by Lord Shaftesbury, and was ordered to be reported on Monday thereafter. In reference to this subject a correspondent suggests the appointment of salaried inspectors, to be elected by the various town parishes, with summary power to enter dwellings rated at less than 20*l.* a year, and to report on nuisances or sanitary defects, and by subsequent procedure before the magistrates to cause the same to be remedied. While moving the recommittal of the Bill, Lord Shaftesbury stated that from all parts of the country he had received concurrent testimony as to the beneficial operation of the existing Act. At present there were no less than 80,000 persons living in houses registered under the Bill, and in the course of two months from the present time there would be 20,000 more. In the houses so registered would be found order, decency, and cleanliness, where before existed nothing but filth, disorder, and indecency. He could adduce the testimony of many foreigners, more especially of Americans, who had been perfectly astonished at the change which had taken place in the habits and condition of the people in consequence of the operation of this Act.

CORROSION OF IRON RAILINGS.—A correspondent, "J. H. T." recalls attention to the decay of iron railings where they are fixed with lead, and recommends that the lead be shaped so as to prevent any lodgement of water as is frequently the case where the lead and the iron are united. No doubt in some cases the corrosion might be thus hindered, but it often proceeds where no water can lodge: whether this be from the mere moisture in the air, or whether the action be thermo-electric more than galvanic, and do not even require moisture, does not very clearly appear. It would be worth while to institute some little series of experiments in order to settle the question.

METROPOLITAN WATER SUPPLY.—The Select Parliamentary Committee on the Supply of Water to the Metropolis, after discussing the subject of "A Bill for the better Supplying with Water certain parts of the Western District of the Metropolis, in the county of Middlesex, to be carried out by a company called the West London Waterworks Company," have decided that the preamble has not been proved, consequently, for the present session, the Bill is lost.

HARBOURS OF REFUGE.—A statistical return of the works now carrying on at sundry harbours of refuge in Great Britain has been published. From this return it appears that works for the greater safety and efficiency of such harbours are being carried on at Dover, Harwich, Alderney, Jersey, and Portland. For Dover the total estimate was 245,000*l.*; the total amount voted is 176,000*l.* The vote required for 1853-54 amounts to 34,000*l.* and about 35,000*l.* will afterwards be required to complete the works. The total estimate for Harwich is 110,000*l.* the whole of which has been voted. Alderney stands thus:—total estimate, 620,000*l.*; amount voted, 245,000*l.*; vote for 1853-54, 62,000*l.*; votes required for completion, 313,000*l.* Jersey.—total estimates, 700,000*l.*; amount voted, 222,000*l.*; vote for 1853-54, 40,000*l.*; votes required for completion, 438,000*l.* Portland harbour and breakwater—total estimate, 588,959*l.*; amount voted, 275,000*l.*; vote for 1853-54, 90,000*l.*; and the sum required to complete the works amounts to 223,959*l.*

REPORT ON THE GREAT LONDON DRAINAGE COMPANY.—Messrs. Bazalgette and Haywood, for the Metropolitan Commission and the City Commission of Sewers respectively, have reported to their Boards, in a joint report, on the scheme of the Great London Drainage Company. The conclusions of this report are, on the whole, unfavourable to the scheme as proposed. It would greatly interfere, it is said, with the powers and proceedings of the sewers commissions, unless considerable and stringent alterations be made not only for reservation and recognition of these powers, but also for superintending authority on the part of the commissions over the proceedings of the company. In their Bill as it stands there is really no strict prohibition from turning either the sewage or the flood water into the Thames, and although the purpose of the company is to convert the sewage into solid manure, they may do this at one period throughout the year and at another allow it all as heretofore, to flow into the river. The reporters consider that the question as to the actual and permanent practical value of the manure prepared and sold from sewage ought first to be definitely settled and ascertained before any great work is gone into on the faith of its saleable or remunerative value; and that neither the Sewage Manure Company's doings in liquid manure nor Mr. Moffatt's in solid manure have settled this question; but that experiments now being gone into at Leicester by Mr. Wicksteed, the engineer, who was himself connected with one of the proposed metropolitan sewerage companies, will shortly decide this question in one way or other. The subject altogether is viewed as a complex one, and as such it is treated, so that within our limits we cannot fully go over all the objections and the precautionary recommendations of the reporters, and must refer all further interested to the report itself.

LOSS OF LIVES BY FALL OF A WALL AT GLASGOW.—In course of alterations and additions at the Glasgow Gas Company's works at Townhead, some walls were being razed, and one of them suddenly fell on the assistant manager and three labourers, all of whom were killed. Two other labourers, though buried also under the ruins, were not even seriously hurt.

POINTING STONE WALLS.—I wish, Mr. Editor, you would raise your voice against the unscientific mode of pointing *stone* walls in Exeter and the neighbourhood. "Tuck and point," as square and prim as any new piece of citizen's brick-box, projecting nearly a quarter of an inch from the face of the work, is the mode adopted; and if the natural joints of the work are not straight, no matter,—the pointing squares it all up!! I am amazed that architects should sanction such doings.—CLERICUS.

THE BRADFORD PEEL MONUMENT. — The committee of the subscribers to this monument met on Wednesday last, and decided that the monument shall consist of a bronze statue of the deceased statesman, by Mr. Behnes. The cost is to be 1,000 guineas. The second prize has been awarded to Mr. Foley, and the third premium to Mr. Thos. Milnes.

SUFFOLK INSTITUTE OF ARCHÆOLOGY.—A general meeting is to be held on Friday, the 17th of June, to inspect Hawstead Church; Hawstead-place, the remains of the seat of the Drurys; and Hardwicke House, the seat of the Rev. Sir T. G. Cullum, bart. who will kindly open his house on the occasion, at two o'clock. Papers will be read at each of these places.

THE KILKENNY AND SOUTH-EAST OF IRELAND ARCHÆOLOGICAL SOCIETY.—The May meeting of this society was held on Wednesday, in week before last, at Kilkenny, the Rev. Dr. Browne, of Kilkenny College, in the chair, when a number of new members were admitted, and the printed transactions of the society for 1851 were laid on the table, and various papers were read, among which were a description, by the Rev. James Graves, of a sepulchral tumulus discovered in Queen's County; a paper on Folk Lore, by Mr. Hackett, of Middleton; one on the ancient cross of Banagher, in King's County, by Mr. T. L. Cooke, of Parson's-town; on the disputed monument in the Abbey of Holy Cross, by the Rev. A. B. Rowan, of Belmont, Tralee; and on ancient dials, by the Rev. James Mease. Of most of these papers reports are given in the *Kilkenny Moderator*.

PROGRESS OF BUILDING, &C. NEAR MANCHESTER.—Lord Stamford has sold, in Ashton-under-Lyne (during the last ten months), upwards of fifty statute acres of building land, on chief rents, varying from 2d. to 2½d. per square yard. The building trades generally were never known to be so brisk throughout the manufacturing districts as at present. The only check to works is the difficulty of dealing with the men. Wages to artisans have risen within the last six months, 6d. to 1s. per day. One contractor having extensive works in hand, states that he must lose some 8,000*l.* or 10,000*l.* if the present high rates of wages continue.

NEW CHURCH AT GRAVESEND.—A new church has been erected for the district of Rosherville, in the parish of Gravesend, and was to be consecrated by the Bishop of Rochester on the 2nd inst.

WILD ESTIMATES.—Please insert the following tenders for a Portland-stone monument to the memory of Mr. John Rogers,—Mr. May, architect; viz.:—

Johnson	£158 0 0
Suller	110 0 0
Yew	99 0 0
Myers	96 0 0
Mallcott	83 10 0
Bowers	68 0 0
Young (accepted)	56 0 0

A COMPETITOR.

I BEG you will insert the lists of Tenders delivered for erection of "Church for Ragged Poor of the Spitalfields' District;" Mr. Harrison, architect. Quantities not supplied:—

				If part faced with Kentish Rag-stone.		
Brown	£849	0	0	£869	0	0
Perry	757	0	0			
Smith	749	0	0	770	0	0
Tolley	609	10	0	634	10	0
Clever	499	16	0	474	19	0

—J.

A SLIGHT DIFFERENCE.—Tenders for building two semi-detached cottages at Highbury-hill: Mr. Henry Matthews, architect:—

Brass and Son	£2,368	0	0
Glenn	2,128	0	0
Parry and Son	1,857	0	0
Rowland and Evans	1,472	0	0

TENDERS.

For a new Medical College at the London Hospital, and for alterations, &c. at the present hospital. Mr. Mason, architect.

Ashby and Horner	£18,100 0 0
Piper	17,965 0 0
Cubitt	17,795 0 0
Hill	16,572 0 0
Nesham	16,541 0 0
Lucas	16,316 0 0
Little	16,060 0 0
Myers	15,601 0 0

For the Bristol General Hospital. Mr. W. B. Gingell, architect. Quantities not supplied.

EXCAVATOR, MASON, AND BRICKLAYER.

Willcox and Sons	£9,388 0 0
J. N. Brown	9,180 0 0
G. N. Strawbridge (accepted)	9,080 0 0

CARPENTER AND JOINER.

H. E. Hamlen	£4,120 0 0
J. and J. Foster	3,990 0 0
S. Bowden (accepted)	3,806 0 0
A. Maggs	3,660 0 0

For house at Maiden-lane for Mr. John Atchelor. Quantities furnished.

Deverell	£1,547 0 0!
Chapman	1,535 0 0
Glenn	1,495 0 0
Thompson	1,365 0 0
Day	1,220 0 0
Cooper	1,148 0 0
Brake	900 0 0!

TO CORRESPONDENTS.

"Power of Water.—Will any of your readers inform me the motive power of a stream of water running 180 gallons per minute over a fall of 20 feet? It is not practicable to make a reservoir only sufficient to collect the water which flows in small streams out of a hollow rock of stone in a situation where to dam would lose the water unless a very considerable expense was incurred.—W." "S. W. B." "W. P. G." "A. S." "H. B." "J. L." "J. A. P." (paper mentioned did not reach us), "C. J. P." "H. B." "J. C." (shall have attention), "R. W." "J. D. L." "T. C." (under our mark), "B. B." (ditto), "W. W." "A. T." "E. P." "Zinc Paint" (a number of letters have been received and will have consideration), "M. X. M." "C. J. C." (shall have them), "H. G." "Another Architect" "W. R." "J. D. L." "A Brother," "H. D." "G. J." (shall have attention), "L. S. and W." "Competitor."

"Books and Addresses."—We have not time to point out books or find addresses.

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FREEHOLD BUILDING LAND, near the Crystal Palace, Norwood, TO BE SOLD or LET on Lease, for 1,000, with option of purchasing the Freehold. M. ney advanced, if required.—Apply personally at Messrs. BLAKE and SNOW'S Offices, 23, College-hill, London. No letters will be attended to.

FREEHOLD LAND at HARROW-ON-THE-HILL, WIMBLEDON, and CHERTSEY, TO BE SOLD or LET on Lease, for a term of 1,000, with option of purchasing the Freehold. Money advanced, if required. Apply personally at the Offices of Messrs. BLAKE and SNOW, 23, College-hill, London. No letters will be attended to.

FREEHOLD LAND TO BE LET or SOLD, eligible for building purposes, with good Brick Earth, at Starch-green, Shepherd's-bush; Land to be Let on Lease, for 99 years, at Kilburn-park; Freehold Land to be Let, in perpetuity or the Freehold to be Sold, at Pebble hill, Betchworth, Surrey, one mile from the station; Land suitable for Building Purposes to be Let, at Wimbledon-park; Westbourne-park, Paddington; Ipswich; Bowcourt New Town, near Harwich; Reigate, Surrey; and Pinchley. A desirable Freehold Farm to be Sold, known as Farneyhurst Farm, Isle of Wight, having a frontage on the high road from West Cowes to Newport, suitable for building purposes. —For particulars, apply to Mr. W. H. LINDSEY, Architect, 40a, Queen-square, Bloomsbury.

FREEHOLD LAND.—TO BE LET, on Building Leases, several PLOTS of LAND, situate at Woodgreen, a short distance from the Hornsey station of the Great Northern Railway. —For terms and conditions, apply to J. J. HUBBARD, Esq. 18, Bucklersbury, or Mr. D. S. RECKNELL, 15 Harp-lane, City.

TO BE LET, on BUILDING LEASE, a most valuable plot of FREEHOLD BUILDING GROUND, with a frontage of about 140 feet, facing the main road, Brixton-hill, for the erection of houses with shops, which are in great request, and easily sell or let. Also wanted either to rent or purchase several new houses, intended for public-houses; if in an unfinished state not objected to.—Likewise, WANTED TO PURCHASE, TWO IRON TANKS, that will contain from 40 to 50 barrels each.—Apply, by letter, to A. A. 10, Clapham-park-terrace, Clapham.

TO BUILDERS AND OTHERS.

HAMPSTEAD.—BELSIZE-PARK.—TO BE LET, in plots, on building leases, the above ESTATE, situate in the most picturesque spot near London, approached from the Finchley-road, near the Swiss Cottage, and from the Hampstead-road through the well-known avenue of stately elms, and bounded on the north by Belsize-lane. The situation is without equal for the erection of gentlemen's villas. Roads and main sewers will be formed through the estate at the expense of the proprietor, and a large church is about to be erected in the centre of the property. Builders can be accommodated with money.—Apply to Mr. C. J. RICHARDSON, Architect and Surveyor, 2, Keppel-street, Russell-square

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 25, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate

NEAR STRATFORD, on the Romford Road.—TO BE LET, upon Building Leases, FREEHOLD GROUND, in a most respectable neighbourhood, with very pleasing park-scenery: land-tax redeemed. Also, other Freehold Ground, in the immediate vicinity of the station, suitable for smaller houses or shops.—For particulars, apply to Mr. FRANCIS POUGET, Architect and Surveyor, 41, Gracechurch-street, or Grove Lodge, Tottenham.

TO BUILDERS AND OTHERS.

FOREST-HILL, SYDENHAM.—BUILDING GROUND TO BE LET, at the upper part of Forest-hill, within three minutes' walk of the railway station.—The plans and particulars of which may be seen at the Office of Mr. AITCHISON, Muscovy-court, Trinity-square, Tower-hill.

TOLLINGTON-PARK.—BUILDING LAND, as laid out for Thirteen Houses, fronting Tollington park-road, and the New Church of Saint Mark, TO BE SOLD or LET on LEASE (direct from the Freeholder), for 99 years, with immediate possession. Also, TO BE LET on LEASE, for 99 years, direct from the Freeholder, 200 feet of valuable BUILDING LAND, fronting the Hornsey-road.—For plans and particulars, apply to Mr. GOUGH, Architect, Tollington-park, or 10, Lancaster-place, Strand.

SPRING GROVE, for many years so justly celebrated for its salubrious air, the beauty of its well-timbered grounds, and the excellence of the water, from which the name is derived, is about eight miles from town on the Isleworth high road, and close to the Isleworth Station, on the South-Western Railway, whence trains run to Waterloo every hour throughout the day. The soil is pure gravel, and the ground well elevated. The sewers and roads have been made at great expense, so as to secure perfect drainage, and a sound dry road in every season. Persons desirous of selecting a site for the erection of a house, are invited to look at this estate, as the variety of the different sites, and the various advantages they offer for a few select and re-sponsible villa residences, will be better appreciated on a personal inspection than by any other means.—Apply either at the Office on the Estate, or to Mr. JOHN TAYLOR, 22, Parliament-street, Westminster; at either of which places plans may be seen, and every information obtained.

SPRING GROVE.—TO BUILDERS AND OTHERS.—Plots of FREEHOLD LAND TO BE LET on building leases; term, 99 years. Bricks delivered on the ground at a moderate fixed price, and every other facility given to builders of character and respectability.—Plans may be seen either at the Office on the Estate, adjoining the Isleworth Station of the South-Western Railway; or on application to Mr. JOHN TAYLOR, 22, Parliament-street, Westminster.

BARNES, SURREY.—TO BE LET on Building Leases, a considerable extent of the Frontage next the High-road leading from Hammersmith Suspension Bridge to Barnes.—For particulars apply at the offices of Messrs. WIGG, POWNALL, and WIGG, 7, Bedford-row.

NORWOOD, CROYDON, CHERTSEY, ACTON-LANE, NORTH WOOLWICH, near the Victoria Docks, and HOMERTON.—BUILDING GROUND TO BE LET, at NORWOOD within three minutes' walk of the Jolly Sailor (Norwood) Station, and little more than a mile of the Crystal Palace, commanding equally magnificent views with the Palace, having frontages from 20 feet and upwards, by depth varying from 150 feet to 200 feet and upwards, and an extreme width at the rear of more than double the frontage; the water of the South Lambeth Company laid on to the houses now erecting. Also at THORNTON HEATH, Croydon, within three-quarters of a mile of the Croydon Station. Also in ACTON-LANE, Middlesex, within five minutes' walk of the station. Also at HALLSVILLE, North Woolwich, close to the New Victoria Docks and the Railway station; and also at HOMERTON. At the three latter places small houses are required, and are usually let before completed. —For further particulars, apply to WILLIAM FRANCIS LOW, Esq. Solicitor, 67, Wimpole-street, Cavendish-square.

BUILDING LAND TO LET, AT

CROYDON,	WINDSOR,
BRIXTON,	SLOUGH,
BLACKHEATH,	EDMONTON,
GREENWICH,	NORTHUMBERLAND PARK,
DEPTFORD,	TOTTENHAM,
CAMBERWELL,	IFORD, ESSEX,
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Advances made on most, and bricks are on some of the above estates, which are nearly all adjoining Railway Stations. Covenants are apportioned.—Apply to Mr. WILLIAM WALLEN, Jun. 20, Laurence-pountney-lane, Cannon-street, City.

BUILDING LAND TO BE LET, at SUDBURY, on the North-Western Railway, one mile from the Station, and a mile-and-a-half from Harrow School, with the privilege of placing scholars on the foundation. Several capital Plots of Land, finely situated, with ample frontage, and suitable for the erection of single or semi-detached villas. Ground-rents moderate.—For plans and particulars apply to Mr. NORTHCROFT, Surveyor, 40, Nottingham-place, Marylebone.

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TO BE LET, eligible PREMISES, Nos. 7 and 8, Lady Lake's-grove, Mile end, extending over an area of 5,000 superficial feet, with Buildings thereon.—For particulars, apply to Mr. G. H. SIMMONDS, Surveyor, No. 7, Great Alie-street, Goodman's-fields; and No. 1, Eden Villas, Bridge-road West, Battersea. If by letter, to be pre-paid.

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SEVERAL PLOTS of eligible BUILDING GROUND in the suburbs and environs of London TO BE LET, on favourable terms, either in large or small quantities.—For particulars, apply to Mr. E. A. SPURR, Architect and Surveyor, 3, Newton-road, Bayswater.

BUILDING GROUND for Villa Residences at Kilburn. TO BE LET, delightfully situate plots of ground, elevated 130 feet above high-water mark, commanding views of Hampstead and Richmond The average dimensions, 42 feet frontage by 150 feet depth. Omnibus and railway communication with the City These sites are well adapted for parties desirous of building for their own occupation. Leases will be granted direct from the freeholder for ninety-eight years. Money advanced on mortgage, if required. Apply to Mr. F. M. BAIL, 44, Regent-street, Piccadilly.

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Enrolled under 6 & 7 Vict. 3, cap. 73, and established for the purpose of aiding members of all classes in obtaining the county franchise, and as an eligible mode of investment.

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The Hon. C. L. Wyndham, M.P. W. Thompson, esq. M.P. Ald.
Progress during Eight Months:—

Subscribed capital	£300 000
Paid up	£36,00
Shares issued	4,000
On the ords. of rights	874
Estates bought	8
Allotted	1
Ready for allotment	3

Negociations for the purchase of other eligible estates are in progress.
CHARLES LEWIS GRUNEISEN, Secretary.

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CHARLES LEWIS GRUNEISEN, Secretary.

WANTED, on LEASE or to PURCHASE, PREMISES, in one of the suburbs of the metropolis, suitable for a SMALL FACTORY of about fifty workmen, with about an acre of land adjoining. The neighbourhood of Bow would be preferred.—Particulars to be forwarded to WILLIAM BECK, Architect, 33, Finsbury-circus.

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N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET, CHANCERY-LANE.

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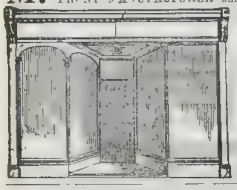
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Workmanship and Materials of the best description

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TO ARCHITECTS AND BUILDERS

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	Per square		Per square
¾ inch yellow	14s. 6d.	¾ inch white	14s. 0d.
⅞ " "	16 0	⅞ " "	15 0
1 " "	18 0	1 " "	18 0

2½ per cent. discount off amounts exceeding twenty pounds. ARCHBUTT and ATKINSON, St. Panoras Saw-mills, Cambridge-street, Old St. Pancras-road.

By Her Majesty's — Royal Letters Patent.

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Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depot of the Docks, are advantageously situated for land conveyance, or for shipment; and from possessing Sufferance Privileges, are consequently, equally applicable for Colonial and Foreign Trade

Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 2, Charlotte-row, Mansion-house, City.

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W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING-BOARDS, MATCHED BOARDING and MOULDINGS of every description prepared in a superior manner, from the best goods.

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1st June, 1853.

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Steel Drawing Pens, with ivory handles	4s. 0d.
do do brass-jointed do.	4s. 0d.
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And every other instrument of the best workmanship equally low.

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☞ Mechi's razors and magic paste are renowned throughout the world.

GUTTA PERCHA TUBING, for the CONVEYANCE of WATER to DWELLINGS, FACTORIES, &c. &c.

Many inquiries having been made as to the DURABILITY of this Tubing, the Gutta Percha Company have pleasure in drawing attention to the following letter, received

FROM C. HACKER, ESQ. SURVEYOR TO HIS GRACE THE DUKE OF BEDFORD.

"Office of Works, Woburn-park, Jan. 10, 1852.

"In answer to your inquiries respecting the Gutta Percha Tubing for Pump Suctions, I find that the water has not affected it in the least, although it will eat lead through in two years. We have adopted it largely, both on account of being cheaper than lead, much easier fixed, and a more perfect job.

"Yours, &c. "C. HACKER."

N.B. The Company's Illustrated Circulars (72 pp. 4to.), containing directions to Plumbers for joining tubes, lining tanks, &c. will be forwarded on the receipt of four postage-stamps.

THE GUTTA PERCHA COMPANY, PATENTEES, 18, WHARF-ROAD, CITY-ROAD, LONDON.

LATHS!!—To BUILDERS, PLASTERERS, and OTHERS.—Mr. GEORGE POSNEY is now selling Memel Crown Laths, made from the best Baltic wood, at 25s. per load, at his Timber and Deal-yard, Ferry-road, Millwall, Poplar, five minutes' walk from the West-India Dock Station. A large stock of Laths and well-seasoned Flooring Boards always on hand.

REFINED ANIMAL OIL, for all kinds of Machinery, equally applicable for Heavy or Light bearings. This Oil, manufactured by BOWER and TRIGG, being a pure fat Oil, is confidently recommended as the very best for all kinds of Engineering purposes, and, being an Animal Oil, cannot possibly injure or corrode the finest machinery. It has now been tested for some years, and several eminent Engineers, under whose supervision it has been used, have borne testimony to its superiority over every other lubricator. Sold in cans or casks of any size at 3s. 6d. per gallon. Machine Oil, suitable for Saw mills, at 3s. 6d. per gallon, cans and casks charged, and the same allowed for when returned. Five per cent. discount for cash on delivery.—BOWER and TRIGG, Oil Refiners, White Lion-street, Bishopsgate, London.

SCAFFOLD POLES for SALE.—A large quantity of 4 to 6-inch new SCAFFOLD POLES, average length 40 feet. Price for cash net, 13d per foot, where they lie.—Apply at Mr. NICKS, at the St. Pancras Saw Mills, Old St. Panoras-road.

SCAFFOLD and FALL-ROPES, PATENT SASH and BLIND LINE, BED-SACKINGS, SUN-BLINDS, COCOA-FIBRE MATS AND MATTINGS, &c. are supplied on the best terms, by B. AUSTIN, Manufacturer, 431, OXFORD STREET, LONDON.

ROMAN and OTHER CEMENTS.
Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who, in 1796, first introduced PARKER'S ROMAN CEMENT; also Tarras and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots. Trusses, &c
Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Sheppy Stone, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been long used at the great Break-water at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every former construction had been repeatedly washed away. The inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.
CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.
Agent for Southampton, R. L. FLUDER, American Wharf.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1850, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT
Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of this cement without any increase in price.
Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.
ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.
A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 31, King-street, Liverpool.

6, South Wharf, Paddington.
PORTLAND CEMENT.
CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cement). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; mentioned with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle which, and the great attention to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great attention in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also particularly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.
Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.
ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.
SECONDS, PAVIORS', STOCKS, and other Bricks.
CHARLES RICHARDSON, 6, South Wharf Paddington.

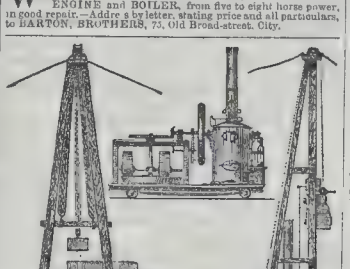
GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Lathe, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

TO CONTRACTORS AND OTHERS.
WILLIAM PETERS (late Poynder and Moddicott), 7, North Wharf, Paddington, and Wouldham Hall, Grey Stone Lime-works, on the Medway, near Rochester, beg to inform all large consumers of Grey Stone Lime, he can supply them upon the most advantageous terms, in quantities of not less than 50 or 100 cubic yards, per barge, along-side any wharf in London or elsewhere.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT
As used at St. George's Hospital, Hyde Park Corner.
JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 220 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.
JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone, and may be cleaned with a brush and water.
The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO., at the Warehouse, 22, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

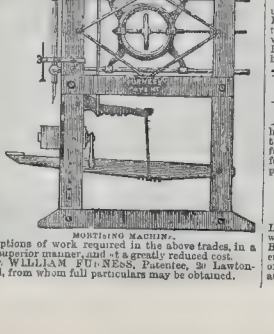
TO IRONMONGERS AND SMITHS.
TO BE DISPOSED OF, in consequence of the indisposition of the Proprietor, a FURNISHING IRONMONGER and SMITH'S BUSINESS, with workshop, forge, and moderate-sized dwelling-house. Stock and fixtures about 300l. which could be reduced.—Apply to Mr. HAINES, Auctioneer, Grosvenor-street West, Eaton-square.

WANTED to PURCHASE, a STEAM-ENGINE and BOILER, from five to eight horse power, in good repair.—Address by letter, stating price and all particulars, to BARTON, BROTHERS, 73, Old Broad-street, City.



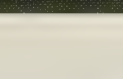
A SAVING of TIME and MATERIALS with solidity of Building
NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 46, Albert-road, Manchester.
TESTIMONIAL
From the Trustees of the Birkenhead Docks.
"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.
"Nathan Gough, esq.
"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.
"I am, Sir, your obedient servant,
"JAS. ABERNETHY."

VALUABLE PATENT MACHINES FOR WORKING IN WOOD.
PRIZE MEDALS have been awarded to these celebrated Machines, both by the Great Exhibition in London, and many scientific institutions.
They are extensively used throughout the United Kingdom, by joiners, contractors, coach and cabinet makers, railway carriage and waggon builders, machinists, agricultural implement makers, shipbuilders; and also by the British and French Governments, for planning and squaring up, moulding, tenoning, mortising, grooving, rebating, sawing, and boring. Their numerous uses are in every respect perfect, either in hard or soft wood, and will perform all the ordinary descriptions of work required in the above trades, in a very rapid and superior manner, and at a greatly reduced cost.



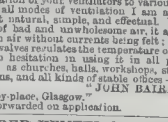
MORTISING MACHINE.

Sold only by WILLIAM FURNESS, Patentee, 30, Lawton-street, Liverpool, from whom full particulars may be obtained.



WATSON'S PATENT VENTILATOR.
MANUFACTORY:
KING-CROSS-LANE, HALIFAX, YORKSHIRE.
THE Great Problem of Perfect Ventilation is now Solved by WATSON'S PATENT SELF-ACTING, DOUBLE-CURRENT VENTILATOR, which has been successfully applied to Public and Private Buildings, Stable Offices, Workshops, and to all kinds of premises requiring ventilation, and the withdrawal of heat, steam, and dust.
Thousands of persons assembled in one building have breathed as pure air, and felt as cool and comfortable, when Watson's Ventilator was applied, as when in the open air, or sitting in their own drawing-room.
The Ventilators supply the purest air of the locality, by thousands of hogsheads per hour if required, and without any apparent sensation from draught, as well as withdraw all the vitiated air. They are not liable to get out of order; a child may regulate them; and they will last for generations without subsequent expense for repairs, other than an occasional coat of paint.
The Ventilators are all Warranted, and buildings are undertaken to be ventilated upon the principle of NO CURE NO PAY.
Horses that have been troubled with cough and other symptoms of disease have been cured by Watson's Ventilators.
Testimonial from John Baird, esq. the eminent Glasgow Architect:—
"Mr. Chas. Watson,
"DEAR SIR,—I have much pleasure in bearing testimony to the successful application of your ventilators to various apartments in this city; and of all modes of ventilation I am acquainted with, yours is the most natural, simple, and effectual. While it relieves the apartment of bad and unwholesome air, it at the same time supplies the fresh air without currents being felt; and a very little attention to the valves regulates the temperature of the apartment.
I shall have no hesitation in using it in all places requiring ventilation, such as churches, halls, workshops, staircases lighted by cupolas, saloons, and all kinds of stable offices.—I am, dear Sir, yours truly,
"7, Abercromby-place, Glasgow." JOHN BAIRD, Architect."
Testimonials forwarded on application.

REGISTERED VENETIAN VENTILATOR,



ALSO,
DR. ARNOTT'S VENTILATING CHIMNEY-VALVES, at the following reduced prices:—

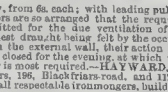
No. 1. Plain Valve	3s. 6d.
No. 2. Bronzed and feathered	4s. 0d.
No. 3. Bronzed and feathered, with trellis-work	4s. 6d.
No. 4. White and gold lines, with feathers	8s. 6d.

PATENT SPINDLED CHINA MORTISE FURNITURE.

White	1s. 8d. per set.
Black	1s. 10d. "
White and gold	2s. 6d. "

J. H. BOOBBYER and CO., Ironmongery, Brass Foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 300 years for the sale of goods from the best manufactories at the lowest prices.

VENTILATION.—PURE AIR.
Sheringham's Ventilator for the admission of pure air through an EXTERNAL WALL.



With single pulley, from 6s. each; with leading pulley, from 8s. 6d
These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught, either felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HENYARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough; and of all respectable ironmongers, builders, &c.

ROYAL ACADEMY of ARTS, Trafalgar-square.—The EXHIBITION of the ROYAL ACADEMY is now OPEN. Admission, Eight o'clock till Seven), One Shilling. Catalogue, One Shilling.
JOHN PRESCOTT KNIGHT, R.A. Sec.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS.—Their NINETEENTH ANNUAL EXHIBITION is NOW OPEN, at the Gallery, 53, Pall-mall. Admission 1s.
JAMES FAHEY, Secretary.

ROYAL POLYTECHNIC INSTITUTION.
Patron—H. R. H. PRINCE ALBERT.—New and interesting attraction.—The First Part of an Historical Lecture on "The Thames," from its Source to its Estuary, by George Buckland, esq. assisted by Miss Blanche Younge, with appropriate Songs and Dissolving Scenery, every evening (except Saturday), at Nine o'clock; in addition to the varied Scientific Lectures and Exhibitions open Morning and Evenings. Admission, 1s. schools and children under ten years of age, half-price.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half-past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT, every evening from Seven till Ten; Music from Two till Five, and during the evening.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE.—This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755, is exhibited for a short time in all its original splendour, and by the aid of new machinery, with increased startling effects. Daily at Three; Evenings at Eight o'clock.—Admission One Shilling. Children and Schools half-price to either Exhibition.

INFRINGEMENT.
WOODBRIDGE'S PATENT RIVET-MAKING MACHINE.
I, JOHN BEITH HODGE, having unknowingly infringed this patent, hereby give Notice, that I have given up my Machine to the proprietors of the patent, on the agreeing not to institute legal proceedings against me. And further, I engage not to infringe the said patent in any way in future, and to use my best endeavours to protect the interest of the proprietors of the patent from any other infringers.
(Signed) JOHN BEITH HODGE.
Witnessed by—William Johnson, Patent Agent, Glasgow.
Robert Calder, Engineer, Glasgow.
Glasgow, March 25th, 1853.
THE YORKSHIRE PATENT RIVET COMPANY, Sole Licensees of the above Patent, having lately erected extensive works and powerful machinery for the manufacturing of Rivets, Bolts, Spikes, &c. are prepared to execute all orders that may be entrusted to them with the utmost care, both as regards the quality of Iron used, and punctuality in delivery.—For price, &c. apply at the Company's Works, Scott-street, Hull.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air; it is therefore well suited for the Colonies and all tropical climates.

For Glasscoood Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,

12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead: it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent, (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of B-dy; by which term the power of covering surfaces well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more porous, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Finishing, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly valuable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 8, Upper Thames-street. Mr. Richd. Cooke, 7, Size-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr James Doughs
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innocious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the V M mark—In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. T. B. MORLEY and Co.; and by the Company's Grinding Agents in London, Messrs. CHARLES TEVAUX and CO., wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 3, Tottenham-court, New-road, and 89, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. HAWFORD and CO. of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 28, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

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The Builder.

SATURDAY, JUNE 11, 1853.

HOW much has been done lately in adding to our knowledge of the domestic manners and social condition of nations in the ancient and modern world! But recently, we knew of the private life of the Greeks or Romans, as much as of the really important part of the story of our own isle. Yet the matter for investigation was at hand in both cases. Not to speak of the mass of objects of interest brought to light by antiquaries, and waiting to be wrought into connected narrative, our valuable collection of chronicles and archives were lacking only orderly arrangement, facility of access, and conviction of their importance, whether on the part of those professing to treat history, or on that of the race of mere collectors—happily running out. We had the works of national poets and romanciats, and manuscripts often illustrated by contemporary drawings,—full of allusions, apart from the direct object of the writer, but requiring such research as will wade through a volume to deduce one valuable item of fact. Homer and Thucydides had been *converted* into daguerreotypists of domestic manners, even where they had not been cognizant of anything beyond the direct object of each related tale. The same result might have been realized earlier, and to a greater extent than it was, from the paraphrase of Cœdmon, the poem of Beowulf, from the Liberate Rolls, and a hundred sources, were not people proverbially indifferent to what is at their own doors.

There is cause for satisfaction in what has been done during the last two or three years. We have had the most important contributions that we suppose have ever been made to the knowledge of any ancient race, in the explorations on the sites of Assyrian cities. In our own country, Mr. Macaulay showed something of what had been neglected by other historians. To come nearer to the book now before us,* Mr. Hudson Turner laboriously worked the mine, but lived only to give us the first instalment of what he would no doubt have left—an accurate presentment of the domestic life and household condition of our forefathers. The unreduced ore that remained was not trifling in quantity and importance. The Liberate Rolls, which, in the time of Henry III. supplied such minute particulars of the construction of the royal houses, indeed cease, soon after the accession of Edward I., to afford any information further than the amount of sums expended; and they preserve the same character down to the accession of Henry IV. But building accounts are more numerous than at any preceding time; and the descriptive poems of Chaucer, the chronicles of Froissart, the inventories of the lands and houses of the suppressed order of the Templars, and many other sources, help to develop the fertility of the soil which the author of the work now before us tills well. Whilst, as regards the early history, Mr. Turner had to regret that the drawings in Saxon manuscripts could not be entirely depended upon as accurate delineations of contemporary architecture, his successor is able to say,—

"Illuminated MSS. of the fourteenth century are fortunately sufficiently numerous, and they are in general so obviously truthful in the architectural details which they contain, that we are enabled to form a decided opinion as to the external features of houses in towns during this period."

And—

"The romantic literature of the period affords curious and valuable illustrations of the domestic affairs of our ancestors, and much of the charm pervading the old romances is to be attributed to the scenes which they present to us of the home life of the age in which they were written. The occasional efforts at minute criticism which they display are especially interesting to the antiquary. The ponderous Gestes and Tales of chivalry, so popular during the middle ages, are quarries, which it may be tedious to work, but which afford precious materials as a reward for the labour. These productions are more valuable from their very artistic defect and their historical anachronisms. The Romanciers made Hector live in the thirteenth century or Alexander the Great in the fourteenth, by surrounding those heroes with the social appliances and domestic customs of their own time. Often ignorant of classic lore, they did not seek to introduce ancient manners into ancient story, but feasted the heroes of the Theban or Trojan wars in the baronial halls of mediæval France and England."

We must not be understood, however, as ignoring the less elaborate labours of previous writers in this department, and we would especially allude to the notices and illustrations of the subject in Mr. Britton's "Architectural Antiquities," at a comparatively early period;—a reference to which by Mr. Parker would have been graceful.

To the value of any entire work, nothing could, of course, be more unfortunate than the premature decease of the original author; and especially great does the loss to archæological literature appear, when we are told that Mr. Turner's extraordinary memory was the chief depository of the materials he had collected, and of his accurate "knowledge of the public records contained in the various offices in London." It is not necessary to inform our readers, that the writer here modestly styling himself "the editor of the Glossary of Architecture," has his own special qualifications for such a work as Mr. Turner commenced, or that Mr. Parker can afford to receive the assistance, which he acknowledges, of Mr. W. Twopeny, Mr. Blore, Mr. R. C. Hussey, Mr. A. Nesbitt, the Messrs. Buckler, M. Viollet Le-Duc, M. Didron, M. de Caumont, M. Verdier, M. Bouet, Mr. Duffus Hardy, the Rev. James Raine—some of whom added to the interest of the former work—and others.

What we regret in this elaborate volume arose naturally from the circumstances alluded to. The record of progress is not what it might have been, had either Mr. Turner or Mr. Parker been permitted to undertake the whole. Short-comings may have been unavoidable, indeed, in the very endeavour to supply deficiencies in the description of Mr. Turner; but it is, nevertheless, requisite that our readers' attention should be drawn to one point, in which we think the present work, in its preface and opening chapter, is not sufficiently explicit.

The book is put forth (so far as lettering on the back and various headings and remarks may be understood) as "The History of Domestic Architecture in the Fourteenth Century;" Mr. Turner's work reaching "to the end of the thirteenth century." But judging from the title-page, and first sentence of chapter I.—Mr. Parker's account is intended to commence with the accession of Edward I. This event our readers know occurred in 1272; that is to say,—twenty-eight years of the reign to which so much importance has been properly attached, formed part of the period treated of by Mr. Turner. It is also to be borne in mind, that the present work does not treat of more than the period of the Decorated style, and that the change to Perpendicular took place somewhat before the end of the century, or, as Mr. Parker observes, during the reign of Edward III. Mr. Sharpe, indeed, dates his Rectilinear style from seventeen years earlier than the death of that monarch; that is to say, from 1360.

We draw attention to this matter at the outset, because it happens to be really important, not only to the correct understanding of the architecture itself, but of the works of the authors in question. The points which it seems to us should be recollected are, that the reign of Edward I. extended but seven years into the fourteenth century; that consequently the great results of his government as regards English architecture are to be looked for at an earlier date than might otherwise have been supposed; that the most important examples illustrated in the volumes are at, in the one case, the end, and in the other the beginning of the respective centuries; and that, in short, the two authors should be read together and as mutually explanatory.

Indeed, it cannot be too often repeated, that all division of styles by mere dates is conventional, and to some extent illogical. The same may of course be said, though to a less degree, of other modes of classification, and no one has been more careful to draw attention to the "overlapping" of styles than Mr. Parker, both here and elsewhere.—Some of the best examples of the domestic architecture of the period, which his summary of characteristics embraces, are illustrated in the work of Mr. Turner, as in the case of Little Wenham Hall, Norfolk, and Aydon Castle, Northumberland, to which, indeed, reference is made; whilst no building would seem so well to exemplify the character of the architecture of the latter part of the thirteenth century, as some of the border castles which Mr. Parker illustrates. This might indeed, in some degree, be pre-supposed, not only because the character of architecture does not change with the change of centuries, but is influenced—independent of the obvious circumstances of climate, locality, and available materials,—by political and social condition of a nation,—but because individual predilection would seem to have more influence with *domestic* architecture, and from the fact of the extraordinary tenacity of old habits, which Mr. Turner noticed from an early date, and which continues to cripple the efforts of the architect in the application of scientific improvements to the present hour.

Local fashions are, of course, observable in ecclesiastical architecture; and indeed even yet, have not received all the attention which would be desirable. But the received opinion of a rapid intercommunication of ideas amongst the Freemasons is not the less an accurate one. In domestic architecture, however, it does not appear that changes were effected with the same facility, unless in mere decorative accessories; and this in spite of the idea that might be derived from modern practice as to external character,—that greater permanence of fashion would necessarily prevail in the architecture of religious, than in that of secular, uses. This is explained when we reflect how difficult, as Mr. Parker shows, was the passage of any but armed bands of travellers between different parts of the country. Yet the same causes which kept the more humble class of artificers to one locality, and which required, in any case, that metal work, sheet lead, and many minor articles should be manufactured on the ground, also obliged the owner of several manors to consume the produce on the spot, and therefore to provide each residence with accommodation for the whole of his extensive retinue. The hall, indeed, continued to accommodate a considerable number in a way not quite consistent with modern notions: but we shall find that in some of the conveniences of an establishment, our ancestors were a trifle in advance of ourselves.

Still, such a change in the social condition as we have referred to, took place, though not at the beginning of the century, but rather from the accession of the first Edward, whose government both in England and France conduced not only to

* Some Account of Domestic Architecture in England from Edward I. to Richard II. with Notices of Foreign Examples, and numerous Illustrations of existing Remains from original Drawings. By the Editor of the Glossary of Architecture. Oxford: J. H. Parker.

important changes in the distribution of houses in towns, but to that free communication between the two countries which was so beneficial to the arts in England. Not only did the rapid development of ecclesiastical architecture extend to the decorative features of domestic buildings, but the plans of houses were improved, and the number of offices increased. Internal fittings and furniture also were added of a character more conducive to domestic comfort than had before been known in England. The brilliant state of our art lasted during the whole Edwardian period. The existing remains of domestic architecture are therefore more numerous than those of preceding periods, and many of the houses are of large extent. The bishops' palaces at Wells, Lincoln, St. David's, Southwell, and Norwich, and the castles and halls of Bamburgh, Raby, Naworth, Brougham, Markenfield, Warwick, Malvern, Penshurst, Nurstead, Ightham, Leeds, Mayfield, Winchester, Chepstow, and Pembroke, are some of those best known to our readers out of the number described and illustrated in these pages.

Although the Norman keep was a structure characteristic of an earlier period, the name, "castle," has been handed down to us as applied to many ordinary residences. It was only those to whom poverty was strength, or who resided in peaceful districts, who could afford to dispense with the license to crenellate; and the author's admiration of the skill of the mediæval architects for "the admirable manner in which plans and designs are arranged, and the ingenuity with which difficulties are overcome," should be understood with especial reference to this provision from surprise and attack by an enemy. To a practical architect, it will be apparent that the old plan of erecting separate buildings for the purposes of distinct apartments, and then uniting them by passages, was not fully improved upon, and that the economy and convenience of modern *compactness* in plans was barely apprehended. This is strikingly shown by the arrangement of staircases.

The necessity to fortify was so great, that even houses in towns were not always dependant upon the protection of the mere city walls; and on the borders of Scotland and Wales, the manor-house differed in the most important degree from that suitable to the peaceful county of Somerset.

"A common plan of manorial houses during the fourteenth century would appear to have been simply a parallelogram, with or without wings; for example, in the year 1314 Sir John Bishopsden, of Lapworth, in the county of Warwick, knight, covenanted with two masons for the erection of a convenient house of free-stone at his manor of Lapworth. This building was to be 40 feet in length within the walls, and 18 feet in width; the end walls with the gables were to be 3½ feet in thickness, and the back and front walls 2½ feet; the doorway was to be in the middle of the house, and on one side of it they were to construct a base-chamber with a fireplace and a wardrobe, extending out of the said chamber with proper windows and doors, and on the other side of the same doorway there was to be a chamber without a fireplace and wardrobe, but with fitting doors and windows. The principal doorway was to be of such size as the said Sir John should determine; and on each side of the entry there was to be a stone wall as high as the doorway, to which walls two columns of stone were to be affixed on which the leaves of the door might be suspended; and this doorway, together with the base chambers, to be 11 feet in height from the ground to the first rafters. Above the doorway and the two base chambers they were to build an upper chamber (*chambre estagée*) of the length and width of the house, with two fireplaces, two wardrobes projecting out of the same chamber, and with fitting doors and windows, according to the directions of the said Sir John; this 'sovereign chamber' to be 9 feet high from the floor to the rafters, and *alures** of stone 2½ feet in height were to be raised above the roof timbers. The principal doorway was to be so constructed that a drawbridge might be fitted to it. The masons appear to have been lessees of a quarry. Sir John engaged to lead the stone from it at his own costs, and also to find timber, carpentering, sand, and lime. The contractors bound themselves, in sureties, to complete the building within a year from the date of the covenant. Sir John de Bishopsden engaged to pay twenty-five marks for the entire work by two equal instalments, that sum being equal to about 200*l.* modern currency.

We have in this instrument an early example of what is modernly termed a self-contained house, in which, exclusive of the wardrobes or closets, there were only three rooms. Yet the ancient arrangement of having one large apartment, or *hall*, is still preserved: 'the sovereign chamber,' extending the entire length of the mansion, was 40 feet long and 18 feet wide, sufficiently capacious for the entertainment of guests, and the daily resort of dependents. From the special clause in the covenant that the entrance-door which was clearly under a porch, should be adapted to a drawbridge, it is evident the house was intended to be surrounded by a moat, carried closely round the building; beyond the moat there would be another enclosure in which stables, barns, and other domestic offices were erected."

The hall sometimes occupied the whole height of the house, and sometimes had a low ground-story under it. It does not appear that any underground story was adopted in country houses, although in town houses the lower story was half below, as in the case of that of Gerard's Hall. The apartment called "cellar" was therefore not what it is at present. Over the "cellar" was the "solar," or lord's chamber; and another of the principal apartments was the domestics' chapel, the arrangement of which had some peculiarities. Besides these were the offices and stables.

These buildings appear generally, to have been so arranged as to form either a perfect quadrangle, or three sides of one, with the hall in the centre of the principal front. The gate-house was opposite. The hall was sometimes of wood, like that at Malvern, now destroyed, and that still existing at Baggiley, in Cheshire.

"The whole was surrounded by a moat, usually enclosing a quadrangular space, whether the whole of the space was occupied by buildings or not. Sometimes, as at the Mote, Ightham, it actually washes the outer walls of the house and offices; in other instances, as at Penshurst, there is a space between the moat and the buildings; in such cases there was always a wall or a mound and palisading immediately within the moat to enclose the baileys or court-yards. The entrance was protected by a gate-house with a portcullis and drawbridge."

Profusely enriched as the work is with plates and woodcuts, we do not, however, get so clear an idea of the complete arrangement as would have been afforded by a restored plan; and the absence of cardinal points in many cases, some deviation from the common mode of showing staircases, and the omission of references in the first chapters to the valuable notices of existing remains which occupy a large portion of the volume, render it rather less clear in some particulars than it might readily be made in a future edition.

Yet the real difference of the castle and the manor-house is shown, although fortification was so far essential in both, that actual examples are not always readily to be referred to only one of these two classes. The castles of Caernarvon and Caerphilly, and some other Welsh castles, had habitable parts, though clearly belonging to the class of fortresses rather than to that of fortified dwelling-houses.

"On the other hand, many dwelling-houses in the border countries were so strongly fortified as to be hardly distinguished from them, and yet do not lose their character of dwelling-house, of which class Brougham Castle is a fine example. Many houses of this century have each a small square tower attached to them, sometimes as places of security to which to retire in case of any sudden attack; in other instances as a mark of rank, as this was one of the usual distinct privileges of the nobility, although in towns wealthy citizens were sometimes allowed to have towers to their houses, and the use of a tower and belfry was one of the privileges of a corporate town, of which the citizens were occasionally deprived when they gave offence to the sovereign. Many of these belfry-towers, and also many houses with towers, remain in the old towns of France and Italy. In the border countries these towers, commonly called Pele towers, are very usual, answering the same purpose as the keep of a castle, the strongest point for the last desperate defence. The tower appears sometimes to have been originally the whole of the house, which was afterwards enlarged by the addition of other buildings; these additional buildings were sometimes at first of wood, and renewed in stone at a subsequent period; in other instances the additional buildings are nearly of the same age as the tower."

The lower room is usually vaulted, and the staircase is in the thickness of the wall. Another class of houses, in some degree distinct from the last, may be called *tower-built houses*. They consist of a central block, several stories in height, with a turret at each angle. One of these turrets usually contains bed-rooms and other offices, the third closets, and the fourth the principal staircase. But houses on this plan are by no means confined to the border counties, for even in Somersetshire there is a good example in Nunney Castle, and Tattershall Castle, in Lincolnshire, of later date, is well known.

"These tower-built houses were generally surrounded by moats like other manor-houses, and no doubt had offices and stables either within the moat, or adjoining to it, but not joining on to the house. These were sometimes defended by a wall within the moat, with a gate-house, portcullis, and drawbridge, in other instances by wooden palisades only. The offices were frequently of wood, as was commonly the practice in all castles and large houses of this period. When the king was about to visit a particular palace, instructions were sent beforehand for the erection of such offices as were considered necessary, as we have shown was the case in the thirteenth century, and the custom was continued in the fourteenth. Permanent offices and outbuildings of stone do not appear to have been general before the fifteenth century, although occasional instances do occur in the thirteenth, as we have shown in the instance of Aydon Castle, and they became gradually more frequent during this century."

The general appearance of the country-house, whether of the great baron or of the gentleman, differed merely in extent and character of arrangements for defence; for even in the smaller houses "we generally find at least one tower of refuge, the walls crenellated and dotted here and there with loop-holes."

"In the more disturbed districts there are no other openings on the ground floor than loopholes; the lower rooms are all vaulted, and the dwelling-rooms are in the two upper stories, the ground floor being used for store-rooms or stables. One of the vaulted chambers in the larger castles is generally a guard room, with the dungeon or prison under it, the only entrance to which is by a trap-door, air being supplied by a flue in the thickness of the wall.

The entrance was frequently by an external stone staircase leading from the court-yard to the door of the hall, as at Markenfield Hall, Yorkshire, and Belsay Castle, Northumberland.

When the hall is on the ground floor there is generally a porch over the entrance, and at the opposite end of the passage a back door leading into the servants' court, as at Penshurst. In tower-built houses the entrance is necessarily external, there being no court-yard; it is sometimes on the first floor, and approached by a drawbridge, as at Nunney Castle, Somersetshire; in other cases it is on the ground, as at Langley Castle, Northumberland. The approach to the principal rooms is then by a winding staircase of stone of considerable size, and not merely one of the small newel staircases in the turrets; the other chambers are approached chiefly by means of these smaller staircases, in every chamber there is usually a fireplace, and each has also a closet attached to it, either immediately connected with it, or placed in one of the turrets with a passage leading to it in the thickness of the wall; these closets vary very much in size according to the purposes to which they were applied. That wooden palisades were frequently the only defence besides the moat we have abundant evidence."

We need not here describe at length the usual arrangement of the hall in a manor-house of this period. The windows were like those of churches, but more generally have a transom, and are especially characterized, internally, by the recess in the sill, with a seat on each side. The upper part was glazed, but the lower part had iron bars and wooden shutters only. The glass was fitted into moveable frames, so as to be removed occasionally, glass being still scarce and valuable. In place of glass, canvas was sometimes employed. Fire-places were not unusual in the hall; but the central hearth and and-irons and the louvre in the roof were retained. The usage had its advantages in the more general diffusion of heat in so large a space, whilst the use of wood and charcoal had few of those inconveniences which would have resulted from coal. The arrangement was not discontinued at Oxford and Cambridge until about 1820, and at Westminster College Hall not until as late as 1850.

The lower parts of the walls were wainscotted, and the upper part continued to be painted,

* The word "alure" commonly signifies a passage, but is here used for the parapet only

until the introduction of tapestry. Arras was celebrated in the fourteenth century.—The furniture and fittings of the hall are described, and many interesting particulars of the customs observed at the festive board are supplied in the work before us. A cistern and lavatory were commonly found in "the screens" or space under the minstrels' gallery; and as forks were not used, and even spoons and knives not universally so, basins, ewers, and napkins were carried round to the company before as well as after dinner. The hall at night continued in many cases to be used as a dormitory.

The peculiarity of the domestic chapel was, that it was generally divided by a floor, for part of its length, into two stories, both open at the east end, or separated from the chancel by a screen only, and that these rooms were not exclusively devoted to sacred purposes. There were often fire-places in them. To the upper room Mr. Parker shows that the much-debated term *oriole*, or *oriel*, spelt in various other modes, was applied, though not the less in its better understood acceptation.

The use of the solar, lord's chamber, or parlour, corresponded with that of the modern withdrawing room. It occupied that part of the plan next to the dais and lord's table, the offices being at the other end of the hall. Yet in large houses, the "solar" and lord's chamber appear to have been distinct; the former term being, in fact, applicable to any upper room, as that in the upper part of the gate-house which also was sometimes used as the chapel. In the larger houses were other apartments,—as, the lady's chamber, or bower. The latter term is applied sometimes to a bed-chamber.

Kings and nobles gave audiences then, as at a much later time, and as now do the most discreet of the Spanish ladies, in their sleeping apartments.

Though beds were placed in the hall, and generally in all the apartments, a distinct bed-chamber is often mentioned. An apartment called the wardrobe was an important part of the house, and was used to keep articles of dress and furniture.—It does not appear to be very clearly made out what were the uses of the apartment beneath the solar in the smaller houses; but judging from the plans in the work, it could hardly have been the wardrobe. In each of the large palaces there were several wardrobes.—But the term *garde-robe*, which thus seems to have been used in two senses, was applied to certain important adjuncts which even now are not made so important as they should be in the arrangements of public and domestic buildings. The number of these conveniences in a single building was often very great. In the house at Lapworth before mentioned, there was one to nearly every apartment. At Langley Castle, Northumberland, one of the towers is devoted entirely to this purpose. There are twelve, with recessed arches in the wall, four in a row, in three rows one over the other: the two upper rows each set back beyond the one below it, so as to allow space for the shafts or flues to the pit below, through which, as still in many country places, a stream of water was diverted. At Southwell, the *garde-robes* are arranged round a central pillar. At Langley Castle, some, besides those mentioned, remain in other parts of the house. Mr. Parker finds it difficult to decide, whether each compartment was enclosed by wooden framing, there being no indications of it. We have no doubt that the recesses on each floor were always open, as regards each other.—Similar attention to requirements which are still too much neglected, is shown by the statement, that it was by no means uncommon for the bed-chamber to be supplied with a bath.

The offices were necessarily extensive from the circumstances already stated. The kitchen was sometimes octagonal in plan, like a well-known example at Glastonbury, and that at Durham illustrated in the present work. It was generally, as much as possible, detached, as a security against fire. Many trades were, and indeed, still are, carried on about great baronial mansions, and it seems probable that all operations requiring a forge were performed in the kitchen.—The buttery, the pantry, the larder, water-mills, wind-mills, and barns, we can only name as heads, under which will be found many interesting particulars in the work, as also under those of roads and carriages.

Mr. Parker's individual authorship is especially observable in a very interesting chapter on mediæval towns. He shows that the popular idea of an accumulation of houses without any order is not correct in all cases. In inquiring into the origin of old towns, he divides them into several classes. In some of Roman origin, the plan is a parallelogram, with a gate in the middle of each face, and streets crossing each other in the centre of the town, no regular plan being followed in the four quarters. Other classes have clustered round the walls of a castle or monastery for protection, without much regularity,—though the streets at Norwich wind round, following the line of the moat.

"There is, however, still another class of towns which were entirely founded in the Middle Ages, built from their foundations on a new site for some specific object, which have not been sufficiently noticed. These towns are more regular and symmetrical than most modern towns, and are built on an excellent and scientific plan, combining very close packing with great convenience for individuals, while the principal streets are wide, open, and straight, crossing each other at right angles only. There are always two parallel streets at a short distance one from the other, and connected by short streets at frequent intervals; between these principal streets, and also in parallel lines, are narrow streets or lanes, corresponding to the modern mews, and employed for the same purpose: by this means each plot of ground for building on is of a uniform size and shape, a parallelogram with one end facing a principal street, and another a lane. In some towns each building plot, or, when built upon, each house was also divided by a narrow passage or court, leading from the principal street to the lane, serving as a watercourse and surface drain. Sometimes, when a larger house was required, two plots were thrown together, and the passage omitted; and in some towns these narrow passages were not used at all. The principal streets were 24 feet wide, * the lanes 16 feet, and the passages only 6 feet."

It must be noticed that these passages are wider than the alleys of modern towns, sanitary reformers as we may be.

"The advantages of these passages are, that there would be no dispute about party-walls, and as the upper parts of the houses were usually of wood, in case of fire each house was detached from its neighbours, and the fire would be more readily extinguished. Near the centre of the town was a large market-place, at one corner of which was usually the church; and it should be observed that the principal streets do not cross each other in the centre of the market-place, but run in a line with its four sides, passing out from each corner in a direct line to the extremity of the town, so that the traffic did not interfere with the central space, which was often planted with trees; and in this space was the market-hall or weighing place, sometimes a building, in other cases a mere shed on a raised platform: and in another corner was usually a well. In southern climates the houses round the market-place are built on arcades or a series of groined vaults open on one side, with shops on the opposite one; these covered ways are of the same width as the main streets, 24 feet, so that there is ample space for two carts or waggons to pass each other without inconvenience, and the height is sufficient for this purpose, though they generally look low in proportion to the length and breadth; the arches next the market-place are usually pointed, those across the roads, which may be called the arch ribs, are usually segmental, on account of the wide space and want of height. These covered ways afford shelter alike from the sun or the rain, and are a great convenience in the south of France and in Italy: they appear to have been sometimes used in more northern climates also, and it is probable that the piazza in Covent Garden is a traditional continuance of the same custom. † There is a fine example of nearly as late a date at Montauban: it is in the style of the Renaissance, and built of brick: but the character of the mediæval market-place is admirably preserved, including the covered ways round the sides, and the covered platform at one corner of the central space.

The best example in England of these mediæval towns on a regular plan is Winchelsea, which was founded by Edward I. on a new site, in consequence of the encroachment of the sea having almost destroyed the old town. But in the province of Guienne or Aquitaine, which was then part of the English dominions, they are very numerous, and are commonly known as the English towns.* In 1298 Edward I. wrote from Bordeaux to London, desiring the authorities there to send him out four persons competent to lay out the plans of towns. 'The most clever and able, and those who best know how to divide, order and arrange a new town in the manner that will be most beneficial for us and for the merchants; and who shall be ready and willing to go for that purpose, wherever we may send them.' These towns are also called 'Bastides' (the name for them in the Provençal language), 'New Towns,' and 'Free Towns,' Ville-neuve, or Ville-franche. Any one running his eye over the map of France will be surprised at the frequent occurrence of these names.

These towns formed an essential part of the policy of Edward I. perhaps the most wise and far-sighted monarch that England has ever had: he endowed them with special privileges to encourage inhabitants to flock to them, and in this he was very successful. They performed an important part in the progress of civilization in Europe.† The inhabitants were all made free men, exempt from the power and jurisdiction of the neighbouring barons or bishops; their tenure was direct from the Crown, and they were granted the important privilege of free trade. The charter confirmed to the new town of Winchelsea is almost identical with those granted to the Bastides, and this being in England belongs perhaps more strictly to the present work, though it is not quite so perfect a type as some of the towns in France, such as Montpazier, which is the most regular of all. At Winchelsea, from the irregular form of the ground to be built upon, situated on a ridge or neck of high land between the river and the sea, the plan of the town is not so perfectly symmetrical, but is sufficiently so to show the intention, and as much so as it could well be made."

The town retains a considerable number of fine vaulted cellars, like that of Gerard's Hall. In London, as elsewhere, it was the most common arrangement to have the lower story of the house half under ground, vaulted over, though the superstructure was of wood. The town of Kingston-upon-Hull is due in like manner to Edward I. and it is described at length in this volume. The influence of the free towns in the progress of civilization is inquired into, as well as that of the merchant and religious guilds, to whom are due so many of the important remains of mediæval architecture. The houses of the guilds seem to have been sometimes identical with the Town Hall, or Hotel de Ville; but each separate trade often had its hall, as in the case of the Companies of London. The halls of the inns of court are considered to belong to a class differing more in degree than in kind, from the guild-halls of the middle ages. On the continent such buildings are very numerous. The Low Countries, the chief seat of trade, supply the finest examples. One of the cherished privileges of the chartered towns was the right of erecting a tower, then usually considered as a mark of nobility.

We are told that "the public sewers or drainage of towns in the middle ages were much attended to, as conducive to the health and welfare of the town." The control was evidently "not left to the town, but the Government took the means to insure the good management of this most necessary matter."

In the houses of the more wealthy merchants, apartments corresponding with the hall, parlour, and offices of the country-house were to be found. Generally, the arrangement was as before noticed; the lower story being appropriated to the sale of goods, and the upper for the residence. Where the owners were not merchants, the arches of the lower story might be either walled up, or used as a cellar or stables, the dwelling-room being approached by an external staircase. Overhanging stories were common, but not invariable: with the gables turned towards the street, a picturesque appearance was produced. The roof in general con-

* These are the measurements of Montpazier, the most perfect and regular of the English towns founded by Edward I. in Aquitaine or Guienne; they apply equally to several others of the smaller towns, but in the larger towns, as Libourne, the principal streets are 80 feet wide, or, according to the measure then generally used, 5 toises, the toise being 6 feet.

† It may, however, have been from the cloister of the convent that the idea was taken.

* M. Felix de Verneilh has published a valuable series of papers on the subject of these towns, in Didron's "Annales Archéologique," in which he labours to prove that, notwithstanding the popular name of "Villes Anglaises," these regular plans were not of English invention. He allows, however, that the plans of the English towns are more perfect and regular than the French ones, so that it is probable to this as in most other things, the French were the original inventors, but the English perfected the invention, and applied it to practical use. The earliest of the English Bastides is said to have been Montségur, founded in 1265.

† See Sir James Stephen's Lectures on the History of France, Lecture V.; Guizot, "Histoire de la Civilisation," tom. v. 16e leçon; Hallam's "Middle Ages," chap. ii.

tained a granary. Our author concludes that polychromatic decoration was commonly practised on exteriors. The accounts of the works at Windsor Castle afford some curious particulars of the decoration of the round tower, also called the Rose tower; and of the materials, labour, and time, which were employed upon it; and he thinks it is clear that it was painted in imitation of the flower from which its name was taken. Moreover, the use of gay colours is still common in some parts of Holland. The woodwork, so extensively used, would require preservation; and the painting the timber houses in Lancashire and Cheshire black and white, may be a continuation of a more ancient custom.

Chimneys which, in the twelfth and thirteenth centuries, were round and tall, in the fourteenth were frequently octagonal. The use of tall chimneys was still continued; but in many cases chimneys are short, and stand on the point of the gable, or the ridge of the roof. They are often terminated by a short spire, having apertures for the smoke, and are sometimes enriched with crockets, or battlements.

From the intimate connection of England and France at this time, Mr. Parker's notices of examples in the latter country are especially interesting, illustrated as they have been by the careful drawings of M. Bouet. And it is fortunate that the deficiency of town-houses of the fourteenth century in England (owing to their being built of wood and to fire), "is abundantly supplied by the English towns in France." Country-houses of the same period, are in France equally deficient, owing, Mr. Parker thinks, to the disturbed state of the country, in which the comparatively limited fortification, suitable to our more peaceful districts, would have been inefficient. The most noticeable peculiarities to our English eye in these French houses, are their material, their sculpture, and their profuse arcuation. Ranges of windows and openings, in elevation like the *triforia* of cathedrals, occur in several stories. Prior to the fourteenth century, the elevation next the street was finished with a cornice of very bold projection; but during the fourteenth, the high-pitched gable was introduced. Turrets corbelled at the angles began to appear in important houses.

The book concludes with short notices of examples in Flanders, Germany, and Italy; but we should remark that the buildings of Scotland and Ireland are barely referred to.

Mr. Parker brought to the work not only a mass of accumulated materials of previous researches, but, as is very evident, a feeling of "never being contented to take from other sources anything which he had the opportunity of verifying for himself."

It is not unusual for authors, when their own works are spoken of somewhat inquiringly, or argumentatively, to understand as blame what is intended as cordial approval and encouragement. Mr. Parker, indeed, is not likely to meet us in this spirit; but we will, nevertheless, to lessen the risk of any such impression, not end our notice without saying that the book is one of great value, and should find a place in every library of English history.

THE SCAFFOLD IN THE DOME OF ST. PAUL'S.

Our readers are aware that the restoration, or rather re-painting, of Sir James Thornhill's pictures in the dome of St. Paul's Cathedral has been commenced. Looking up into the mighty concave lost in gloom, and so far above the eye that its decorations were scarcely visible, it has always seemed a matter of great difficulty to form a scaffold to effect the work. Various proposals have been made from time to time, including a scaffold built up from the ground—no trifling affair—and a platform covering the whole area of the dome at its springing. Mr. Parris, aided by Mr. Penrose, has solved the problem very satisfactorily, and at a cost comparatively trifling. Before it was done, it seemed very difficult of accomplishment; now it is effected it seems perfectly simple and easy. From the main cornice above the Whispering-gallery are thrown out a certain number of poles, 32 feet long, the thick end resting on the cornice, and some of them (three out of five) secured by bolts through the wall of the dome. At the other end these are secured to a cross pole, which is carried by three wire ropes passing through the eye of the cupola, and secured to the main timbers of the outer dome. There is a stout flooring of boards upon the poles and an inclosure round its edge about 3 feet high. At a height of 30 feet above this first floating platform there is a second of similar construction, and then at another 30 feet a third. Upon the first platform is a scaffold consisting of five pairs of shears, each constructed of two *half*-poles lashed together at the top, and thus the whole height of the dome for one-eighth of its extent is commanded.

The greater portion of the division upon which the artist is now at work has been cut down and replastered (with lime, sand, and puzzolana), and this will be the case throughout, the damp having affected them to so great an extent as to render repair impossible. Mr. Parris is heightening the tone, keeping the colour much lighter than it formerly appeared, which will render the pictures more clearly visible from below. He considers that they were originally painted so by Thornhill, and that the boiled oil with which they were worked has changed. The medium he is now using is encaustic, his own "marble medium." When one compartment has been executed the platform will be shifted. Each rope was tested with 8 tons, and there have been as many as twenty-three persons upon the platform at once since it was completed. Its extent enables the artist to retire 24 feet from the picture to see its effect.

Putting on one side the vital error in the general arrangement, whereby the endeavour is made by painting to transform the cupola into a drum of upright walls, the pictures are works of great merit,—the composition of some of them is admirable, and the heads are painted with much force. The figures are each 14 feet high.

The light to the dome coming from the windows, a scaffold over the whole area would have left the painter in darkness, whereas by the arrangement which has been adopted the shadow is but partial, and may be overcome.

The scaffold, as we have already said, is a very meritorious arrangement, and deserves the examination of all who are interested in such works.

A DIFFICULT PASSAGE.

NEW-STREET, COVENT-GARDEN.

There is a small street, but a most important thoroughfare, in London, which, although in a most respectable neighbourhood—even on the highway from the west-end to the Royal Italian Opera—is the scene of more obstinate defiance and bad language than any other part of the metropolis. I do not even except Billingsgate, which has, to be sure, become revived and purified. The number of eyes condemned here, and limbs subjected to the effects ordinarily produced by lightning, is really awful. I allude to New-street, Covent-garden.

You have, I am sure, occasionally arrived at the end of New-street in a cab: everybody has. It makes little difference which end, the result is always the same, whether you are coming westward, with the bouquet you have promised to leave before half-past seven, you know where,—your Haymarket stall in your pocket,—or your portmanteau labelled to Bristol;—or eastward, being late to dine at the Garrick, to hear the first bars of "Les Huguenots," or to catch your lawyer in Lincoln's-inn before he leaves chambers. Under whatever circumstances, at whichever end you arrive, you will never get to the other.

As the spectre of the Brocken appears to the traveller,—marches as he marches, and imitates all his motions; so, the instant you arrive at one end of New-street, a cab arrives at the other, holds up his whip as yours holds it up, drives on quicker as you begin to hurry, comes to the middle of the pass, and stops, as you do. And then if you have nerve—it is folly to suppose you have—to be heedless of the recommendations of that source of all street power—the boys—to learn your catechism, now you've got time, or take your night-cap from your pocket and put up for the night, or wait till they come back to know how you are the next day,—you will have the finest opportunity for reading all the debates of the night before, or "The Key to Uncle Tom's Cabin," or the longest report of any commissioners about anything in which you have not the slightest interest, that compulsory leisure can find.

You do not take a prominent part in the dispute yourself; you assume that painful carelessness which typifies the man conscious that he is an object of observant ridicule, and, with your antagonist, as in a duel, you leave the matter entirely in the hands of your seconds—the cabmen. Their interview assumes the various phases of the objective, the unreasoning, the satirical, the vituperative, and the ultra-blasphemous: and unless a policeman arrives at this crisis, like the beef-eater in *The Critic*, there is no knowing what remote hour of the night will still find you there. Now and then the thoroughfare—it really does not deserve the name—is openly barricaded by a waggon or van unloading; that does not irritate you so much, since you give up all hopes of progress at once and think about Chandos-street; for, I believe, twenty minutes is allowed for all carts to stick opposite their shops in New-street.

There is, to be sure, at the Covent-garden end one way of avoiding this nuisance, but it is a Charybdis at best. A noisome narrow lane, with two sharp turns, ultimately leads the bold adventurer under an archway into Long-acre. When clear, it is a filthy, disreputable place—old ghastly tumble-down houses, with the window-frames even knocked out—burrows and warrens of infamy and dirt—gin-shops, tramps' lodging-houses, smells, and obstructed gutters form its chief attributes. It is just possible, at the risk of cracking your wheels against the corner-posts, or crushing some of the wretched children who swarm amongst the mud and refuse heaps (and refuse here!), that you can get through this north-west passage. But if you meet anything in the centre all hope is gone: you cannot go on, and it is impossible to turn. There is not even the presence of respectable passengers to restrain any brutal outbursts; the row becomes the excitement of the entire district; terrible heads protrude from the doors and windows; half-drunken, sodden, semi-animals abuse and insult you; and your only plan is to get out, pay your fare, leave your vehicle to its fate, and make your escape at either end as quickly as your legs can carry you.

Is it possible, Sir, that anything can be done to remedy all this nuisance? I know nothing about the property,—its distribution or its privileges,—but I do think a broad street cut through this block of houses, so as to continue King-street the same width into St. Martin's-lane, would be the shortest and greatest improvement in the present London thoroughfares. I do not wish to be thought unreasonable when I say that if a fire were to break out at the fashionable stock and dress-shirt establishment at one end, and with a good strong westerly wind burn down the whole of the houses to the corner of Rose-street at the other, the devouring element would accomplish as much good as if it had taken the same sweeping liberty in Holywell-street. But if this cannot be, might not a rule be enforced that all vehicles coming one way should pass up New-street, and all going the other should take the Long-acre double-elbow lane? Or, better than all, why should not a broad thoroughfare be opened at once diagonally from King-street to the corner of Cranbourn-street? The property cannot be of much value, to judge from the appearance and habits of the settlers thereon.

ALBERT SMITH.

POWER OF WATER.—In reply to a correspondent who wished to ascertain "the motive power of a stream of water running 180 gallons per minute over a fall of 20 feet," "C. W." says,—"The total power of the water, according to the quantity and height of fall stated, will be 1·09-horse power: the effective power, if well applied, will be 75 or 80 per cent. of that sum."

WINDOWS, FROM VITERBO.



FIG. 1.



FIG. 2

WINDOWS, VITERBO.

THE little town of Viterbo, in the Papal States, contains several Gothic buildings of great interest. Fig. 1 is from a palace, and fig. 2 from a building connected with the cathedral. The peculiar Italian character of the tracery of the latter specimen is worthy of notice,—each circle being made of a separate piece of stone.

ALFRED BAILEY.

CORNETO. ETRUSCAN TOMBS.*

THIS ancient town, like all Roman towns built in the Middle Ages, is situated on a steep height, evidently of volcanic origin, and affording evidences of igneous action in all directions.† It became celebrated through the continuous discovery of subterranean tombs of an antiquity apparently anterior to the foundation of Rome, being part of the Necropolis of Tarquinii, one of the principal cities of the Etrurian ‡ Confederation. Corneto contains a palace (soderini) and a church, Sta. Maria-Castello, which, with the mediæval walls and towers defending the town, deserve attention; but the Etruscan tombs are the chief objects of interest, as they are the only evidences of the ancient pomp of the Tarquinians, once the rivals, and finally the vassals, of Rome. The ravages of the Goths and Vandals, and even the soldiers of Belisarius and Narses destroyed most of the towns of Etruria, and with them Tarquinii, of which only some remains of the temples and fortifications are visible on the plateau, which is divided by a narrow valley from the Necropolis, which occupied a portion of the height on which Corneto is built.

The tombs being subterranean and covered by the natural soil, fortunately escaped the rapacity of the barbarians, and remained unobserved till so late as the year 1780, when the first discovery was made by Cardinal Garampi, and it was not before the year 1831, that productive excavations were commenced. Indeed, the contents of the greater part of the tombs are still unknown, as the owners of the fields are not willing that their property should be broken up for the purpose of research: fortunate investigations have, however, brought to light others in the same district, at Ceres and Vulci; but the most important and the richest in specimens of Etruscan civilization are those of Tarquinii. The tombs are sometimes found isolated, sometimes connected together by corridors; and they often form large public burial-halls, the covering of which is supported on pillars. They have all been excavated in the compact tufo, but the steps descending to them were not subterranean or covered over. These temples of death belong to various epochs: several have inscriptions of the time of good Latinity, while others, dispersed in the districts of the sea-coast, are covered over inside with monstrous sculptures of gigantic heads with dwarfish bodies and remarkably small limbs. as these are accompanied by inscriptions in debased Latin, it may be considered that these defects are the consequences of a decided decline in art. The case is different with the tombs decorated with Etruscan paintings and characters; these bear the evident stamp of an age long passed away. The proportions of the figures drawn on the walls are very correct, though those of the men are somewhat slender, and they retain the peculiar mark of the ancient Etruscan school, in a certain rudeness of style and meagreness of execution. The exaggerated size of the nose, which is also found in several Etruscan statues, attracts attention in many of the figures.

It may be supposed that this mode of representation was rather intended for a conventional sign of strength than a true representation of any personal defect, particularly as the same is found in a much greater degree in old Mexican paintings. Other accessories besides the painter's brush were employed to adorn these excavated chambers,—instruments, couches, bronze urns, weapons, shields, jewellery, glass, and vases in terra cotta. All these are now in the museums in Rome, Paris, &c. Among them, the vases are beyond doubt the most valuable objects, and they may be divided into four classes, answering to as many different epochs. The first, which is the oldest, presents a coarse mass of heavy shape, imperfectly baked, covered with a rough glaze, and full of inequalities, the ornaments only linear, the figures of men and animals stiff and inanimate,—all indicating the beginning of art. The second kind has black figures, with some white tints and purple colours in the ornamentation, on a red ground,—the drawing still somewhat extravagant and mannered, though progress is observable, and the faults are perhaps the result of the control imposed on the artists by tradition. The Etruscans, who bore so strong a resemblance to the Egyptians in their spiritual and civic hierarchy, must, like them, have taken a long time to deviate from their original types. The third class, which is the Grecian, is the most perfect; the figures are painted in vermilion on a black ground: the vases of this epoch can bear the test of comparison with those found at Nola, near Naples,—indeed, their colouring is more brilliant, and the workmanship is just as pure and elegant. The fourth kind dates from the time of the Roman dominion, and shows but too plainly the decline of art, in the pale tints, the inferior drawing, and the Latin inscriptions. The most remarkable of these vases,—those of the third class,—appear to be archaistic, as they contain representations of Grecian deities and heroes, as Jupiter, Neptune, Juno, Minerva, Hercules, Achilles, Patroclus, Priam, Andromache, and often the contests of Athletæ. The inscriptions, to which the artists added their names, are also in Attic characters and dialect. According to competent authorities, these vases are the productions of the time between the 74th and the 124th Olympiad, or from the 3rd to the 15th century of the foundation of Rome. If this statement is correct, art must have made its way sooner among the Etruscans than among the Romans,—and the presence of Corinthian and Doric painters and sculptors, brought to Tarquinii in the suite of Demaratos, might be strongly argued, for history gives us no information whether Hellenic colonies existed previously in this part of the Italian peninsula. Moreover, with the exception of these vases, all else that have been found in the tombs of that epoch, utensils, weapons, paintings, inscriptions, are Etruscan in style and language. Now, it is hardly probable that a colony should have thus exercised its influence only on one branch of art, and not have caused modifications in other usages and modes of manufacture. The best explanation of the difficulty appears to be the supposition that the plastic objects bearing the stamp of Grecian art were imported as articles of luxury from Magna Grecia, which was not far distant from Etruria, and whose inhabitants were skilful navigators, and well versed in commercial pursuits.

A description of one of the most remarkable tombs, excavated in the ground at the distance of some 5 to 600 mètres from the town of Corneto, may afford a general idea of the whole. The steps down to the tomb are cut in the volcanic rock, the face of which is scarped perpendicularly, to a breadth of 1½ mètre,* to allow a low, narrow doorway, by which a portion of light finds its way into the tomb. The tomb has four equal sides, of 5 mètres, by a height of about 4 mètres. If the ceiling were not slightly curved in a segment, the whole would form a parallelopipedon. This arch is painted chequerwise, in squares of yellow, red, and blue; the two first colours are ochre, the last appears to be a preparation from copper,

* Extracts from Travels in Italy, Greece, and the Levant, in the Notizblatt of the *Allgemeine Bauzeitung*. Vienna. January, 1853.

† Thirty-eight miles N.W. of Rome, near the sea-coast.

‡ Etruria, the country; Etrusci, or Tusci, the inhabitants. There were twelve confederated states.

* A mètre is a little more than 3 feet 3 inches English.

like that frequently employed at Pompeii. A coarse imitation of ivy-leaves and fruit twines round a projecting band, representing a cross-beam, which divides the chequer-board into equal parts. The green of these leaves, not being so fast a colour as the blue, has nearly disappeared, but the violet-black of the fruit has lost nothing of its strength, and we may suppose that it was prepared from oxide of manganese. The walls of the tomb are ornamented with figures, 10 centimètres high, painted in fresco, with a reddish-brown flesh colour; the drawing dry and meagre, but the movement very natural. Placed on the walls on the sides of the tomb, two and two together, in a single row, no knowledge of perspective and composition was required in drawing them. The men have only a simple drapery around their middles, the rest of their persons being naked; but the females are enshrouded in long, ample robes, of elegant material, the transparency of which allows the shape to be distinguished. Woven materials, and the means necessary to produce them, were therefore known at that time. An addition to the flowing robe is a mantle, or kind of pelerine, with a broad collar, which, being open in front, and reaching down to the hip, deprives the figure of all elegance, through the stoutness of its material, which admits no throw of drapery. Many of the figures are represented as dancing and playing castanets; their feet covered with half-boots, made of leather, or very stout grey linen. Naked men practise riding; but instead of sitting astride, they sit like females, with their legs on the left side of the horse. The horses are of a very diminutive breed, unless the artist has purposely made them small, in order to render the horsemen more conspicuous,—a conventional artifice, often observed in ancient paintings and bas-reliefs. A person, who appears to be the most important, and is perhaps intended to represent the deceased, is seated at a table, with a slave standing and waiting on him: under the table are seen a cat, a cock, and a partridge: very badly drawn trees, and birds flying, are introduced between the figures. Such is the style of the monument, which resembles a boudoir rather than a place of burial, and the appearance of which so clashes with our present customs and belief as to produce a painful sensation. Here is the last abode, and nothing to remind us of death. Nothing allusive even to family remembrance, mourning, or to any religious feeling; on the contrary, in the midst of dances and festivals, nothing but the careless expression of mere earthly pleasures is observable. And yet, the Etruscans were a serious people, bound to a strong belief, who had given great power to their priesthood; consequently, this apparent indifference with regard to the everlasting separation can only be accounted for by supposing that they held the Eastern dogma of death being a benefit, and a happy transition to a better state of existence, and that, under such impression, with them lamenting for the deceased would have been grieving at his good fortune. C N D.

THE PROPOSED BRIDGE FOR WESTMINSTER.

ARCHITECTURAL COMPETITION.

As there is a Bill now before Parliament for transferring the estates and property of the Westminster-bridge Commissioners to the Commissioners of her Majesty's Works and Buildings, and to enable the latter to proceed forthwith to build a new bridge, we think it proper to call especial attention to that part of the report of the select committee of the House of Commons, appointed in 1846, to "consider the present state of Westminster-bridge," &c. which has reference to designs for any such bridge. The committee, after stating that they had received several designs for a new bridge, and had directed them to be lithographed and placed in the appendix to their report, remark that they do not feel it to be within their province to give any opinion of the relative value of these productions, but that they do not, however, consider it to be inconsistent with their duty "to recall to the attention of the House a suggestion applicable to the erection of all public works; it was made to the committee of 1844, by a gentleman already cited [Mr. Hosking], who appeared to have given particular attention to the subject." "The substance," the report proceeds, "is stated in the following paragraph.

"'On the mode by which, through such competition as might best secure the application of the first talents to the production of the best designs, and might thence enable some superior authority to select one from all, or to combine different parts from two or more, Mr. Hosking stated as follows (and your committee concur generally in his opinions). "The essential matters should be defined by the proper authorities, in the first instance, and before attempts are made to obtain designs. A specification of what is required should then be made, and this should be more or less particular, as it may be determined either to fix a sum of money as the limit of expense, or, on the other hand, to receive designs with reference to the object, and without limiting the expense. Such a specification should be put into the hands of a reasonable number of competent practitioners, with a request that they would each make a design for the contemplated work, in accordance with the stated conditions. All the designs so obtained may be examined and investigated with the advantage of the presence of their authors, to explain what they may have intended, and to correct what may be misunderstood. In this manner the best energies of competent men would be applied to the work, and it is probable that the best result would follow. A general competition would end in general disappointment, as none of the persons who would be recognised as most competent would send designs without being specially applied to for them. At the time London-bridge was in contemplation, advertisements were issued for designs, with offers of some three or four premiums. Drawings were sent accordingly by seventy or eighty persons, and the premiums were awarded to the three or four which were said to be the best designs, but not one of them was used; they were immediately thrown away, and a design was taken up which had not been in the competition, but which, indeed, had been in the hands of the bridge committee beforehand, and the author of which was already dead. The late Mr. Rennie's design was executed. In order to avoid this apparent invidiousness and unfairness, and to secure the real benefits of a competition among competent men, the selection of the architects and engineers should be limited, and each should receive a certain remuneration for the work which he might send in. No man can afford to work for nothing. Every design asked for should be paid for, and no one ought to be asked, either directly or indirectly, to make a design, unless it be intended to pay him for it. If this system were adopted, the property in the designs so sent in would belong thereafter to the authority by the directions of which they had been sent in, so that the good parts of one design might be accommodated to the good parts of other designs, and the combined result of the whole would be something superior to that of any one individual design. This is one of the advantages from requiring designs from persons of known ability, and paying for them, so that all the designs obtained may be turned to account. It is the parties seeking designs, and who desire to derive advantage from the application of many minds to the same subject, that are to be benefitted, and they who seek a benefit must be contented to pay for it. It can never happen but that in several designs for the same thing there will be some points or parts in some of the designs, other than that which may be generally the best, better than the same points in the best design. When all are paid for, all may be used, and the best design in a 'concurrence' may be greatly improved by the incorporation of the excellencies of the others.'"

As these opinions are generally concurred in by the committee, and the suggestion appears to have their approval, they may be considered to recommend its adoption in the case of Westminster-bridge, and it may be hoped that the Commissioners of her Majesty's Works will feel themselves bound by the recommendation of that committee in obtaining designs for the new bridge.

THE PARK.—Sir: The advantage of an entrance to the park at "Albert-gate," Knightsbridge, is very great; but I think it will be admitted that its position (with reference to the road at that point) is not the best that might be selected; I therefore beg to suggest that the present "Albert-gate" be reduced in style and importance to a gate for foot passengers, and that a spacious and handsome entrance to the park be made a little to the westward, exactly opposite Sloane-street, and where High-row now stands; to be called "Albert-gate," and which might be constructed in a style worthy of commemorating the interest his Royal Highness has always taken in the arts.—R. G.

PROPOSED BRONZE STATUE OF CŒUR DE LION.

A VERY influential movement has been made in favour of the purchase of a bronze casting of Baron Marochetti's well-known Exhibition model statue of Richard Cœur de Lion, to be erected as a memorial of the Exhibition itself. A public meeting was held at Willis's Rooms on Saturday last, for the purpose of promoting the object in view, the Marquis of Lansdowne in the chair, supported by a strong force of noblemen and gentlemen, as well as ladies. Lord Lansdowne addressed the meeting, intimating that her Majesty had subscribed 200*l.* and the Prince Consort 100*l.* towards the cost. His lordship read a note from the Duke of Cambridge regretting his unavoidable absence from the meeting. Earl Granville also addressed the meeting.

Dear Master Builder,—I was nearly choked over my matutinal course of "Tea, toast, and *Times*," by a report of a "Great Meeting at Willis's Rooms, for the purpose of promoting the execution in bronze of Baron Marochetti's colossal statue of Richard Cœur de Lion, and its erection on some conspicuous site in the metropolis, as a memorial of the Great Exhibition of 1851." I must premise, by assuring you that no grocer, with a taste for the arts, throughout the British dominions, is less tainted with national prejudices than the one addressing you: if you doubt me, sir, ask Mrs. S. who, although she will persist in assigning my emotion to a crumb in the wind-pipe, has remarkable perception; or allow me to send you a copy of my side of a correspondence with that bigotted Miss Biddy Bricks on her disuse of *my* "Four-and-elevenpenny Bohea" in preference to a national combination of garden herbs. With the exception of being slightly in favour of Spitalfield silk, and good easy English bluchers, I am above depreciating foreign produce. But are we to be reminded in German, French, or Italian, of one of the most glorious epochs in our history? Are we to point out to our children the enormous effigy of the most pugnacious of warrior kings, as commemorative of an amicable commercial struggle, a contest merely of industry? With the greatest respect for the talented Baron Marochetti, who, as a sculptor, is undeniably great, it cannot be denied that the proposed reminiscence is absurdly inappropriate.

Let the 1st of May, 1851, be marked with a white stone, cut by a British architect, or let it be a cast in home-grown metal,—at all events, let it bear no foreign title to the purpose or the people; let it prove no insult to our Gibsons, McDowells, Marshalls, Foleys, and Bells, or such an opportunity may never occur again.

If the proposed statue is to be erected, so be it, but apply it differently; the metropolis affords too much want of ornamentation not to render it advisable, but one can as easily reconcile the idea of his late grace the Duke of Wellington taking the chair at a "Peace Association" meeting, or a figure of Bacchus adorning a temperance-hall, as acknowledge the fitness of the Lion-hearted Richard to represent the success of the never-to-be-forgotten Exhibition or his connection in any way with art-manufactures.

For a subject none would be more acceptable to the country than our dearly-loved Queen personifying Peace, and her august consort, from whom the grand notion originated, might rightly wear the emblems of Intellect or Science.

For a *souvenir* so much to be coveted, the very first name on the list of subscriptions would be SMITH, of London.

P.S. MRS. S. (who *really* is a remarkably sensible woman) quite agrees with me, and says she would rather have that wonderful specimen of "Wall's-end" remain to "mark the spot" than be frightened by the black man on horseback; *that*, says she, would ever remind us of our comfortab'e hearths and precious homes!

PROPOSED NEW ARCHÆOLOGICAL SOCIETY.—The Architectural and Archæological Meeting at Banbury has led to the proposal to form an Archæological Society for Oxfordshire, with meetings at Banbury.

NOTES FROM AMERICA.

The International Exhibition at New York.—The general superintendence will devolve on Capt. Du Pont, of the U. S. Navy, assisted by Capt. Davis, also of the Navy. There will be a number of superintendents of departments. Some of the departments will be subdivided into classes. The appointments, so far as decided upon, are as follow:—*The Chemical and Mineral* (including the mineralogical and mining features) will be in charge of Prof. B. Silliman, jun. of Newhaven. *Agricultural Implements.*—Col. B. P. Johnson, of Albany, secretary of the State Agricultural Society. *Machinery and Models.*—Joseph E. Holmes, esq. of Massachusetts. *Sculpture.*—Senor Patti, of New York. *Textile Fabric.*—Capt. Vincent, of the Custom-House. There will be a department devoted to the woods of the country, a gallery for the departments of Paintings, and other departments under a competent superintendence.——A New York correspondent of the *Boston Gazette* names 4th July as the probable day of opening. The 1st of June, however, was the promised day, after it was found that our go-ahead relatives could not have the building ready by the time appointed—namely, the 1st of May. In anticipation of a crowd of visitors, a large number of the "first class" hotels have resolved to charge 3 dollars a day for board. It is to be hoped this will receive no encouragement from the public. Large numbers of temporary ill-looking buildings are going up in all directions, intended for boarding-houses, many of which are supplied with a "saloon." Many of these establishments, like those of a similar character in London, will, it is thought, be sadly disappointed in their expectations. Grog-shops, too, are opening by the score. Franconi's Hippodrome on the line of travel to the Palace, and midway between the City Hall and that point of attraction, is pronounced to be one of the best of its kind—finer than the Paris Hippodrome—and will seat about 14,000.

New York Hotels.—The *Mirror* says, that when the St. Nicholas Hotel is completed, the Broadway front will be 300 feet in extent, and the entire building will cover two acres of ground, affording accommodation for one thousand guests. The proprietors of the Metropolitan Hotel, vast as their establishment is, are unable to meet the demand on them for accommodation. They have, therefore, been obliged to make arrangements for from one hundred to two hundred rooms in the immediate vicinity. A project is on foot to establish a large and splendid hotel on the Fifth avenue. It is a company concern, capital 500,000 dollars, the greater portion of which is already subscribed. In consequence of the high rate of rents, &c. all the hotels heretofore taking customers at 1 dollar 50c. a day, are raising the price to 2 dollars.

Massachusetts Statue of Webster.—A committee of the legislature reports a resolve, appropriating ten thousand dollars to be expended for a colossal statue of Daniel Webster, to be executed by an American artist, under the superintendence of three commissioners, to be appointed by the Governor. When completed, it is to be placed in the State House,—side by side with that of Washington.

The National Monument to Washington.—The state of Mass. is bestirring itself also in aid of this monument. The *Boston Transcript* advises the devotion of a day's pay, by all and sundry, to the purpose in view. Some five thousand dollars or so, meantime, have already been collected.

The Proposed New Opera-House for Boston.—The first instalment of the stock for the erection of a new opera-house has been paid in, and an additional lot of land has been purchased adjoining that previously bought, which, it is said, renders the site all that could be desired. In connection with this subject, the *Gazette* points attention to the necessity of having proper passages for egress in case of fire, and states that at the Howard Athenæum, in consequence of a hint that the license would not be renewed unless measures were taken for a freer escape in case of fire, the defect has been partially remedied.

The Public Library at Boston.—The Hon. Jonathan Phillips has made a donation of ten thousand dollars to the city of Boston, in aid of the public library. The income from this sum is to be annually appropriated for the purchase of books, and if, from any cause, the principal of the fund is reduced, the income is to be added until the original amount has been accumulated.

An "Atmospheric Telegraph."—An idea, published some years since in the *Builder*, and afterwards taken up by the *Athenæum*, appears to be on the way to realization at Boston and New York,—namely, the transmission of letters and parcels through a tube by the force of atmospheric pressure. A model, which is being exhibited at Boston, it is said, transmits packages "with lightning-like rapidity." Mr. I. S. Richardson, its inventor, proves, it is said, to all, the entire practicability of transmitting letters or packages, by atmospheric power, to any distance. A company is to be formed, to bear the title of "The New York and Boston Atmospheric Despatch Company."

Silvering Mirrors.—The Rev. L. L. Hill, the alleged inventor of coloured daguerreotypes, is said to have discovered a new process of making mirrors. It is a method of silvering glass without tin foil or quicksilver, which secures a mirror invariably perfect, at half the usual cost, and which cannot be defaced without breaking the glass. If we mistake not, something of the sort has already been invented in this country.

Coating Iron with Copper.—A process, said to have been invented by Mr. E. G. Pomeroy, of Baltimore, is thus described by a committee of the Franklin Institute of Pennsylvania, in the *Journal* of the Institute:—"After the iron has been cleansed by rubbing and pickling, it is dipped for a moment in diluted sulphuric acid, then withdrawn, and the adhering acid quickly dried up by holding it over a hot fire. The iron is then again dipped in a thick slip of rather fusible clay, which is dried up as before by exposure to the fire. The plates thus coated are placed in a suitable furnace, and raised to a heat considerably above the melting point of copper: in this state they are dipped, one at a time, in a bath of copper kept in a state of fusion in a reverberatory furnace. The clay coating of the plate, rendered still more fusible by the silicate and sulphuret of iron formed at the heat employed, separates as a fluid slag on the surface of the bath, as the iron plunges beneath it, and the iron is withdrawn covered with a uniform coating of melted copper." There seems to be some doubt whether the coating be effectual without rolling.

Improvement in Stone-Sawing.—A Patent has been granted for an improvement in machines for sawing stone, to John T. Bruen and James G. Wilson, Hastings, New York. They claim the lifting of the saws at or sufficiently near the middle of the stroke, and the interposition of India-rubber, or its equivalent, between the ways and the inclined projections which lift the saw-frame.

Aerial Shipping.—In the *Journal of the Franklin Institute* of Pennsylvania is a proposal to build a slim and light kind of iron-ribbed screw steamer, with floats or fins, and wheels, with inclined planes at its sides, from all of which, in due working order, it is anticipated that the steamer will not only run over the ground, but off it, and fly on the principle of "the flying fish, which progresses by means of the spiral action of the tail, while its extended fins support it for a time in the air." The screw it is proposed to make larger than that of a nautical vessel, with twelve blades of boiler iron, and on the upper edge of each blade a strip of a cylindrical plane, with axis coincident with that of the propeller, so as to prevent the too rapid escape of the air. The projector, Mr. Theodore Poesche, looks to carbonic acid gas as the most hopeful motive power for such a purpose, but he is persuaded that the present improved steam-engine is itself entirely adequate.

BOILER INCRUSTATIONS.—It is stated in the *Lawrenceburg Register*, a United States paper, that Mr. Ira Hill has accidentally discovered that sawdust is an effectual preventive of incrustation in steam-boilers.

PROVINCIAL NEWS.

Grantham.—The town council have granted a site on St. Peter's-hill for the erection of a statue to the memory of Sir Isaac Newton, and 100*l.* for the preparation of the ground for its reception, and have authorised the ex-mayor to lay the resolution before the Royal Society, with the request that it will take such measures as its council may deem fit. The inauguration of the statue could not take place until 1854, which would be exactly 200 years after Sir Isaac Newton had entered a free boy on the foundation of the Grantham Grammar-school. Lord Rosse, the Duke of Rutland, Lord Brougham, and Lord Harrowby are said to have expressed their approval of the proposal.

Stamford.—The parishioners of All Saints have resolved at a vestry meeting to repew the parish church, and make other alterations, whereby additional accommodation will be got. The works in interior of St. Mary's are progressing. The pews have been removed, and the floor has been re-laid with the old marble slabs: the base of the pillars in the nave is now seen. On removing the pews in Corpus Christi Chapel two sepulchral recesses were discovered: they are not alluded to by Peck, who published his "Antiquities of Stamford" in 1727. One of the recesses contained the recumbent figure of a female; the face and drapery in a good state of preservation, but the hands and feet knocked off. The projecting moulding of the recesses had been mutilated to admit the back of the pews: a similar act has been committed upon the piscina in the south chantry. Several monastic pieces, local half-pennies, and farthings of the reign of Charles II. have also been found.

Horncastle.—The chief stone of the new church at New Bolingbroke was laid on Thursday in last week.

Alford.—The exterior of the new vicarage-house in this town is approaching completion. It is built in the old English style of the Tudors.

Gloucester.—The restoration of the south porch of the cathedral has been commenced.

Keyham.—According to the *Devonport Independent*, the new steam-yard and docks at Keyham are now advanced towards completion. The establishment, it is believed, will be opened during the summer. The basin, docks, wharf, and other parts are formed of fine wrought granite, from the quarries of Messrs. Freeman, and with the other works are executed by Messrs. Baker and Son. Two cranes by Carmichael, of Dundee, stand 40 feet vertical from the coping of the south basin; they can plumb 35 feet, and their power has been tested to the extent of 40 tons. The north basin is provided with a crane by Fairbairn, of Manchester, which is to be tested to the extent of 60 tons. Messrs. H. and M. D. Grissel, of the Regent's Canal works, have supplied the Government with five caissons for closing the entrances to the docks, &c. These machines are of a peculiar make, designed by Mr. Scamp, assistant director of works at Somerset-house. The buildings at Keyham are progressing. The entrance is near the south-east corner, where a station for fifty policemen and a guardhouse for the military are in an advanced condition. At the head of the docks is a large fireproof smithery, with lofty granite chimney shafts at each corner; this building, with the fitting shops and sheds further on, is complete. The principal erection, the foundation and plinth of which is only laid, will be the quadrangle to the east of the north basin: the quadrangle will contain stores for the engineer, and for the copper, brass, and white smiths, and two boiler houses: the centre will be occupied by the foundry. The drainage of the works is arranged so that water can be thrown from one dock or basin into another, however distant. The engineer-in-chief is Colonel Williams, of the Royal Engineers, and the engineer in charge of the works is Mr. R. Townsend, civil engineer. The buildings are from designs by Mr. Scamp and the department of the Director of Works. About one million sterling has been expended on Keyham, and it will require some 300,000*l.* to complete the establishment. The docks cost each about 45,000*l.* while on one at Sheerness, not so large, 125,000*l.* were spent, owing partly

to the difficult foundation. The west dock at Woolwich, which is only 300 feet long, cost 90,000*l.* The new caissons at Keyham cost, on an average, 4,500*l.* each.

Wolverhampton.—The chief stone of the School of Practical Art is to be laid by Lord Hatherton, on the 21st inst. The school has already been temporarily opened. The number of members enrolled week before last, according to the local *Chronicle*, was 105. The supporters of the institution anticipated that a great majority of the members would have been workmen connected with the trade of the various japan manufactories, but the analysis at present shows only about fifteen per cent. from that body.

Birmingham.—The operations for the demolition of the old tower and spire of St. Martin's are rapidly proceeding. A considerable amount is still required to conclude the work, and the liberality of the Birmingham public is still appealed to.

Uttoxeter.—The plans for the proposed town-hall, and for the cattle-market, have been decided on: Mr. Fradgley, of this town, is the architect of the former. The committee have made arraugements to exhibit the designs at the Red Lion inn, on 15th inst. The ceremony of laying the first stone of the building will take place about the end of June.

Derby.—A preliminary meeting towards endeavouring to procure a Corn Exchange for Derby, has been held, and a requisition presented to the mayor to call a public meeting, to take into consideration the best plan of carrying out the project, and selecting a suitable site for the erection.

Pudsey.—On 28th ult. the new Sabbath School erected by the teachers and friends of the Methodist New Connection Sabbath School, Fartown, Pudsey, was opened. The total cost of the building, exclusive of the ground, amounts to about 120*l.* towards which 51*l.* 10s. had been obtained in subscriptions. The school is 8 yards by 15 yards.

Halifax.—The chief stone of a new church was laid at Mount Pellon on Tuesday in last week. The design is by Messrs. Mallinson and Healey. Mrs. Lancashire and Mrs. Brook, of Birks-hall, presented a site, as well as a donation of 400*l.* towards the building fund. There will still be about 300*l.* to raise.

Doncaster.—Notices have been issued for a meeting at the Guildhall to attach the corporate seal to a memorial and petition for an Act for establishing general cemeteries.

Whitehaven.—It had been arranged that the plan of Mr. Porter, of London, for the proposed new workhouse for the Whitehaven Union, should be adopted, a guarantee being taken that the expense should not be above 5,000*l.* Unfortunately, however, it is said to have just been ascertained that some error had crept into the calculations, and that to carry out the plan as submitted by Mr. Porter and adopted by the workhouse committee and the board of guardians would involve the expenditure of a much larger sum than 5,000*l.*

Edinburgh.—The lord provost stated at a recent meeting of council that forty acres belonging to the city at the Dean would be given up to the public as a park, for the rent of 24*l.* a year now paid for the land; and that if desired, forty acres more in the Meadows would also be given up, thus forming two convenient parks, one at the north and the other at the south side of the city. What with the East Princes-street Gardens, Calton Hill, King's Park, Salisbury Crags, and Arthur's Seat, there is no city better provided with places for recreation and exercise already than Edinburgh.

Inverness.—Culloden Brick and Tile Works at Inverness are now, it is said, the most extensive in Scotland. During the last season, exclusive of Moray, Nairn, Inverness, Argyle, Ross, and Sutherland, 1,523 tons of drain tiles have been exported from Culloden to Caithness, and 160 to Orkney and Shetland. The bricks are also considerably run on for building purposes. The pottery branch of the establishment yields milk-plates, butter-jars, flower-pots, chimney ornaments, &c.

St. Peter's Port, Guernsey.—The contract for the execution of the first section of Mr. Rendel's plan for the improvement of the harbour of St. Peter-Port, and of the wet dock, has been executed by the States Committee on the one part, and by Messrs. T. C. Le Gros and Philip De La Mare, of Jersey, on the other, and a surety bond for due performance of the contract entered into by Messrs. Philip Le Gros, and — Gallichan, also of Jersey. The sums at which the works are taken by the contractors are respectively 43,840*l.* and 4,459*l.* less 1,390*l.* for plant and materials given up by Messrs. Hutchings and Co. the former contractors. The contractors are allowed till April, 1856, for completion of the works, but it is probable that they will be finished considerably within that time. The construction will forthwith, we understand, be commenced simultaneously at both extremities.

AGAINST SABBATH-BREAKING AT SYDENHAM.

I HAVE been a subscriber to the *Builder* from the commencement,—always a careful, and frequently a delighted reader of its admirable articles,—and I believe that its high and varied talent,—its moral rectitude,—its regard for religion (apart from sectarian views),—its noble advocacy of what is benevolent and good,—and its stout opposition to what is bad, narrow, and selfish,—has raised it to its present position: the *Builder* has gained the public ear, and commands attention because it deserves to be heard.

Now, Mr. Editor, pray do not lend a hand to undo the good that you have done: you have accomplished a great work by giving a better moral tone to thousands of minds,—you have stirred the depths of feeling, and created sympathy for the poor, crammed into wretched hovels and damp underground cellars,—you have demanded fair pay for the labourer, whose wages may have been "kept back by fraud" by some slave-driving employer,—you have written and spoken for the decayed trader,—for the multiplication of places of worship, schools, and almshouses,—for drainage and ventilation,—for the light of science in the mind, and the light of heaven in the window,—in a word, you have always hitherto been "ready for every good work," and your success has been equal to your efforts. Now, Mr. Builder, I repeat, do not undo what has been done, by advocating the opening of the Crystal Palace on Sundays. The two paragraphs lately published in your journal have disturbed the comfort of many of your readers, and led to a fear that *you* are in favour of this truly desperate step. Both articles are full of fallacies,—false conclusions from false premises. Neither the "Old Boy" nor "Anti-Gloom" appear to remember that the Sabbath is of *Divine* appointment,—that the fourth commandment is as binding upon Christians as upon Jews,—that "the *seventh* day" (whether Saturday or Sunday), is "the Sabbath of the Lord our God," and that we have no more right to break the fourth commandment than the seventh or eighth, or indeed any other of the ten. How puerile is the reasoning (if reasoning it may be called), that because many thoroughly debased persons spend Sunday in playing skittles, drinking, and fighting, therefore we are likely to elevate and reform them by taking them to Sydenham on Sunday afternoons! Sin is sin, whether at Sydenham or Rag-fair. There cannot be any moral or reforming influence resulting from an act in itself wicked. The Sydenham "convert" will assuredly find his way to the "Red Lion" or "Paxton's Arms," and reel back to his miserable dormitory "as drunk as a lord," unless thrust into some "lock-up" by the way, to await an interview with "his vorship" on Monday morning. Much is said about the "cant" of those who advocate Sabbath observance; I affirm that the "cant" is on the other side of the question. Is it not sheer cant to talk of the privilege of the "working-man's Sabbath" at Sydenham, and its immense benefits, and then to charge for its enjoyment? Is it not cant to tell us that Sabbath desecrations will benefit the poor man? Why, if you follow out this principle to its inevitable conclusion, the rest of the Sabbath would be annihilated, and the labourer's toil incessant! Read the flimsy arguments of the "Old Boy" again, and say if they are not cant,—beginning, middle, and end! And as to "Anti-Gloom," all he advances has been so often refuted that one wonders that your vigilant eye allowed such stale and "vain repetitions" to slip into your intelligent columns. His very signature is cant! "Anti-Gloom" forsooth! of course implying that the Sabbath is a gloomy day. To whom is it a day of gloom? Not to the sturdy, honest, Christian workman; to him and his wife and children it is the best, the happiest, and brightest of the seven; but to the drunken spendthrift, who "wastes his substance in riotous living," and after the prolonged debauch of Saturday night, awakes to behold his ragged wife and starving children, his dirty room, and empty cupboard. Is it not the quintessence of cant to tell us that the remedy for such social and moral degradation is a trip to Sydenham on Sunday afternoon! Is it asked how such cases are to be remedied? I answer, *they are being remedied.* Every new church, chapel, or school,—every model dwelling-house and refuge for the houseless,—is a step in the right direction,—every visit of the minister or city missionary,—nay, every visit of the sanitary inspector, and every drain-pipe which is laid down, is helping on the good work. If we wish society reformed, and men made happy, we must not begin by breaking God's law. We have risen to our present eminence by *observing* the Sabbath: let us stand by old principles, and if faithfully carried out they will result in the happiness of the masses of our population,—in England's glory and the world's benefit.

B. G.

ZINC PAINT.

IN reference to a paragraph in your last number but one, the rusty spots on the architect's house are chiefly attributable to the chemical action of the two pigments. The entire decay of the paint will, I doubt not, shortly ensue. Whenever durability is desired, the mixture of differently based pigments should be avoided as much as possible.

Se non seguite i miei consiglii
Perche lagnatevi dé tuoi mal fini.

Here, although the admixture of lead with zinc paint is expressly and repeatedly referred to as most injurious, we still find men of intelligence running into this very error, and then complaining of the result. The oxide of zinc is made from spelter or sheet-zinc, and, from the increasing demand, is now imported from various foreign smelting-works in a very impure state, combined with various chemical agents, causing it, when mixed or ground in oil, to change colour, crack, wash off, &c. &c. In the second, the white oxide during the process of grinding* is often subjected to great adulteration (paint is often sent abroad with but 7 lbs. of white lead per 1 cwt.) by the addition of certain earths and other inexpensive materials, which cannot easily be detected without a tedious analysis. Hence the complaint of want of body or covering property.

The public have now the power in their own hands. Let them only buy zinc paint of such dealers as will guarantee its purity, and then select such master-painters as will undertake to superintend the fair application of the material, not allowing any composition of lead, either in the state of paint, boiled oil, common or patent dryers, to be mixed with it; then will zinc paint's superior properties be made apparent,—not only as regards its unchangeableness of colour and great durability, but as to a still more important point—its innoxious and sanitary qualities. In store it should never be covered with water, but with oil, or merely kept excluded as much as possible from the air.

LANGSTON SCOTT.

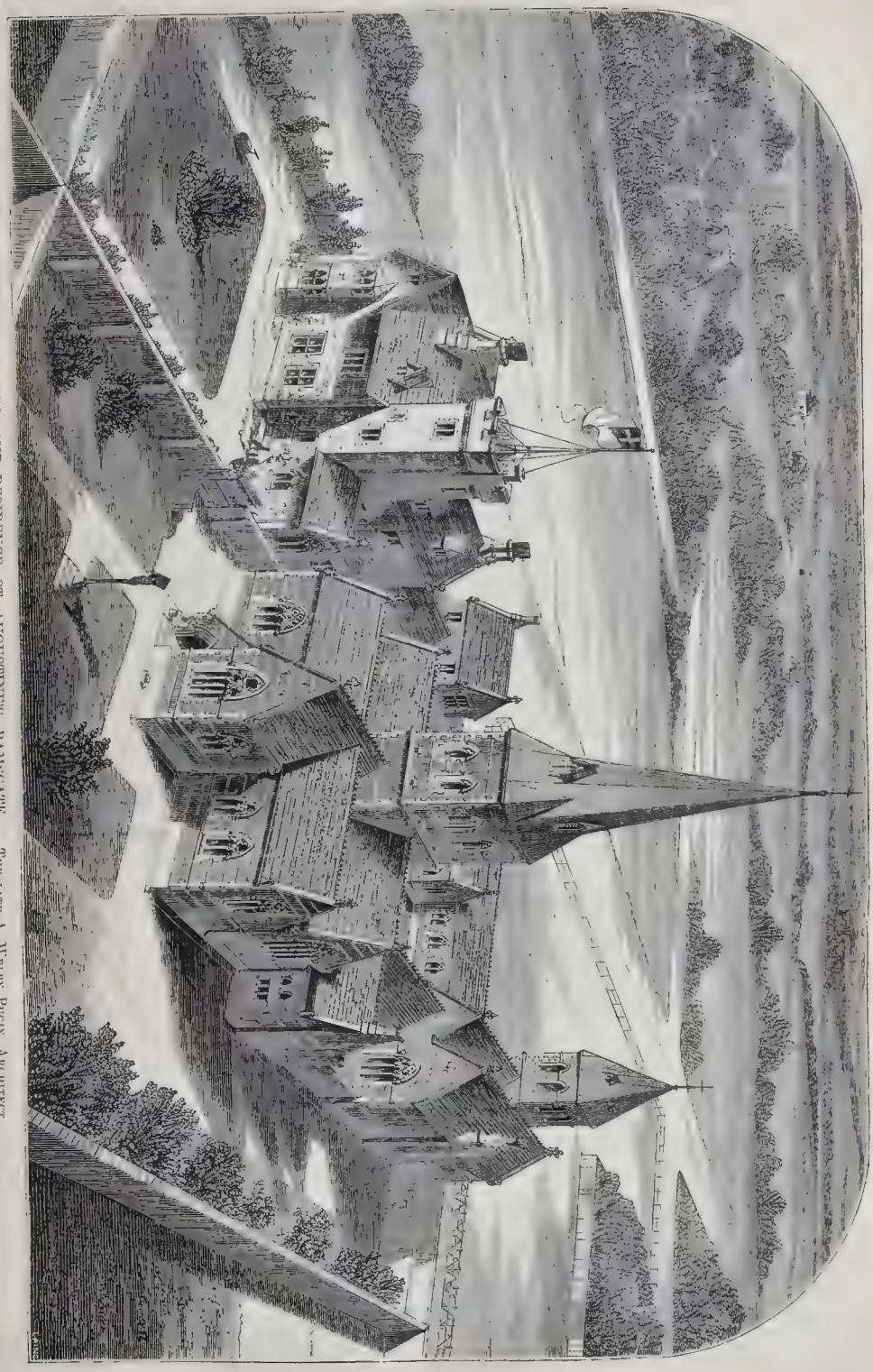
ST. AUGUSTINE'S, RAMSGATE.

IN our notice of the life and works of the late Mr. A. W. Pugin, we described the church, school, and residence which the deceased architect had built at Ramsgate.† In our present number we give a general view of the whole pile, and will add a view of the interior of the church hereafter.

The church consists of a nave, chancel, tower, Lady chapel, and south transept,—the tower separating the nave and chancel. From the east end of the church, northward, extend a sacristy and school, with bell-turret. Farther east is a pile of dwelling-houses, partaking of the same character; and at the west end stands what was Pugin's own residence, the whole forming a large group at the extremity of the West Cliff, the termination of the town, very prominent on entering the harbour. The church and school, externally, are of flint, with plain bands of Whitby stone at short intervals. The tower is carried up ready to receive the spire, and upon it is erected a lofty wooden cradling, or crow's nest, visible from a considerable distance at sea. The style throughout is Decorated. The residence is of brick, with a battlemented tower.

* The operation of making paint consists in mixing the powder with oil in what is called a mash-tub, and then passing the mash through a pair of horizontal stones, the lower one being fixed, the upper rotating on its axis, and both being grooved symmetrically. These deliver the paint in a butter-like substance, which the painter thins out for use with oil and turpentine in various proportions, according to the work intended to be done.

† Vol. x. p. 603.



CHURCH, SCHOOLS, AND RESIDENCE, ST. AUGUSTINE'S, RAMSGATE.—The late A. Welby Pugin, Architect.

WAGES MOVEMENT.

SOME of the bricklayers at Beccles having struck work for an advance, their wages have been raised from 15s. to 17s. a week.

At the Crystal Palace, Norwood, about 400 of the navvies employed lately struck for an advance on their present wages, which are 3s. a day. The demand was not conceded, and many of the men thereupon returned to work.

The Portsmouth carpenters and joiners are endeavouring to obtain an advance of 6d. a day, and ten hours' work instead of ten and a half. The masters think that the question of an advance of wages should be left to the discretion of individual masters, but they were willing to recognise the principle that ten hours should be considered a day's work. They would not object to raise the wages of some of the most skilful workmen, but they considered a general advance to be unreasonable. The secretary of the workmen had addressed a further letter to the secretary of the masters' association, pointing out that the men now receiving 3s. 6d. a day ought to be considered best workmen, and intimating their determination to seek higher wages elsewhere, if not conceded here. The *ultimatum* of the masters, however, was, that "they declined to make any increase in the standard rate of wages in this neighbourhood." One of the workmen stated that his employer had said to him:—"I value some of my men, and I will at once meet you half way, by giving 3d. a day extra to certain of the best workmen; but I cannot make it general unless it were general also with the masters." This offer was cheered by the meeting of workmen in which it was announced. Their chairman deprecated strikes, and gave the meeting some other sound advice. The men were to meet their respective masters and endeavour to come to an understanding with them. The *Portsmouth Times*, in reporting proceedings, commends the general bearing of the men, and says:—"One suggestion we would make as to the point in dispute. Why do not masters and men agree to abolish the system of day-work, and pay for all work by the piece, on a scale mutually agreed upon? This system has been found to answer admirably. A master in a trade analogous informs us that on this plan his men earn better wages, he himself is a gainer, he considers, to the extent of one-third, as compared with the old system, and his apprentices acquire a better knowledge of their business. Carpenters' work must be well adapted for the carrying out of such an arrangement."

The workmen in several branches of trade at Teignmouth have had their wages advanced.

The Swansea plasterers having requested an advance of 3s. a week, two of the masters at once acceded, and the others, it was thought, would shortly follow their example.

The Birmingham painters, plumbers, and glaziers, have requested an advance of 2s. a week, and ask that the hours of labour be restricted to ten hours a day, with the exception of Saturday, when they are to be only nine hours. The operative plumbers, as appears from an advertisement, "most decidedly disclaim any participation in the movement, as, hitherto, any matter requiring adjustment between them and their employers has been conducted to an amicable issue by themselves solely, without the interference of painters or any other party."

At Manchester, the wages question between the operatives and their employers is yet by no means settled, and the danger of a turn-out appears more imminent. The police force here have struck or resigned in great numbers, on being refused an advance of wages.

The power-loom weavers of Stockport having, many of them, given notice to cease work on Monday, unless the ten per cent. they demanded were conceded to them, the employers met this notice by intimating to the engineers and mechanics on the premises that their services would also be dispensed with at same time.

In the neighbourhood of Glossop, the short-time movement is disturbing the minds of the employed, and the adults at Glossop Dale have resolved, on and after Monday next, to cease labour at six o'clock in the evening, in conformity with the plan adopted first at Ashton and Stalybridge.

The whole of the platelayers between Liverpool and Manchester, on the North Union, on the Bolton, and on the Clifton Junction lines, have been paid off, in all about 200 men. The company offered to raise the pay of the 14s. hands to 15s. but refused to make any further advance in the wages of the platelayers.

The cabinet-makers of Burnley have succeeded in obtaining an advance of 2s. a week on their former wages. On Thursday, in last week, a meeting of the operative painters and plasterers was held, when it was resolved that a deputation should wait upon the masters and request an increase of about 2s. a week.

The Wigan strike of operative joiners still continues. The masters offer to give an advance of 2s. a week, but refuse to concede the tea half-hour. The men decline to resume work unless the half-hour is granted. The plumbers are also on strike, their demand being an advance of 3s. a week, viz. from 21s. to 24s. Two of the employers have agreed to give the sum required; but the rest have not yet yielded. The turn-out of brickmakers has not yet ended. The employers have agreed to give the advance asked for, 4d. a thousand; but refuse to lessen the size of the moulds half an inch, as demanded by the men.

The joiners in the St. Helen's neighbourhood having had meetings on the wages they receive, namely, 24s. a week, demanded an advance of 2s.; and not having received any intimation that their request would be acceded to, they determined not to work after Saturday week, on which day they received notice that an advance of 2s. would be given if the men would give up the tea half-hour in the afternoon; but this the men refused to do. They continued out until Wednesday, when they were informed that their request would be complied with, and a number of them went to work on that day. The painters also turned out on Monday, in last week, for an advance. The men wish to have a uniform rate of wages. This the masters refuse to comply with, and the men are still out.

A correspondent, "J. D. L." a journeyman joiner, complains of what a previous correspondent, who had also been a journeyman, says as to some foremen. As a class, "J. D. L." maintains, and in this we entirely agree with him, they would scorn to act in the manner alluded to. In allusion to the worth of workmen to masters, our correspondent says, "In admitting the right of an employer to pay off the man who does not give a remunerative return, clears away that worthless service;" and adds—"besides, if we all unite in asking 5s. 6d. a day, surely it will follow that masters with present contracts will be better off than if we were coming under your correspondent's sliding scale, more especially as the better-for-worse system, as he is pleased to call it, does very well in large firms, proving that the number of men is very great that would, according to his scheme, be paid between 5s. and 10s. a day, *which*, under the present system, *enables* the employers to pay those worthless hands of your correspondent 30s. a week, and a little to the employer's advantage." Now the interest of the masters constituted but a minor feature in the argument in support of which we quoted the passage remarked on by "J. D. L." It was the interest of the skilful and diligent workmen, we were there advocating, and according to "J. D. L." himself the wages of the unprofitable workmen no less than the just profits of the master are enhanced at the expense of a "number of men very great that would be paid between 5s. and 10s. a day" did each good workman get his due. Had our correspondent's allegation or inference been that there were but few entitled to more than the average 5s. 6d. which he advocates, that might have constituted an argument in favour of such an averaging or equalization of wages; but he himself infers that the very contrary is the case. Either way, however, it seems clear to us that any system of averaging or equalizing wages must afford an undue advantage and bonus to him who works below the average, and that this advantage he derives—not from the master, but—out of the hard-earned wages justly due to his own superior fellow-workman who is above the average; and to this clear inference we cannot reconcile ourselves: it is forced on our consideration by the general drift of the present movement, and, as we said before, that movement thus appears to be very likely to *necessitate* the adoption of some mode of dealing with workmen by piecework, under which every one will be paid according to the quantity and quality of work he is capable of doing and actually does; and thus the interest of the diligent and skilful workman will be materially promoted, and even the inferior be actuated by a stimulus which will promote *his* interest also, and increase his wages as well, by elevating his rank as a workman, to the advantage of his master as well as of himself, and above all, without injustice to his fellow-workmen.

JENNINGS'S INVENTIONS.—We are glad to find that the Society of Arts have awarded their medal to Mr. G. Jennings, for his various inventions in the shape of the India-rubber tube-cock, shutter fasteners, and water-closets. We are led the more readily to mention this because of the thankfulness with which Mr. Jennings has on many occasions spoken of the good effects which resulted to him from our first commendation of his efforts several years ago. According to his own statement, our notice, brief though it was, "built him a factory and filled it with men." We are very glad of it. Such results have been more frequent than similar acknowledgments.

Notices of Books.

A Popular Account of the interesting Priory of Llantony, near Gloucester, &c. &c. By JOHN CLARKE, Architect. 8vo. 1853. Gloucester: Needham. London: G. Bell.

THE author of this book published a volume on "The Architectural History of Gloucester," some time since (noticed in our pages), with several etchings by himself; he also read a lecture "On the Poetry of Architecture," in the famed city of his home during the last winter, from which evidence we infer that Mr. Clarke is not only a zealous lover of his profession, but that he feels a deep and laudable interest in the architectural antiquities of a place which abounds with such subjects. Any encouragement our words can give him he is therefore entitled to, and shall have it willingly. He has in the present case produced a very readable little volume, for which his fellow citizens ought to feel obliged to him, and afford him such assistance as may be in their power.

We may mention, by the way, that there have been found lately some very curious lamps, vases, and coins of Roman date, at Kingsholm, near Gloucester, also some Saxon fibulæ. One of the lamps, which is of gilt bronze of an ordinary type, has a portion of the suspending chain attached to it.

Miscellanea.

THE ARCHITECTURAL MUSEUM.—The Committee have issued cards for a conversazione at the Museum, on Wednesday, June 22nd, in order to make more generally known the extent of the collection, and scope of their intention. Most of our readers know that the object of this undertaking is to bring within the reach of every one practically engaged in architecture, and more especially in the revival of Ecclesiastical Architecture, a collection of casts taken from the best authorities, English and Foreign, of sculpture, effigies, mouldings, and ornaments, rubbings of sepulchral brasses, tracings of stained glass and mural paintings, pavement tiles, and even original work, where the removal might not be a spoliation; also, metal work, seals, and minor objects of the best periods of medieval art. An extensive and rapidly increasing collection has been formed in Canon-row, Westminster, where objects are deposited in chronological order, thus presenting an opportunity of recalling to memory the rich detail of the objects once visited; to the workman, a new means of improving his taste, of which from his inability of visiting original works he has been hitherto deprived; and to the amateur, the luxury of indulging his love of art by contemplating the finest works of the best periods.

CONVERSAZIONE AT THE MANSION HOUSE.—The lord mayor, desirous of giving an opportunity of meeting to those who, from their connection with educational institutions or pursuits, "are most interested in the present efforts of the Government and the public to promote the diffusion of a more general and practical knowledge of science and art among all classes," received a large number of persons, ladies as well as gentlemen, at the Mansion House, on Wednesday evening, the 8th inst. Bronzes, statues, pictures, and other works of art, had been gathered from all quarters, and afforded matter for conversation and enjoyment. A screen down the centre of the Egyptian Hall had on each side of it examples of our best painters; on a table at the further end, the bronzes issued by the Art-Union of London held an honourable position; while around the hall, on pedestals between each column, were statues by our living sculptors, amongst which those by MacDowell, Calder Marshall, and Foley, were especially noticeable. Upstairs there was an extraordinary collection of maps, diagrams, and educational models. The whole arrangement of the rooms—due, we believe, to Mr. Bunning—was excellent, and the evening was passed most satisfactorily and agreeably.

THE BRITISH INSTITUTION.—The exhibition of works by the old masters here is always one of the great treats of the year, and the present collection, with a small addition of works by deceased English painters, is inferior to few which have preceded it. Leonardo Da Vinci, Rubens, Murillo, Cuyp, Rembrandt, Both, Teniers, Wouwermans, Canaletto (singularly fine), and S. Rosa, are all well represented; as, too, are Reynolds (why was his ugly caricature exhibited?), Wilkie, Collins, Constable, and Turner.

THE CITY CENTRAL RAILWAY TERMINUS.—The proposed Central Terminus in Farringdon-street, we hear, has been abandoned, the Government having intimated their decided opposition to the scheme.

ARCHITECTURAL SOCIETY FOR THE DIOCESE OF LINCOLN.—The first meeting of this society was held on 2nd inst. in the Exchange Room, Nottingham, under the presidency of Colonel Wildman, of Newstead Abbey, one of the vice-presidents of the association. A large number of the clergy, gentry, *literati*, and inhabitants generally of the town and county of Nottingham and the surrounding district, were present; among whom were Sir Charles Anderson, of Lea; and Mr. T. Cullen, mayor of Nottingham. The walls, shelves, and tables of the Exchange Hall were covered with a large variety of drawings and specimens of objects of architectural and antiquarian interest—rubbings of brasses, casts, carved work, &c. The chairman, in his address, said that the name of the association sufficiently explained its character. It was intended to promote a proper style of architecture, especially church architecture, in this diocese. He had often been annoyed and almost disgusted at seeing the country filled by misshapen masses of incongruous masonry, and had felt inclined to wish that an architectural college was founded in the country, and that no one was permitted to practise this noble art who was not duly qualified to do so. Perhaps, however, this was a rather arbitrary feeling on his part, as no doubt in this free country every man had a right to build his own pig-stye in whatever form might be most suitable to his own taste. At the same time he did hope that through the instrumentality of societies like the present a new era was approaching, and that the bad taste which had so long prevailed would entirely pass away. Addresses were afterwards given, and papers read by numerous gentlemen present, of which the *Nottingham Guardian* of this week was to give a full report.

YORKSHIRE ARCHITECTURAL SOCIETY.—The general spring meeting of the members and friends of the Yorkshire Architectural Society was held on Tuesday in last week, at Selby, when a considerable number of clergymen and other gentlemen were present, as well as several ladies. The first paper, read by Archdeacon Churton, was "On the Remains of Penitential Cells and Prisons connected with Monastic Houses." At the conclusion of the paper, the Rev. F. W. Harper, vicar of Selby, said he had been requested by Mr. Scott to give some explanation respecting his absence on the present occasion. Mr. Scott had prepared a paper respecting "Some Explanations of the Results of the Recent Investigation of the Ruins of Doncaster Church, as throwing light upon the architectural history of that building," and had come to Doncaster, when he was informed of the death, on the night previous, of the wife of the vicar, caused, it was supposed, by her great exertions in some matters relating to the restoration of the church. Mr. Scott had thought it right, on this account, to defer for the present the reading of his intended paper. The next paper was read by Mr. Edmund Sharpe, "On the Abbey Church of Saints Mary and Germain, at Selby." At the conclusion of the paper, the party present, along with several others, accompanied Mr. Sharpe to the Abbey Church, where he pointed out the illustrations to which he had alluded. In the evening, a number of gentlemen visited the church of St. Wilfrid, at Brayton. On Wednesday, the members had made arrangements for visiting the neighbouring churches of Westow, Cawood, Riccall, Howden, Hemingbrough, &c.

STEAM TRAFFIC ON CANALS.—An experiment was lately made on the Leeds and Liverpool Canal, for the substitution of steam-power, in the haulage of coal-flats or barges, for the horses now in use. The great difficulty to be overcome is the damage to the banks of the canal, from the swell caused by the steam-vessel; but it appears to have been then shown that in the haulage of above 150 tons of coals, at the rate of two miles and a half an hour, by a screw-steamer, no perceptible swell was created. On Wednesday in last week another experiment was tried in the presence of several of the directors and the manager of the Leeds and Liverpool Canal. It was then shown, according to our authority, that at the rate of three miles an hour there was no perceptible difference on the surface of the water, whereas, when the speed was increased to between four and five miles an hour, there was a rolling swell following the stern of the boat, which washed the banks to the extent of about a foot in height. The use of steam in the haulage of coals will diminish the cost more than one-half; and it will tend, by increased speed, to add considerably to the traffic. The credit of this movement, according to a Liverpool paper, is due to Mr. William Laird, the manager of the Ince Hall Coal and Canal Company.

SOCIETY OF ANTIQUARIES, NEWCASTLE.—The monthly meeting was held on Wednesday, in last week, in the Castle, when a communication was read from Mr. Turner, bookseller, on the subject of the proposed lithograph of Mr. Story's "Mediæval Newcastle;" and Mr. Richardson read a brief paper on "Ancient Burials," suggested by the State funeral of the late Duke of Wellington.

ARTIFICIAL BLOCKS FOR HYDRAULIC PURPOSES.—The material called hydraulic lime, generally used for engineering works under water, is a silicate of lime, in a somewhat nascent state. A discovery has been made by M. Berard, of Paris, of a simple but most valuable process for manufacturing blocks for hydraulic purposes, and particularly submarine ones. The commonest argil is employed by the inventor, which is a silicate, with a base of alumina; a block of any required dimensions is, therefore, constructed of unburnt bricks, taken from the field and stratified in layers, with the fuel on some piles of bricks forming a grating. An outer casing of unburnt bricks a short distance all round the block is filled with powdered charcoal, the fire is placed at the base of the block, it soon rises, and heats the mass to a temperature which will soften argil: the contraction causes sinking sand vacancies, which must be filled up as they occur. When sufficiently burnt, the outer casing, which will then be burnt bricks, may be taken down, and the block removed to its destination. It will be seen that blocks may be made of any shape or size, having no limit but the possibility of carriage; and, when the operation is properly conducted, the solidity of the substance is remarkable: it requires great force to break them, iron instruments will not scratch the surface, steel scarcely mark them; and as concentrated nitric or sulphuric acid, or the most energetic alkaline solutions, will not have the least effect on them, they will be indestructible under the action of sea or any other water.—*Mining Journal.*

VALUE OF PROPERTY.—The following items were sold at the Auction Mart, on the 31st of May, by Messrs. Chinnock and Galsworthy.—Twenty-nine freehold villas and houses, situate in Peckham Gore, Wells-street, and Gloucester-place, Camberwell, producing 878*l.* per annum, and two plots of building-ground, having 2,200 feet of frontage, sold in one lot for 15,500*l.*; a freehold house and premises in Carnaty-street, Regent-street, let on lease for twenty-one years, at 60*l.* per annum, sold for 1,200*l.*; a plot of building-ground at Harlington, Middlesex, containing two acres, 380*l.*; ten acres of market-garden land adjoining, let at 58*l.* per annum, 1,400*l.*

IRONWORK AND STONE.—In your journal of the 4th. a correspondent recalls attention to the decay of iron railings. I beg, as a working mason, to say that I have fixed much ironwork in stone, and since the use of *Portland cement* I have introduced that material in lieu of lead for fixing ironwork in stone. Having occasion to cut some ironwork out after it had been fixed in Caen stone with Portland cement, and exposed to the atmosphere four months, I found it quite free from oxidation. I believe if iron railings were fixed with Portland cement, the ends of the ironwork made dovetailing, and the holes in the stone-work cut suitable to leave a regular cavity round the iron to receive the cement, so that the iron does not come in contact with the stone (as the stone admits moisture and conveys it to the iron, and causes the iron to corrode and burst the stone), no harm would result.—G. S.

TOWN IMPROVEMENT SOCIETY AT LEEDS.—The second annual meeting of this commendable and useful association for the suggestion and promotion of miscellaneous improvements, was held on Monday in last week, when a report of progress in smoke prevention, street improvement, &c. was made; from which it appears, that with small means and great exertion, much may be done in the way of moving influential bodies, such as town councils, road trustees, &c. to accede to suggested improvements. The subject of a free library for Leeds was suggested and discussed at the meeting.

THE PERCY SHRINE, BEVERLEY MINSTER.—According to a correspondent, the churchwardens continue obdurate, and a cast of this celebrated piece of work is not to be had for the Sydenham Palace. The company commissioned a competent person to make a cast, and two out of the four churchwardens were agreeable to afford him an opportunity of executing the work; the others objected. The archbishop wrote about it, and Archdeacon Wilberforce lent his aid, along with the incumbent of the minster, but the wardens would not be turned. There is a very clever sketch of the shrine, by the way, in the collection of drawings by Amateurs, Pall-mall, by Miss Brereton, of whose skill in architectural delineation we had occasion to speak on a previous occasion. The fair artist has an evident feeling for Gothic work, and touches its characteristics with a graceful pencil.

REPORTED ENCLOSURE OF HAMPSTEAD-HEATH.—We are requested, says the *Morning Herald*, to state that the report of an attempt to enclose Hampstead-heath for building purposes is utterly untrue.

VALUE OF GROUND AT TIVERTON.—On Monday, in last week, land contiguous to the town, measuring three-fourths of an acre and 6 p. was sold for 285*l.*; and three fields behind the Union-house, measuring $2\frac{3}{4}$ acres, was sold for 600*l.* subject to an annual payment of 2*l.* 6*s.* 8*d.*: other lots sold at similar rates.

MR. HAWKSLEY, C.E. AND THE CENTRAL BOARD OF HEALTH.—A letter, by Mr. Hawksley to the Marquis of Chandos, has, it appears, been published, in which grave charges are brought against the management of the General Board of Health. Amongst other passages is the following, which we quote, on the authority of the *Banbury Guardian*:—"In the case of Darlington, I had just completed a new waterwork for a private company; but on occasion of Mr. Ranger being sent down with reference to the Public Health Act, he required the whole of my drawings and specifications to be produced before him, and prepared a report commenting in very unfavourable terms on those works. He subsequently demanded that my drawings and specifications should be sent to his office in London. He there took copies of the whole, and shortly reproduced my specifications *verbatim*, both at Barnard Castle and Southampton, where he had become employed both as inspector and engineer, putting them forth as his own, and affixing his own name thereto. Neither Mr. Ranger, nor any other superintending inspector, had made waterworks previous to their engagement under the Board." The local paper just named takes up the subject, in the fear that if Mr. Hawksley is employed as the engineer for the Banbury district Board of Health, his plans may not be passed by the Central Board, and so delay and inconvenience take place, and unnecessary expense be incurred.

THE VALUE OF PROPERTY IN BIRMINGHAM.—The old Castle Hotel property in the High-street was sold on Wednesday in last week, by Messrs. Ludlow and Robinson. The attendance was very great. The following, says the local *Journal*, were the prices:—Lot 1, presenting a frontage to High-street of 16 feet 6 inches, by an average depth of 71 feet, after a spirited competition, was knocked down at the sum of 1,850*l.* Lot 2, with a frontage of 27 feet to High-street, by a depth of 72 feet, was sold at 3,440*l.* These two lots averaging the great sum of 14*l.* 10*s.* per yard. The back land was then offered in thirteen lots, and sold at prices amounting to 4,194*l.* The competition throughout was very great, and the prices realized such as we never before remember for land in Birmingham. The whole fetched the large sum of 9,484*l.* All property seems now to be making a large price; for the previous evening the same auctioneers sold a leasehold property in Mount-street, producing a weekly rent of 12*l.* 3*s.* held for a term of thirty-nine years, at a ground rent of 3*l.* 8*s.* 10*d.* for 1,110*l.*

A NEW IRON-BLOOMING MACHINE.—A singular machine, says the *Cardiff Guardian*, "has been lately introduced into Messrs. Bolckow and Vaughan's works, Middlesbro' (Merthyr). Its intended purpose is to bring iron into a proper state for the rollers, which, previous to this invention, was converted by means of a squeezer, requiring six men to work at it, but the present novel invention completely and more effectually does away with manual labour. The puddle ball is put in at one end, and comes out a perfect 'Bloom' at the other; it is, therefore, properly named a 'Blooming Machine.' Mr. Jeremiah Brown has obtained a patent for it, and Mr. David Brown, of Birmingham, had the sole management of its erection. Messrs. Bolckow and Vaughan have expressed their high opinion of this improvement. The number of furnaces at work for it when Mr. David Brown started it was twenty-two, making twenty-six tons in nine hours every day and night; but now they work thirty furnaces into the machinery, &c. There is no doubt that it will shortly work for sixty furnaces."

THE PROPOSED INDUSTRIAL EXHIBITION IN EDINBURGH.—Plans, it appears, have been laid before the Caledonian Horticultural Society, by Mr. Rhind, architect, and Mr. Smith, landscape gardener, for a National Exhibition Building to be erected on their grounds, and which might afterwards be converted into a winter garden. The plans show a structure somewhat in the style of the Crystal Palace.

TENDERS.

For the Victoria Lodging-houses and Washhouse, Frances-street, Westminster. Mr. Darbishire, architect.

	Deduction of Fire-proof House.	
Kirk and Parry	£150	£7,782
Holland	154	7,744
Jay	127	7,664
Lucas, Brothers	147	7,524
Smith and Appleford	160	7,510

For the erection of an Idiot Asylum at Reigate. Mr. W. B. Moffatt, architect.

Hayward and Nixon	£34,860
J. Glenn	34,600
Thompson and Croswell	34,366
Cooper	34,200
Hill	33,968
Rowland and Evans	33,679
Sisson and Robinson	33,650
Myers	31,250
Kirk and Parry	30,942
Jay	29,440

For erecting a warehouse in Montague-close, St. Saviour's. Mr. W. Tite, architect. Quantities supplied by Mr. Meredith and Mr. Bennett.

Lee and Son	£9,730
Lawrence and Son	9,440
Nicholson	9,330
Grimsdell	9,249
Brun and Son	8,362
Gammon	8,290
Lucas	8,177
Piper	8,090
Rigby	7,910
Myers	7,715
Jay	

For Croydon Junction Incline, Down Line.

Samuel Bower	£6,189
Wilkinson and Beard	5,625
Williamson	5,512
Diggle	5,060
Hack and Son	5,004
J. and C. Rigby	4,903
Parks and Goodson	4,574
Wade and Co.	4,447
Rousch and Co.	4,444
Fairbank	4,440
Furness	4,398
Oldham and Talbot	4,394
J. B. Oldham	4,154
Oliver and Co. (accepted)	4,080

TO CORRESPONDENTS.

"Roof Raising."—A correspondent says,—"Will any of your correspondents inform me, through your columns, whether, and by whom, any roof of 100 feet by 80 has been successfully and economically raised bodily in order to admit of one or two stories being added to the building?" "Arbroath Markets Competition."—A competitor, who has received his drawings back, wishes to have particulars of the decision. "C. F. D." (thanks), "A. T." "J. A. P." "X. Y." (it seems to us contrary to common sense that the railways should remain unconnected), "H. F. S." "B. G." "W. T." "J. C. C." "J. P. W." "E. H." Bethnal-green (shall hear from us). "W. L." (we decline deciding private differences, unless applied to professionally). "W. S." (ditto). "Autocthon." "W. S." "M. S." "Young Boy." "J. B." "J. N." "A. W. H." "R. G." "Subscriber" (under our mark). "P. P." (ditto). "Lucy," (was certainly meant for an architect's wife). "Practical Surveyor," "W. P." "L. B." "A. M." "T. B."

"Hooks and Addresses."—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

AN ARCHITECT, in large and important practice, surveyor to two building estates in the neighbourhood of London, has a vacancy in his Office for an OUT-DOOR PUPIL. The youth must have a gentlemanly address, and have been well educated.—Address, S. S. Mr. Philips's, 43, Store-street, Bedford-square.

APPRENTICE WANTED in the MARBLE BUSINESS. A clever Youth will have a first-rate opportunity of learning a good business, with a comfortable home near the business.—For further particulars address to F. K. Office of "The Builder," 1, York-street, Covent-garden. Marble masons and polishers wanted.

TO HOUSE PAINTERS AND PAPERHANGERS.

GOOD HANDS can have IMMEDIATE EMPLOY on application to Mr. J. HALES, Plumber, House Decorator, &c. Hemel Hempsted, Herts.—June 10, 1853.

TO JOINERS AND OTHERS.

HALF A DOZEN JOINERS (either bench-men or fixers), two or three Framers, and a Cabinet-makers who can turn his hand to joiners' work, can procure immediate and constant employment by applying to H. WILLICOMBE, Builder, Tunbridge-wells.—N.B. None but sober, industrious, and good workmen need apply.

DECORATIVE ARTIST WANTED.—Apply to F. P. 63, St. John's-wood-terrace, Circus-road, St. John's-wood.

TO JOINERS, PLUMBERS, AND GLAZIERS.

WANTED, in a Shop, about thirty miles from London, SIX good BENCH HANDS, at country wages. Also, in the same shop, a steady workman as Plumber and Glazier, at country wages. He will have, if suitable, constant employment at one place for nine months.—Apply on Tue day, the 14th June, between the hours of Twelve and Two, at 32, Stangate-street, Lambeth.

TO HOLLOW BRICK AND TILE MAKERS.

WANTED, a FOREMAN, of good character. Also MEN WANTED, who are accustomed to hacking and burning bricks.—Apply by letter, or otherwise, to NORTON and BURIE, Union-works, New-park-street, Southwark-bridge.

WANTED immediately, Four or Five STONE-CARVERS, that have been used to Gothic work. Also two WOOD-CARVERS used to Gothic work.—Apply, by letter, to Mr. WILLIAM WILKINSON, Clerk of the Works, St. Mary-church, Torquay, Devon.

TO BUILDERS' CLERKS.

WANTED, immediately, a Competent Person to Superintend the Erection of some Extensive Buildings.—Apply by letter (inclosing testimonials, stating age and salary) address-d to Mr. J. B HARVEY, Colchester.

CLERK OF THE WORKS.

WANTED, a PERSON to SUPERINTEND the ERECTION of TWENTY-TWO HOUSES in St. Giles's-field, Oxford.—Application, with testimonials and amount of salary required, to be addressed to the "Directors of the Oxford Freehold Building Trust," 19, Magdalen-street, Oxford, on or before MONDAY, the 13th instant.

WANTED, a YOUTH, about 17 or 18 years of age, who can write a good hand, and copy specifications, and well acquainted with the general routine of an office. One who has been in a builder's office preferred.—Apply to Mr. WM. WALLEN, Jun. 25, Lawrence Pountney-lane, City, between Twelve and Two on Monday next.

WANTED, a Man who understands the quality and measurement of timber, and who can keep its accounts. Good character indispensable. Wages at first about 25s. per week. The appointment would probably be a permanency. Applications, stating where last engaged.—Address to Box 40, Post-office, Bristol.

WANTED, by an Architect in the Country, a YOUNG GENTLEMAN as Pupil; one possessing a knowledge of Drawing preferred. A premium required.—Address, A. Z. B. 1, York-street, Covent-garden.

TO DRAUGHTSMEN.

WANTED, TWO DRAUGHTSMEN.—Apply to Messrs. HAY, Architects, Liverpool, stating salary and experience.
Liverpool, St. George's-chambers, 8th June, 1853.

WANTED, for a Water-works in the Country, a competent WORKING ENGINEER (under 40 years of age), to take charge of Two Single-acting Pumping Engines; he must be an experienced man, willing to make himself generally useful, and bear a good character from his last place, of not less than three years.—Letters and testimonials may be addressed, W. B. Miller and Field's, Stationers, 6, Bridge-road, Lambeth.

TO CARPENTERS.

WANTED, an able, steady, and industrious WORKING FOREMAN to superintend the Carpenters' and Joiners' work of some erections near town.—Apply, stating references, where last employed, wages, &c by letter only, to BUILDER, Hornsey Cottage, Hornsey-road, Holloway.

WANTED, by a man of good experience, a SITUATION as FOREMAN to a STONEMASON or BUILDER. Can have the most satisfactory references from his late employers.—Direct to A. B. 76, Castle-street, Leicester square, care of Mr Bull.

TO CARTENTERS AND JOINERS.

WANTED, by the friends of a Youth, who has served two years to the above trade, a MASTER, who will take him as in-door APPRENTICE for the remainder of his term. A moderate premium will be given. Address to Mr. GREY, 73, Waterloo road, Lambeth.

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WANTED, by a Young Man of high respectability, an ENGAGEMENT in a LAND AGENT and SURVEYOR'S OFFICE. The Advertiser having had several years' experience under responsible employment, feels command the highest testimonials for ability and integrity.—Address, A. B. C Mr. Bateman's, Law Stationer, 17, Took's-court, Cursitor-street, Holborn.

TO IRONMONGERS, BUILDERS, &c.

WANTED, by an experienced Workman, who is a first-rate bellhanger, locksmith, and range and smoke jack maker and general jobbing hand, and is a good chimney doctor, a SITUATION.—Address, F. B. Mr. Grady's, No 10, Green Dragon-court, King-street, Snow-hill.—N.B. No objection to the country.

TO BUILDERS.

WANTED, by a Young Man, a SITUATION as BENCH-HAND, in a good shop in town or country Salary moderate.—Address, C. E. 36, Mount Gardens, Westminster-road.

TO BUILDERS

WANTED, a SITUATION as CLERK, by a Young Man, aged 22; he is capable of managing accounts, preparing estimates, &c. and is willing to make himself generally useful.—Address, P. R. Post-office, Longfield, Surrey.

TO CARPENTERS.

WANTED, to APPRENTICE a strong, active lad, 16 years of age, to the above trade. No premium can be paid. A small remuneration for his labour is all that will be expected.—Address, A. C. H. 11, Frith-street, Soho.

TO BUILDERS, PLUMBERS, &c.

WANTED, a SITUATION in an OFFICE or COUNTING-HOUSE, by a Young Man, aged 24, who can produce excellent testimonials as to character and ability. A moderate salary only required.—Address, X. Y. Z. Mr. Leeming-ham's, 1, Clarendon-road, Notting-hill.

TO CARPENTERS AND BUILDERS.

WANTED, by a respectable Youth, who has served five years in the above line, a SITUATION for the REMAINDER of his APPRENTICESHIP.—Apply to A. Z. 5, Canal-terrace, York-road, King's-cross.

A SURVEYOR, who has had considerable experience in Surveyors' and Builders' Offices, is desirous of meeting with an ENGAGEMENT.—Address, Mr. C. HOWARD, 65, Stanhope-street, Hampstead-road.

TO CARPENTERS, JOINERS, BUILDERS, &c.

A RESPECTABLE YOUNG MAN, who is competent in the general branches of joiners' work, is desirous of obtaining permanent EMPLOYMENT as BENCH-HAND (only).—Address (prepaid) to A. Z. 2, Buck's-cottages, Morning-lane, Hackney.—No objection to work by the piece.

TO PLUMBERS, BRASSFOUNDERS, GAS COMPANIES, GAS ENGINEERS, AND THE METAL TRADES GENERALLY.

THE Advertiser is open to an ENGAGEMENT, as TRAVELLER, FOREMAN, INSPECTOR of MAINS, or RESIDENT ENGINEER. He is a practical mechanic, perfectly acquainted with the whole of the above trades; and, from long experience in the manufactory, and on the road, possesses qualifications which render him an acquisition to either a London or country firm. The highest testimonials given.—Address C. D. care of Messrs. Brown and Son, Glass Merchants, 2, Middle-row South, Knightsbridge.

TO PLUMBERS, &c.

A YOUNG MAN, having served his time in a three-branch shop, wishes for a SITUATION, to improve himself in the Plumbing, and to make himself useful.—Address, G. W. R 5, Upper Thames-street, City.

TO ARCHITECTS.

A YOUNG MAN (age 23), who is a good draughtsman, and who has studied architecture both in Italy and England, is desirous of obtaining a SITUATION in an Architect's Office. The advertiser would have no objection to accompany an architect abroad. Good references given. Moderate salary required.—Address, X. Y. Z. Mercury House, Brentford, near Brentford Station.

TO PLASTERERS AND BUILDERS.

A YOUNG MAN WANTS a SITUATION as IMPROVER to the PLASTERING. Has knowledge of slating, painting, &c. Wages moderate.—Address, H. W. 45, Munster square, Regent's-park.

TO ARCHITECTS, BUILDERS, &c.

THE Advertiser, an experienced practical Man, wishes for an ENGAGEMENT as CLERK of WORKS or GENERAL FOREMAN, at a moderate salary; can measure up work, keep accounts, &c.—Address, W. H. Albany Library, 5, Albany-street, Regent's-park.

TO PLUMBERS, PAINTERS, BUILDERS, &c.

THE Advertiser, a respectable Man, who thoroughly understands his business, can measure work, estimate, &c. and who has had the entire management of an extensive plumbing and painting trade, wishes to meet with an ENGAGEMENT in a similar capacity, in town or country.—Addres, A. Z. 17, Albion-grove West, Barnsbury-park, Islington.

TO CARPENTERS AND BUILDERS.

A YOUNG MAN, having completed his time as a Carpenter and Joiner, wishes to be engaged as an IMPROVER, or in the office of a Builder, &c. Good references, &c.—Address, A. B. Mr. Bastick's, Chemist, Brook-street, Bond-street.

TO ENGINEERS AND IRONFOUNDERS.

A PRACTICAL, experienced MOULDER, of good character, is open to an ENGAGEMENT as FOREMAN of a FOUNDRY; has a thorough knowledge of every description of castings.—Address, J. D. 57, Aldermanbury. (Town or country.)

TO BUILDERS AND OTHERS.

AN active Person, without incumbrance, of first-class education and moral principle, with a practical knowledge of the building business, desires an ENGAGEMENT as REPRESENTATIVE, CLERK of WORKS, or FOREMAN; his object being usefulness to a respectable person rather than high remuneration. He would prefer occupying his spare time at the bench rather than in the counting-house.—Address, M. 11, Crescent-place, Fulham-road, Chelsea.

SPRING GROVE, for many years so justly celebrated for its salubrious air, the beauty of its well-timbered grounds, and the excellence of the water, from which the name is derived, is about eight miles from town on the western high road, and close to the Isleworth Station, on the South-Western Railway, whence trains run to Waterloo every hour throughout the day The soil is pure gravel, and the ground well elevated. The sewers and roads have been made at great expense, so as to secure perfect drainage, and a sound dry road in every season. Persons desirous of selecting a site for the erection of a house, are invited to look at this estate, as the beauty of the different sites, and the various advantages they offer for a few select and agreeable villa residences, will be better appreciated on a personal inspection than by any other means.—Apply either at the Office on the Estate, or to Mr. JOHN TAYLOR, 23, Parliament-street, Westminster; at either of which places plans may be seen, and every information obtained.

SPRING GROVE.—TO BUILDERS AND OTHERS.—Plots of FREEHOLD LAND TO BE LET on building leases; term, 99 years. Bricks delivered on the ground at a moderate fixed price, and every other facility given to builders of character and respectability.—Plans may be seen either at the Office on the Estate, adjoining the Isleworth Station of the South-Western Railway, or on application to Mr. JOHN TAYLOR, 23, Parliament-street, Westminster.

FREEHOLD BUILDING LAND.—TO BE LET, on a 99 years' BUILDING LEASE, about 24 acres, at Surbiton-hill (the choicest spot in this beautiful locality, ornamentally planted, near the church and the station), laid out in sites for Villas.—Particulars of JOHN BURGES WATSON, Esq. Architect, 30, Manchester-street, Manchester-square, who has other Building sites of considerable extent TO LET, at Brixton, Cricklewood, Hampton-wick, Hanwell, Hook, Norwood, and West Cheam; this latter near the Station.

ELIOT-BANK, SYDENHAM-HILL.—Some beautiful Plots of FREEHOLD BUILDING LAND TO BE LET, for Ninety-nine Years, adapted for a few first-class houses, commanding most extensive views, and within half-a-mile of a railway station, having the advantage of a private road through the estate to Forest-hill and Sydenham-hill. The land may be seen on application to W. RIED, Gardener, at Mr. Hunt's, Sydenham-hill.

REIGATE.—FREEHOLD BUILDING LAND TO BE LET or SOLD, within two minutes' walk of the town station, commanding the most picturesque views. Some sand sold on the ground. Respectable builders would meet with very liberal treatment. For plans apply to Messrs. CHAMBERS and PORDEN, Surveyors, No. 7, Great Tower-street; or at the Office on the Estate.

COLNEY-HATCH, MIDDLESEX.—Desirable PLOTS of FREEHOLD BUILDING GROUND TO BE LET or SOLD. Bricks on the ground.—Apply for plans to Messrs. CHAMBERS and PORDEN, Surveyors, No. 7, Great Tower-street; or on the Estate.

CROYDON. — WELLEHO ESTATE.—Several desirable PLOTS of FREEHOLD GROUND TO BE LET or SOLD. Good roads on the estate, and a demand for third-rate houses in the locality.—Apply to Messrs. CHAMBERS and PORDEN, Surveyors, No. 7, Great Tower-street.

COULSDON, abutting upon the Stoat's-nest Station, and adjoining the proposed Infant Orphan Asylum, within three miles of Croydon.—To BUILDING SOCIETIES and OTHERS.—TO BE LET or SOLD, about TWENTY-FIVE ACRES of LAND, suitable for the erection of detached houses.—For particulars apply to Messrs. CHAMBERS and PORDEN, Surveyors, No. 7, Great Tower-street.

BUILDING LAND TO BE LET for long terms at low ground-rents; Anerley and Norwood, near the Crystal Palace; Hackney, near Victoria-park; Edmonton, fronting the high road.—Apply to Mr. JAMES BRAGG, Surveyor, 3, Devonshire-villas, Rotherhithe.

GROUND TO BE LET at ISLINGTON for SIX FOURTH-RATE HOUSES, in a main street, where small houses are much required. Lease 99 years, ground-rent 4l. 4s. and 15l. per house advanced at 5 per cent. per annum. Bricks on the premises.—Address, J. C. at Mr. Tarr's, Coal Merchant, Hoxton-bridge.

CRYSTAL PALACE, NORWOOD.—BUILDING GROUND TO BE LET ON LEASE, on the road from Anerley Station to the Crystal Palace, and opp site the ornamental grounds of the above building. The property consists of upwards of thirty acres, with a beautifully undulated surface and thickly wooded, commanding extensive views in Surrey and Kent; it is accessible by good roads and railway, being within five minutes' walk of the Anerley Station, and one minute's walk of the Station of the proposed Crystal Palace and West-end Railway. There is good brick earth on the whole of the ground, and permission to make bricks would be granted to any one taking a considerable portion.—For plans and particulars apply to Messrs WEHNERT and ASHDOWN, Architects, 42, Charing-cross.

BUILDING LAND.—TO BE LET, on BUILDING LEASES, on the usual terms, either the whole or part of a piece of land, containing 3a. 1r. 27p. lying between King Edward's-road (on which it has a frontage of 240 feet) and the Victoria Park road, Hackney, near the Triangle, with a carriage way into the Victoria Park-road. Advances not exceeding 50 per cent.—For particulars apply to Messrs. PRICKETT and SON, Surveyors, 34, Southampton-buildings, Holborn.

BUILDING GROUND TO BE LET, for a Term of Forty Years, in the BELVIDERE-ROAD, Lambeth, suitable for the erection of a manufactory or workshop requiring good light and space. The ground is about 87 feet by 54 feet, having three frontages, and near the river.—For plan and particulars, apply to Messrs. WIGG, FOWNALL, and WIGG, No. 7, Bedford-row.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston: term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 25, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate.

TO BUILDERS &c.

FREEHOLD LAND TO BE LET, on Leases for Ninety-nine Years, in the heart of London; and in several eligible situations in the suburbs of London, with brick earth, &c. Moneys advanced, if required.—For particulars, apply to G. TARLINGTON, Esq. 38, Devonshire-street, Portland-place, between Four and Seven.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views.—Roads advanced and bricks may be had, delivered on the site of the intended buildings, at 30s. per thousand. For particulars apply to Mr. C. HAMBRIDGE Architect, 73, Coleman-street, City.

TOLLINGTON PARK.—Valuable FREEHOLD BUILDING GROUND TO BE LET on Lease for Ninety-nine Years, at low ground-rents, suitable for the erection of second and third-rate houses. Omnibuses run every ten minutes from the City and Westend every five minutes. Mode of conveyance.—For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

HAMMERSMITH.—RAVENSCOURT PARK. Private BUILDING GROUND TO BE LET on LEASE for Ninety-nine years, at a moderate ground-rent, in plots suitable for terraced or semi-detached houses, with direct Thames frontages, and commanding beautiful views and vistas. The neighbourhood embraces the finest scenery of the banks of the river. The soil is gravel, with an abundant supply of good spring-water, and the locality is well known as being remarkably healthy. The estate has been laid out for the erection of first-class residences. The roads are completed, and the sewers are in course of construction at the expense of the freeholder. For particulars apply to Mr. WILLIAM WOODS, on the Estate; or to Messrs. WILKINSON, GURNEY, and STEVENS, Solicitors, 2, Nicholas-lane, Lombard-street.

IMPORTANT to Builders, Merchants, and others.—TO BE LET with immediate possession, all that extensive and convenient Landing Wharf, together with stables, workshops, &c., also a powerful Crane; the same being known as the BRIDGE ROW WHARF, situated on the Grosvenor Canal, in the Belgrave-road, Pimlico.—For further particulars apply on the premises.

TO BUILDERS AND UNDERTAKERS.

TO BE DISPOSED OF, the LEASE, GOODWILL and FIXTURES of a profitable Business in the above line, which has been successfully carried on for some years, situated at the east end of London.—For cards to view, apply to Mr. THOMPSON, 10, Leadenhall-street, City.—Money required for the whole with stock included, from 350l. to 400l.

HENDON. — Valuable FREEHOLD PROPERTY TO BE SOLD, consisting of several well-built semi-detached villas, with large gardens, and commanding fine views of the surrounding country.—For plans, particulars, and terms, apply to Mr. E. SALTER, Architect and Surveyor, 10, The Grove, Hammersmith.

Timber and Building Material Dealers, Commission Yards, &c.

TO BE SOLD, a large piece of FREEHOLD GROUND highly advantageous for the above purposes, in the business part of OLD FORD, BOW, and where no trade of the kind is carried on within a very considerable distance of the spot. The above forms part of an estate on which nearly three hundred houses will shortly be erected, already surrounded by a populous and increasing neighbourhood.—Particulars to be had of Mr RANDALL, 14, Tokenhouse-yard, Lothbury, City. Early application necessary, a speedy sale being desired.

WANTED, on LEASE or to PURCHASE, PREMISES, in one of the suburbs of the metropolis, suitable for a SMALL FACTORY of about fifty workmen, with about an acre of land adjoining. The neighbourhood of Bow would be preferred.—Particulars to be forwarded to WILLIAM BECK, Architect, 33, Finsbury-circus.

ROYAL ACADEMY of ARTS, Trafalgar-square. The EXHIBITION of the ROYAL ACADEMY is now OPEN. Admission (from Eight o'clock till Seven). One Shilling. Catalogue, One Shilling.
JOHN PRESCOTT KNIGHT, R.A. Sec.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS. Their NINETEENTH ANNUAL EXHIBITION is NOW OPEN, at the Gallery, 53 Pall-mall. Admission 1s.

ROYAL POLYTECHNIC INSTITUTION. Patron—H. R. H. PRINCE ALBERT.—New and interesting attractions. The First Part of an Historical Lecture on "The Thames," from its source to its estuary, by George Buckland, esq. assisted by Miss Blanche Younge, with appropriate Songs and Dissolving Scenery, every evening (except Saturday), at Nine o'clock; in addition to the varied Scientific Lectures and Exhibition.—Open Mornings and Evenings. Admission to schools and children under ten years of age, half-price.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half-past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT, every evening from Seven till Ten; Music from Two till Five, and during the evening.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755 is exhibited for a short time in addition to the Panorama of London, and by the aid of new machinery, with increased startling effects. Daily at Three; Evening at Eight o'clock.—Admission One Shilling. Children and Schools half price to either Exhibition.

TO BUILDERS.

DO YOU BRUISE YOUR OATS YET? One bushel of oats crushed will nearly make two. Immense saving, and imp rtant improvement of the annual. Two Machines for bruising oats and cutting straw, 4l. 5s. 6d. Oat-Bruisers, cake-breakers, ploughs, thrashing-machines, domestic flour-mills, light carts, mining tools, brick and tile dies, corn-dre sing, ditto, and haymakers'. Order early. Horse and steam machinery put up, &c. Repairs done.—MANY WEDLAKE and CO., 136, Rotherhithe-wall. Pamphlet on feeding, 1s.; list, with 240 illustrations, 1s.; per post, 1s. 4d.

TO THE CONTRACTORS OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.
BY HER MAJESTY'S ROYAL LETTERS PATENT.

ABRAHAM ROGERS'S Patent for IMPROVEMENTS IN APPARATUS USED FOR FORMING SEWERS, TUNNELS, and TRAYS, for driving in quicksands and all kinds of loose earth, without the expense of wood to support the roof or top, while the arch is being put in.—Any person or persons wishing for licence to use the same for any district, borough, or shire, &c. must apply to ABRAHAM ROGERS, Field House, near Bradford, Yorkshire.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

SURVEYING, ARCHITECTURE, Engineering, Levelling, Drawing, Draughting, Mapping, Measuring and Valuing of Land, Timber, Buildings, Drawing, Mathematics, &c TAUGHT on the most improved system in a short course of Practical Lessons, by Messrs. HYDE, SMITH, and LEWIS, Civil Engineers Architects, Surveyors &c of extensive practice who are preparing gentlemen for Surveyors, Architects, Engineers &c. Proficiency guaranteed. Terms very moderate. Steady and clever pupils may be introduced to arrangements For prospectuses, &c. apply at the Offices, 24, Guildford-street Russell-square. Evening instruction given.—"An excellent establishment for surveying, architecture, engineering, &c." *Magazine of Science.*

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

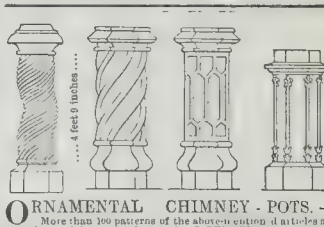
PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices:

Steel Drawing Pens, with pearl handles	4s. 6d.
do. do. bress-nd tet es	1s. 6d.
do. do. German silver do.	4s. 6d.

And every other instrument of the best workmanship equally low.

GILBERT J. FRENCH, Bolton, Lancashire, respectfully informs the clergy, architects, and churchwardens, that he replies immediately to all applications by letter, for information respecting his manufactures in CHURCH FURNITURE, ROBES, CAMBRIDGE LINEN, &c. &c. supplying full information as to prices, together with Sketches, Estimates, Patterns of Materials &c. &c. Having declined appointing agents. Mr. French invites direct communications by post, as the most economical and satisfactory arrangement.—Parcels delivered free by railway.

REPERTOIRE of MEDIÆVAL ART, 53, Wigmore-street, Cavendish-square.—Mr. BURTON, M.A., of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Metal work, chalice and patens, offertory, basons, candlesticks coronas, branches, gas fittings, crosses, lamps, monumental brasses, hinges, locks, handles, fire-dogs, lecterns, velvets, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver llama, painted candles, picture frames, tracings, lanners, &c. &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kinds of embroidery supplied and arranged.



ORNAMENTAL CHIMNEY-POTS.—More than 100 patterns of the above cottage mouldings are manufactured in artificial stone by J. SELLEY, at Austin and Seley's Artificial Stone Works, 1 to 4, Keppel-row, New-road.

WHERE TO BUY A DRESSING-CASE. —In no article perhaps is caution more necessary than in the purchase of a dressing-case, for in none are the meretricious arts of the unprincipled manufacturer more frequently displayed. MECHI, 4, Leadenhall-street, near Gracechurch-street, has long enjoyed the reputation of producing a dressing-case in the most tasteful and faultless manner. Those who purchase one of him will be sure of having thoroughly-seasoned and well-prepared wood or leather, with the fittings of first-rate quality. The prices range from 1l. to 100l. Thus the man of fortune and he of moderate means may alike be suited, while the traveller will find the Mechian Dressing-case especially adapted to his necessities.—4, LEADENHALL-STREET.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 800 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to the extent of 200 miles, as the result of a close investigation of its merits recently made by some eminent French Engineers.

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 36, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

HAND-IN-HAND INSURANCE OFFICE, 1, New Bridge-street, Blackfriars, London. Established in 1696.

DIRECTORS

The Hon. Wm. Ashley	John Gurney Hoare, esq.
The Hon. Sir Edward Cust	E. Fuller Maitland, esq.
Arthur Eden, esq.	Wm. Scott, esq.
John Lett, esq. Eliot, esq.	John Sperling, esq.
James Esdaile, esq.	Henry Wilson, esq.
Harvie M. Farquhar, esq.	W. Esdaile Winter, esq.

Life Department.—This office offers a low scale of premiums to non-members without participation in profits, or a member's scale of premiums with an annual participation in the whole of the profits after five full annual payments.

In the years 1849, 1850, 1851, and 1852, the premiums on all members' policies were abated 25 per cent. that is to say, a premium of 100l. was reduced to 47l. 10s.

Insurances effected before the 24th of June next will participate one year earlier than if effected after that date.

Fire Department.—Insurances are effected on every description of property at the usual rates.
By order,
RICHARD RAY, Secretary.

PREMIUMS REDUCED THIRTY PER CENT.
Annual Division of Profits.

GREAT BRITAIN MUTUAL LIFE ASSURANCE SOCIETY.
14, Waterloo-place, London, and 30, Brown-street, Manchester.

THE CHISHOLM, Chairman.
RICHARD HARTLEY KENNEDY, Esq. Deputy-Chairman.

Colonel Michael E. Bagnold.	William Morley, esq.
Francis Brodigan, esq.	Robert Francis Power, esq. M.D.
Alexander Robert Irvine, esq.	Archibald Spens, esq.
John Inglis Jerdein, esq.	Frederick Valiant, esq.
James John Kinloch, esq.	Rev. F. W. J. Vickery.
Henry Lawson, esq.	

This Society is established on the tried and approved principle of Mutual Assurance. The funds are accumulated for the exclusive benefit of the Policy holders under their own immediate superintendence and control. The profits are divided annually, and applied in reduction of the current premiums.

The Annual General Meeting of this Society was held on the 25th of May, 1853, when a Report of the business for the last year was presented, exhibiting a statement of most satisfactory progress. It appeared that whilst the Assurances effected in 1851 were 15 per cent. beyond those of 1850, nearly 70 per cent. beyond those of 1849, and 130 per cent. beyond those of 1848, the Assurances effected in 1852 considerably exceed those of 1851, 325 new Policies having been issued in that year, covering Assurances to the extent of 186,600l. the yearly premiums on which amounted to 4,902l. 15s. It also appeared that the transactions of the first five months of the present year were greater than those of the corresponding months of 1853, or of any preceding year, whilst during the whole period referred to, the claims arising from deaths were much below their estimated amount. A resolution was thereupon passed, continuing a reduction of 30 per cent. on the premiums payable on all Policies on the participating scale, on which five or more annual premiums had been previously paid.

Credit is allowed for half the Annual Premiums for the first five years.

The following Table exemplifies the effect of the present reduction.

Age when Assured.	Amount Assured.	Annual Premium hitherto paid.	Reduction of 30 per cent.	Annual Premium now payable.
	£	£ s. d.	£ s. d.	£ s. d.
20	1,000	20 17 6	6 5 3	14 13 3
25	1,000	23 0 0	6 18 0	16 2 0
35	1,500	47 15 0	13 3 6	30 18 6
45	2,000	89 11 8	24 3 6	65 8 2

A. R. IRVINE, Managing Director.
14, Waterloo place, London.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY
Established 1824.—Empowered by Special Act of Parliament.
ADVANTAGES

EXTENSION OF LIMITS OF RESIDENCE.—The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira, the Cape, Australia, New Zealand and in most parts of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit divisible in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with, at the same time, complete freedom from liability—thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 350,000l. and the income exceeds 130,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of life, one-half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES. Five Bonuses have been declared; at the last in January, 1852, the sum of 121,125l. was added to the Policies, producing a Bonus varying with the difference of Ages from 24½ to 35 per cent. on the Premiums paid during the five years, or from 5l. to 12l. 10s. per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in many other ways.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than at most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are indisputable except in cases of fraud.

INVALID LIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any Quarter Day it can be revived within fourteen months.

The accounts and balance-sheets are at all times open to the inspection of the Assured, or of any party desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.
99 Great Russell-street, Bloomsbury, London.

NO ERROR WILL VITIATE A POLICY.

PELICAN LIFE INSURANCE COMPANY.—Established in 1797, 70, Lombard-street, City, and 57, Charing-cross, Westminster.

DIRECTORS.

Robert Gurney Barclay, esq.	Kirkman D. Hodgson, esq.
William Cotton, esq. F.R.S.	Thomas Hodgson, esq.
William Davis, esq.	Henry L. Holland, esq.
Richard Fuller, esq.	J. Petty Muspratt, esq.
Jas. A. Gordon, M.D. F.R.S.	C. Hampden Turner, esq. F.R.S.
Henry Grace, esq.	Matthew Whiting, esq.

AUDITORS.

Emanuel Goodhart, esq.	John Davis, esq.
John Haggard, D.C.L.	

BONUS.

At a division of Profits declared up to 3rd July, 1847, the Bonus added to Policies effected in the seven preceding years on the "Return System" averaged Thirty-three per Cent. on the premiums paid. Four-fifths or Eighty per Cent. of the Profits are divided amongst the Policy holders.

LOANS in connection with Life Assurance on approved security.

Annual Premium required for the Assurance of £100 for the whole term of life:—

Age.	Without Profits.	With Profits.	Age.	Without Profits.	With Profits.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
15	1 11 0	1 15 0	40	2 18 10	3 6 5
20	1 13 10	1 19 3	50	4 0 9	4 10 7
30	1 4 0	2 10 4	60	6 1 0	6 7 4

ROBERT TUCKER, Secretary.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Stiles, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

Per square.		Per square.
¾ inch yellow	14s. 6d.	1 inch white ..... 16s. 6d.
¾ "	15 0	1¼ " 18 6
" "	16 6	1 " " 18 0

2½ per cent. discount off amounts exceeding twenty pounds.
AICHINUTT and ATKINSON, Planing, Tongueing, and Grooving Saw-mills, Cambridge-street, Old St. Pancras-road.

By Her Majesty's Royal Letters Patent.

TO BUILDERS AND OTHERS

SEASONED WOODS by the Patent Desiccating Process for SALE, at F. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle, Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge. Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the floor-boards generally sold renders them efficiently introduced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present month:
1-inch yellow or white, 12s. per square.
1-inch do. do. 16s. 6d. to 18s.
Battens, 2s.; Deals, 3s. 6d; and plank, from 4s. 6d. per 12 feet; timber, from 7s. 6d. per load; and every kind of English and foreign wood direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF,
SAWING, PLANING, AND MOULDING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.
are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of firewood, &c. from this Company will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.
The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawing, &c. with an accuracy and despatch which must ensure satisfaction.
The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

DURRAND'S "BONDED and SUFFERANCE WHARF," TIMBER-PRESERVING WORKS, ROTHERHITHE.—BETHELL'S process consists in preparing timber with creosote, or oil of tar, and is particularly applicable for Railway Sleepers, Bridge Timber, Telegraph Posts, Piers, Docks, Harbours, &c.; and the Outside Planking of Ships and Barges. And also for use in the colonies, as being perfectly impervious to the attacks of all kind of insects, and the dry rot. BETHELL'S and BURNETT'S, and MARGARY'S processes, in addition to their preservative properties, are likewise non-combustible, and are, consequently, highly adapted for the Navy, Dockyards, and Preventive Service Ship Building; and are also extensively used in House, Farm and General Building.
Extensive and most complete Machinery for the application of the above processes has been erected on these premises, which, being close to the great Timber Depôt of the Docks, are advantageously situated for land conveyance, or re-shipment; and from possessing Sufferance Privileges, are, consequently, equally applicable for Colonial and Foreign Trade.
Scale of charges and every particular of P. ST. QUINTIN, Superintendent, on the Wharf; or at Mr. BURT'S Office, 2, Charlotte-row, Mansion-house, City.

PADDINGTON SAWING, PLANING, and MOULDING MILLS, 3, Ironside Wharf, Praed-street, Edgware-road, near the Great Western Railway Station, and abutting on the Grand Junction and Regent's Canals, affording the advantage of railway and water carriage.
W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING-BOARDS, MATCHED BOARDING and MOULDINGS of every description prepared in a superior manner, from the best goods.
W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive mills afford convenience to purchasers for immediate conversion of their goods, on the most moderate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded post-free, on application.
N.B.—Sawing and planing for the trade.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Flare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.
The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Anne, Statuary, &c.
Also, a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.
Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Hearthstones, Yorkshire Paving, Granite, Curb, &c.
And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff &c. at the lowest possible prices.
All goods carefully packed and forwarded to any part of England.
JOHN HOLMES, Agent, Commercial-road, Pimlico.

Medieval Works, Memorials, Fonts, Screens, etc.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.
MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.
A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.
A liberal discount to the Trade.
MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.
Circulars sent on application
N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge. Office, 8, Crescent-terrace, Millbank, Mr. THOS THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

TO CONTRACTORS, BUILDERS, AND OTHERS

CHEESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Pinners court, Old Broad-street, London, Agent; or to Mr. J. J. TRATHAN, Manager of the Works, Liskeard, Cornwall.
Notice of the column exhibited from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue":
By Professor ANSTED.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension the mere mode of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

BOX WEATHER STONE, of best quality, SCALLETT BLOCK, &c. &c. supplied direct from the Quarries by ROBERT STONG, Quarry Proprietor and Stone Merchant, Box, Wilts. The great durability of the Box Ground Stone, without undoing the most intense frost, renders it a desirable stone for all external building purposes. Orders to any extent immediately attended to. Depôt, Box Station, Great Western Railway, where an extensive stock is always kept. Every description of Stone Work, both plain and ornamental, prepared ready for fixing. Ashlar Rangework, Walling Stones, &c. &c. always on sale. Vases in elegant variety. TURNS, FOUNTAINS, CHIMNEY PIECES, &c. &c. Box, Wilts, March 10, 1853.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and 68, Red Lion-street, Boroughmarket. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy. Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester. Information and samples forwarded on application to Caen Wharf, Rotherhithe. Samples may be seen at the Office of "The Builder."

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS.
BATH.
DEPOTS:

Great Western Railway Station....	PADDINGTON.
Great Western Railway Station....	BRISTOL.
Hope-street, Mount-pleasant	LIVERPOOL.
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Railway Floors to Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SEARLE, Pooles-street, and Messrs. BRADYS, Belvedere-road, where terms may be obtained.

ABERLLEFENNY SLATE and SLAB QUARRIES, near Machynlleth, North Wales.—TO BE SOLD by PRIVATE CONTRACT, these valuable FREEHOLD QUARRIES, which have hitherto been worked by a private gentleman (the proprietor), employ upon an average about 300 men. The operations, both in slates and slabs, are steadily progressing, and may be very considerably extended; and an Act of Parliament was passed during the last session for a tramway to facilitate the large and increasing shipments. The sales during the last year amounted to upwards of 9,000l. The books, showing the disbursements, net profits, &c. may be inspected by parties in a position to purchase; and further information obtained from Mr. DAVID JONES, Pontrilliheri, Machynlleth; or Messrs. DELMAR and WYNNE, 46, Lincoln's-inn-fields, London.

THE PIMLICO SLATE-WORKS.
Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally, MAGNUS'S ENAMELLED SLATE notwithstanding the vile imitations and infringements of his patent that are attempted, continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Sinks, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others that he continues to supply the Box-hill Ground Stone, Combedown, Coombedown, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and all other goods landed and carted.

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.: Good boxed York lard Paving, at 23s. per 100 feet; retail, at 4d. per foot; thicker Ditto, at 40s. per 100 feet; very superior, 44s ditto; thick rubbed Paving, in great variety of sizes, at 55s ditto; Harelaid and Seeled Slab of the finest quality, thin Scantle Flagging (viz from 24 to 4 inches); Sinks, large or small sizes at 1s. 6d. per foot; Steps, Sills, 12 inch, and 18 inch Curbs, all at very low prices; Success, Counters, and other Slates; Clay and Stone Pipes, Chimney-pots, &c. A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantle and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne, or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

By her Majesty's Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.
For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrading, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Effect.
Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.
Specimens may be seen and further particulars obtained at the Offices,
8, John-street, Adelphi. EDWARD MENDHAM, Sec.

BRICKS.—Stocks (bright, and of good quality) are now ready for delivery at H. R. BARLOW'S Brickfield, Queen's-road, Dalston, near the turnpike-gate.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded Bricks to any pattern
COWLEY, KENT, and ESSEX BRICKS; also Yellow and Pale Malm Seconds, Cutters, Paviors, Shippers, &c. &c.
KENTISH RAG STONE of the finest quality, and of the blue tince so much approved by architects, supplied on lists. FURTHER and CONSIDERABLE REDUCTION in PRICE
Apply to Mr. BENJAMIN GOUGH, 27, Newington-crescent, Newington Butts.

PAN TILES, 52s.; Plain, 35s. per 1,000; superior White and Red Facing Bricks. Best Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, Tiles, Clay, Windsor Loam, &c. Gasan't other shaped Goods. Manchester and Nonnch Oven Tiles and Bricks, Dutch and English Clinkers, Patent Malt-kiln, and Corn-drying finely perforated Tiles, 12 in and 9 in. Paving ditto, unequalled in quality and colour, at WARD'S old-established Honduras Wharf Bankside, Southwark, London. Thames Sand, Concrete, Gravel, &c. &c.

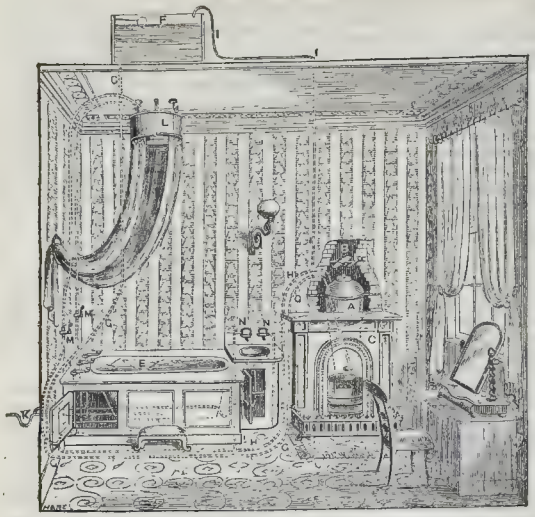
PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c
ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to any other for drains or conduits, for ridge, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections, of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and Slate of Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 133 (having been at first No. 111).

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a pleasant half-hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, and to judge for themselves.
Malm Place, half-washed Stocks, and Place Bricks also on sale. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing.
Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.
N.B. Light coloured pit sand or approved quality constantly on sale upon reasonable terms. This sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

BRICKS.—White Facing Bricks of very superior quality, manufactured by BEARTS' PATENT BRICK COMPANY, can now be obtained at their London depôt, in the Goods Station, Great Northern Railway, Maiden-lane, either delivered into carts or boats, at the option of the purchaser. For price or other information apply at the office of the company in the Great Northern Railway yard as above.—Works, Arlsey, Bedfordshire.

BRICKMAKERS' OAK HORSE-WHEEL, 25 feet diameter, with braces, fitted with bolts and nuts, wood cogs, oak vertical shaft 2 feet diameter, 8 feet long, on spindles, and two horse yokes.—To be seen at SILVERTHORNE and MASTER'S Brewery, Camberwell.

J. TYLOR AND SON'S BATH APPARATUS.



To fix a Bath, the apparatus for heating which can be fixed in the same room, and the luxury of an Open Fire retained.

A. Copper Boiler of sufficient capacity to make a warm bath, clasped by an iron band to support it, and fixed in the breast-work of a chimney. A flue is carried all round, and the draught is regulated by a revolving damper, *B*, which covers the opening into chimney. When set, the Boiler is entirely concealed from view.

This Boiler can be adapted for any chimney, by making it of an oval or elongated form.

A soot-door is fixed just underneath the damper for the convenience of cleaning, which, however, is rarely required, on account of the great draught round the boiler preventing any deposit of soot.

C. An ordinary stove front with sliding blower for the additional regulation of the draft.

E. Copper or tinned iron Bath, enamelled white marble inside, having three copper pipes, for the hot, cold, and waste water, which are indicated by the engraved levers on the cocks. The overflow is carried into waste-pipe *K*.

F. Cistern for cold water, say 100 gallons, which can be made of tinned iron, or any suitable material, either fitted into a recess or made of a cylindrical shape to stand on the floor of any room above the bath. The overflow can be carried into the waste or other convenient outlet.

G. Inch pipe from cistern to the pipe which goes to the bottom of boiler to fill it with water. A branch from this pipe also supplies the bath with cold water.

H. Inch pipe from the top pipe of boiler, to deliver the hot water into bath.

I. Half-inch pipe taken from the hot pipe *H*, and turned over the top of cistern, to relieve the boiler.

K. Inch or 1¼-inch pipe to take away waste water from bath into soil-pipe or drain, as may be most convenient, and must be well trapped before entering.

L. Round copper or tinned iron Shower Bath, suspended from ceiling, and filled with hot or cold water by branches from the pipes *G* and *H*, the supply being regulated by the two cocks *M M*, which are let in the wall, and have levers fixed on them, engraved, "hot and cold shower."

A thermometer can be fixed in the shower-bath to regulate the temperature.

N N. Wash-hand basin supplied with hot and cold water, by branches from the pipes *G* and *H*, the waste being carried into the overflow of bath.

By this simple arrangement, the boiler is always kept full of water, and cannot, by any means, be emptied by the action of the fire. The draught is so regulated by the blower and damper, that a bath can be made in twenty minutes, or an open fire kept continually alight.

WARWICK-LANE, NEWGATE-STREET, LONDON.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices, which is 15 per cent. cheaper, and better than that of English manufacture:—

In Cases, 200 feet ..... £1 16 6 } In sizes 16 by 30.
" 300 feet ..... 2 14 0 } to 42 by 31.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purpose it is supplied in squares of all sizes, from 6 by 6 inches and up wards.

For further information apply to Messrs. JAMES HARTLEY and CO.'s Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

EMBOSSED GLASS of every description, at LOW PRICES for the Trade. Designs and Estimates for House Decoration, and every variety of Work furnished gratis.—G. BOND, 436, Oxford-street.

FOREIGN SHEET GLASS, packed in 200-feet Cases, 34s., 36s. and 38s. per case.
Patent Sheet Glass,
in sheets of 42 by 26, 31. 9s. per crate of 300 feet.
GLASS TILES,
¼ of an inch thick,
packed in cases containing 50—31. 5s. per case.
JAMES PHILLIPS AND CO.
116, Bishopsgate-street Without.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 26, SOHO SQUARE.
ALFRED GOSLETT begs to inform Builders &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 313, OXFORD-STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

LOANS.—Persons desirous of obtaining ADVANCES from 50l. to 250l. upon approved personal security, repayable by easy instalments, extending over a lengthened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES.—Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6d. each copy, or 1s. per post Note. Four new classes are now in course of formation for London, and will immediately commence operations.

MONEY LENT ON PERSONAL SECURITY.—From 5l. to 300l.—For two years, one year, or six months.—Repayable by weekly, monthly, or quarterly instalments.—Finsbury Loan Office, 144, St. John-street-road, Clerkenwell. Established 1838 Registered pursuant to sec. 38, 7 & 8 Vict. cap. 110.—Open daily from Nine till Six. —No delay.

TO HOUSEHOLDERS.
BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company
No 16 and 18, Adam-street, Adelphi. R. HODSON, Secretary.

GROUND RENTS.—WANTED, to INVEST 9,000l. in the above description of property, which must not have less than thirty years to run, and be sold to pay a reasonable per centage.—Full particulars to be forwarded to Messrs. GREEN and DIXON, No. 3, Charles-street West, Gloucester-terrace, Hyde-park.

BURNHAM LOCAL BOARD of HEALTH. WANTED to BORROW the SUM of 1,000l. on the Mortgage of the Rates of the district of Burnham, for Thirty Years, the interest and part of the principal to be paid half-yearly, according to the Public Health Act, 11 & 12 Vict. c 63, as sanctioned by the General Board of Health. Any persons willing to lend the above sum on these conditions are requested to send to the Clerk of the above Board, at their office at Burnham, Somerset, on or before the 1st day of JUNE next, stating the rate of interest they will advance the same at. The clerk will reply thereto, and give any further particulars that may be required.
May 18, 1853. JOHN BUNCOMBE, Clerk to the Board.

A PARTY having 300l. or more at command can take a SHARE in a very valuable PATENTED INVENTION for Draining Damp Houses: the profits are very large. One of business habits preferred.—Apply (post-paid) to G. L. 9, Arundel-street, Strand.

TO BUILDING SOCIETIES AND CAPITALISTS
ANY Gentleman who can command about 18,000l. or 20,000l. to be secured by Mortgage on a very eligible Estate, expensively laid out for building purposes, might enter into arrangements with the proprietor for further carrying out the same on advantageous terms Principal or their Solicitors only will be treated with Apply by letter only, in the first instance, to O. P. Messrs Parkins and Gotton, British Stationery Warehouse, 25, Oxford-street



NOISELESS RINGS
GUTTA PERCHA CURTAIN & CORNICE RINGS.—These Rings have been much approved by the Faculty, particularly for nervous and aged patients. Owing to the peculiar properties of Gutta Percha, these rings do not make a noise when drawn along the pole or rod. The following sizes may be had, either with or without loops:—Sizes: 1 inch diameter, 1¼ inch ditto, 2 inch ditto, 2¼ inch ditto, 3 inch ditto, 3½ inch ditto.
TUBING, LINING FOR TANKS, ORNAMENTAL MOULDINGS, &c. manufactured by the
GUTTA PERCHA COMPANY
(Patentees), 18, Wharf-road, City-road, London.

ANTWERP and ROTTERDAM RAILWAY COMPANY.—Call of 1l. per share.—Notice is hereby given that at a meeting of the Board of Directors of the above Company, held at their Offices at Brussels, on the 12th day of May last, a CALL of 1l. per SHARE was made, which will be payable on the 5th day of JULY next at either of the undermentioned bankers, viz. Messrs. Masterman, Peters, and Company, London; Messrs. Matthew and Son, Brussels; Messrs. Moses Ezechiels and Son, Rotterdam; M. L. Martineau, Rue de Provence, Paris, Interest at the rate of 5l. per cent. per annum will be charged on all arrears of call. A report of the recent visit of inspection of the English directors to the above line of railway (the works of which are now being actively proceeded with) may be had on application at the Offices of the Company, 16, Cannon-street, London.—By order of the Board, RIXON and SON, Solicitors to the Company. 11, King William-street, London, 1st June, 1853.

The Builder.

SATURDAY, JUNE 18, 1853.

WHILE one reader blames us for encouraging the building operatives to make such demands on their employers as "must cripple trade and injure the country," another complains that we are "siding with the masters, instead of aiding the men in their just demands." We will take this as an evidence of—what is the fact,—that we have sought to hold the balance even. We have given, it is true, a record of the advances gained by the men throughout the country, which may have served as encouragement to those in other places; but we have not failed, at the same time, to caution the claimants against believing that compelling masters to pay higher wages will always bring permanent advantage. As we have on other occasions said, no one can deplore more sincerely than we do the hopeless toil to which thousands are condemned without respite; no one can be more anxious than we are to obtain for the labouring classes a greater proportion of the good things of this life than they now enjoy,—with less fatigue, a pleasant home, and time for improvement and recreation; but the causes which regulate these things lie deeper than the mere demand of those who want, and the will of those who have.

The movement is very extensive, and of deep importance to the whole community. Let us ask from both sides that proper weighing of the subject, and consideration for each other, that the gravity of the occasion demands. In the metropolis the movement has taken an organised form, and on Monday evening last, a general meeting of carpenters and joiners was held in the National Hall, High Holborn, for the purpose of considering the answer of the employers to their memorial, and also to decide as to what course it would be advantageous to pursue, in order to realise the request embodied in the latter.

The Chairman (Mr. Hooper) said, while they fully recognised the rights of capital and of property, they also felt it their duty to support the rights of man. He conceived that men had a right to receive a fair remuneration for their labour, and that was all that they desired by the present movement. The chairman then proceeded to detail the origin and history of the movement, which had for its object an advance of 6d. per day on the standard rate of wages. A memorial to that effect had been presented to the masters; and he was sorry to say that in the reply which had been received they had not been treated with that courtesy which he thought they had a right to expect. They had asked only for a small advance, and they had also given ample time, and the answer they had received from the masters was this—"That the demand for labour at the present time does not warrant an advance of wages."

Mr. Passmore then moved the first resolution, which was to the effect, that the increase in the price of many necessaries of life, the increased demand for labour at home and abroad, and the general success of the movement for an advance of wages throughout the country, amply warranted them in seeking for the advance which they asked in their memorial. Now, without laying too much stress on the increased demand for labour, for it had been said on the part of the employers that there were 4,000 carpenters out of employment in the metropolis, and, in truth, the demand for their labour in London was not very imperative, still throughout the country, as a whole, there was undoubtedly an increased demand, and the unemployed of the metropolis could easily be absorbed throughout the country, where, besides the briskness of trade, a great scarcity of labour was caused by the immense emigration that had for some time taken place, and he trusted that that emigration would continue to go on. He was satisfied that emigration was the great thing to which they had to look for giving that increase to wages to which they felt they were entitled. By emigration they could best hope to draw off the surplus labour, and they should adopt measures by which emigration could be successfully carried out. This was a much more hopeful way of improving their condition, both here and abroad, than in the support of strikes, which never would be successful. Such co-operative movements, with their divided government, their want of capital, and the unreasonable way in which many acted, would never be of permanent advantage to them. Let them establish an emigration committee, and thus draw off their surplus labour: they might with well-organised measures enable fifty of their fellow-workmen or themselves to emigrate per month. The amalgamated engineers had expended a vast sum of money worse than fruitlessly in supporting their strike, but at last saw the advantage of emigration. So with the compositors: at the eleventh hour they have taken up the subject of emigration on behalf of those who lately had a misunderstanding with one of the metropolitan papers. The speaker concluded by moving the resolution, which was seconded by Mr. Carpenter, who said the increase in the price of the necessaries of life—not confining themselves to food—within a year or so, was 20 per cent. while the advance they asked was not more than 10 per cent. As for the demand for their labour, there certainly was a much greater demand in the metropolis last year than at present. But the employers in the country had acceded to their just demand of an increase of 6d. a day in their wages, and he could not see why the employers in the metropolis should not do so also. It had been proposed by some employers to give certain workmen the asked-for advance, denying it to others. This, he believed, would create such a jealousy and ill-feeling amongst the men, that it would do inconceivable mischief; and, in truth, produce a complete revolution for the worse throughout the trade. It was not, he was sorry to say, the masters who were the greatest tyrants: those were the men one to another.

An attempt was made by one of the workmen (King) who had struck at Messrs. Brass and Son's, to carry a resolution countenancing "strikes," but failed. In the course of his address he stated that when Messrs. Brass were applied to for the advance, they had only remarked that, unless it checked the prosperity of the trade, it was all one to them whether they paid 5s. 6d. or 6s. 6d. a day to the workmen; and that in their future contracts they would calculate on a rise of wages to 5s. 6d. as requested;—that he and his fellow workmen felt assured from this that their wages would be at once raised to the required standard, but that the resolution of the masters undeceived them, and they immediately struck work.

The Chairman explained the course he had taken, and said if "strikes" were resolved upon, he should feel bound, as representing the society which had appointed him delegate, to retire from the movement. The delegates, 69 in number, and representing about 5,600 of their fellow workmen, were unanimous in their reprobation of strikes. Messrs. Brass's workmen had sent a delegate to the convention, and ought to have abided by the general decision. He must therefore resist the amendment, although he deeply sympathized with the workmen who had been led into error.

Mr. Wood said he greatly regretted the late strikes at Messrs. Brass's and at Messrs. Lucas's. They naturally excited an antagonistic feeling on the part of the employers, which was anything but favourable to their views and objects.

The resolution was then put, and carried by a very large majority.

A further resolution, to the effect, "That the meeting regretted the answer given by the masters to the memorial of the workmen, and that it respectfully suggested to the masters the reconsideration of the subject, in the hope that they would arrive at a more favourable conclusion," was then agreed to.

Mr. Langstaffe, a journeyman carpenter, objected to an indiscriminate advance to every one who might call himself a carpenter and joiner. Inexperienced men from the country he had known to be palmed off by wholesale on employers by societies at 5s. though not worth 2s. 6d. In the midst of interruption, Mr. Langstaffe said he desired merely to defend the men who knew their business, and to propose a remedy for the mischief he had pointed out. He would wish to see the standard of excellence raised as well as the standard of wages. He would have a jury to decide on the capabilities of men who offered themselves for employment as carpenters and joiners. He could show that the thing could easily be done. Employers would thus have some surety that they could depend on those who offered to accept engagements under them. The speaker endeavoured to procure a further hearing, but was put down both by delegates and meeting.

The resolution was then carried, and a deputation was appointed to wait upon the employers.

Messrs. Brass's men have issued an address to excuse themselves for the strike, on the ground that they were deceived by the first answer given by their employers. Messrs. Brass deny this statement: they say they are quite ready to raise the wages of really good workmen, but are not disposed to increase all alike.

The masters are all of opinion that the supply of labour is quite equal to the demand, excepting in the plasterers' trade.

On Thursday night (the 16th), the masters met at the Freemasons' Tavern, and came to the determination that they will not receive any deputation from the workmen while partial strikes are going on. The meeting represented the principal building firms in the metropolis; and their resolve, so far as we can gather, was, that if the present harassment of two or three employers be continued, they will give the men three weeks' notice, and then *close all their shops*. Messrs. Lawrence's men, we should add, have now struck.

Earnestly we implore the men to reflect on the frightful consequences which must result, should such a step be forced on the masters.

Without going to an extreme case, a lesson may be deduced from the history of the introduction of *papier-mâché* in the decoration of buildings as related by Mr. Bielefeld. In the last century, plaster ceilings, richly ornamented, were in general use, enrichments being worked, or rather modelled, by hand in their place. The number of skilled men being comparatively few, their wages were large, and they assumed much consequence, coming to work "girt with swords, and having their wrists adorned with laced ruffles." Subordination was preserved with difficulty, and ultimately these clever workers in stucco, laying aside restraint, combined to obtain what was considered an inordinate rate of wages. What was the result? Increased prosperity? No; the total ruin of their art. "Contrivances," says the writer, "were resorted to by the masters, which soon supplanted the old mode of working in stucco. The art of moulding and casting in plaster, as previously practised in France, was generally introduced; and the art of preparing the pulp of paper became improved and extended, so as ultimately to render practicable the adoption of *papier-mâché* in the formation of architectural decorations. Thus, at last, was extinguished the original mode of producing stucco ornaments; and there probably has not been for many years a single individual in England accustomed to that business."*

The men must not shut their eyes to the fact

* Quoted in Wyatt's "Industrial Arts of the Nineteenth Century."

that as the price of labour is raised, so must the cost of building be; and as this becomes greater, so will there be less building, and ultimately less demand for their services. The differences now so constantly occurring between masters and men must be very disastrous, and, if persisted in, will have the effect of forcing capital into other streams. With the uncertainty which now prevails, builders run great risk in undertaking any large contracts; and some of them, indeed, have already refused to do so.

> "Our advice is, strike for prices
> Nobler far than sordid coin;
> Strike with terror, sin and error,
> And let man and master join.
> * * * *
> Much the chopping, lopping, propping,
> Carpenter, we have to do,
> Ere the plummet, from the summit,
> Mark our moral fabric true?"

ANCASTER STONE AND PURBECK MARBLE.*

THE economical supply of stone for a large building in a particular district appears to depend on a variety of circumstances, such as the cost of quarrying by improved machinery, new or preferable modes of conveyance, and not unfrequently the prejudice that exists in favour of a material which has been long in use. The means of transport having of late years been greatly increased by railway communication, it now becomes important to ascertain whether equally good, or better building materials than those which have heretofore been used, in a given place, may not be obtained from other, although more distant, localities, upon equally, or more advantageous terms. In this manner a new field appears to be opening to the architect and builder in various parts of the country; especially where quarries of good stone happen to be near to a railway station.

In 1838, the commissioners appointed by Government, with reference to the selection of stone for building the new Houses of Parliament, visited the stone quarries situated between Grantham and Sleaford, in the neighbourhood of Ancaster and Haydor, in the county of Lincoln, and reported that "many buildings, constructed of a material similar to the oolite of Ancaster, such as Newark and Grantham churches, and other edifices in various parts of Lincolnshire, have scarcely yielded to the effects of atmospheric influences." At that time the stone was conveyed, as at present, by land to Grantham, thence by canal and by sea to London. The Great Northern Railway Company now offer to bring stone from Grantham to King's-cross station for about one-third of the amount formerly charged for water conveyance: this, in addition to punctuality and despatch, compared with uncertainty and delay, appears likely not only to introduce a new and beautiful material for building into the metropolis, but to promote the industrial economy of the country, by advancing the taste and practical operations of the architectural profession.

The quarries are numerous and very extensive, and, to judge from the inequality of surface, which is now covered with vegetation, including numbers of large trees, no doubt immense quantities of stone have been obtained in this district from a very remote period. The quarries are covered with a head of clay about 8 or 10 feet thick; there are a great number of beds, all very nearly level, from a few inches to 2 feet in thickness; they lie so close upon each other that, in some cases, the separation can scarcely be distinguished: occasionally two beds become gradually almost incorporated together, so as to form one out of those which, in other parts of the quarry, are divided into two distinct beds. There is scarcely any difference in the quality of the various beds. The entire depth of workable stone is about 14 feet. The joints are a long distance apart; blocks may therefore be obtained 15 or 16 feet long.

The quarries are all in the immediate neighbourhood of each other. The old quarries of Ancaster, and also those of Haydor, are held on lease by Messrs. Neale and Wilson, of Grantham. Messrs. Kirk and Parry, of Sleaford, are now working a new quarry, opened within a few years; the stone appears to be in every respect similar to that which has been used during past ages.

This stone is of marine origin, and belongs to the oolitic series of rocks; the component parts, ova and small shells, whole and in fragments, are firmly consolidated with a strong calcareous cement; a fractured surface presents the distinct globules separated from the coherent matter, and, in other places, hollow cup-shaped cavities are conspicuous. There is also, in the interstices between the ova and shells, an abundance of highly crystalline transparent cement (calcareous spar), which gives the stone a beautifully glittering appearance, especially when minutely examined by candle-light. In this respect, the Ancaster stone resembles some of the beds in the Ketton quarries, and also some of those on the estate of Lord Willoughby de Eresby, near Corby.

The colour of Ancaster stone is rather pleasing, varying from a pale to a deep rich cream, and occasionally approaching to a faint reddish tint. As the beds are rather thin, none being more than two feet thick, it might be objectionable for buildings of Greek or Roman design, for which massive blocks might be required for columns or architraves; but even for such purposes Ancaster stone is superior to that which is used for all buildings in Paris, where the beds of stone rarely exceed a foot in thickness.

On viewing a vertical section, that is, a plain face across the beds of this stone, something like an irregularly laminated formation may be observed; in consequence of which it seems to be the general practice to place Ancaster stones in a building on their natural bed. But in all cases where it is requisite to have long stones in an upright position, such as for mullions and jambs of windows, columns, or pilasters, Ancaster stone has been used for such purposes with complete success. In the buildings hereafter mentioned, numerous instances may be seen, where the stone has been long exposed to the weather in a vertical position, without any appearance of exfoliation or decay on one surface more than on another.

Ancaster stone is usually worked with tools similar to those used for Bath, Caen, or other soft stone; hence the cost of labour for masonry or carving cannot exceed two-thirds of the value of the description of work upon Portland or Anston stone. Ancaster stone appears to have been the principal material used during a very long period, for architectural purposes, in the neighbourhood many miles round the quarries; there is, consequently, a vast amount of evidence as to its durability and fitness for the purposes of masonry, either in plain or ornamental buildings.

Among the most recent buildings may be mentioned the Savings' Bank at Grantham, erected 1841; a dwelling-house at Sleaford, the residence of Mr. Kirk, of about the same date: both these buildings are imitations of styles which prevailed during the sixteenth century. There are also at Sleaford almshouses and a town-hall, erected about twenty years since, in the later style of English architecture. In all these buildings the stone shows no symptoms whatever of decay. Considerable additions were made to the mansion of Sir John Thorold, at Syston Park, with Ancaster stone, about thirty years since, the whole of which works are in a perfect state. At Belton Park (Lord Brownlow's), some domestic offices, which were erected more than thirty years since, are now in excellent condition. The main buildings at Syston, and at Belton, may be adduced as extensive edifices in very exposed situations, erected from 100 to 150 years ago: they are, in general, nearly covered with a grey lichen, and scarcely any appreciable decay can be discovered, with the exception of a very few stones, forming plinths near the ground, which are decidedly of a coarse and objectionable quality, apparently from some of the uppermost beds. The stable buildings at Belton are of the same date as the mansion, and the stone is remarkably free from decay.

As examples of the durability of buildings constructed with Ancaster stone, or a material of similiar quality, from some of the neighbouring quarries, at a much earlier date than the before-named, Hanbeck Church and Ancaster Church may be enumerated; both of which were erected during the Early English or Decorated periods, and still retain their mouldings and other ornaments in fine preservation, due consideration being made for their age. Among the most ancient structures in the vicinity of the Ancaster quarries, Grantham and Sleaford churches are excellent examples; that at Grantham is a magnificent edifice, built partly in the Early and partly in the Decorated style of English architecture, with a lofty tower, surmounted by an elegant and richly-crocketed spire: the whole is in good condition, more especially the tower, excepting some portions of the base mouldings. Sleaford Church presents specimens of nearly every style of English architecture. The tower, which is the most ancient part of the building, was erected probably about the middle of the twelfth century; but it is surmounted by a spire of later date. The north aisle has been taken down in order to be rebuilt, and it is worthy of remark that much of the old masonry, consisting of pinnacles, arches, window tracery of the Decorated period, &c. is lying on the ground, carefully preserved, in consequence of its being considered sufficiently perfect to be again used in the reconstruction. This circumstance afforded me an excellent opportunity not only of minutely examining the quality of the stone on the external surface, which had been exposed to the weather and all atmospheric influences during several centuries, but also of comparing the weathered exterior with such parts of the same stones as had been immured for ages inside the walls.

Viewing Sleaford Church collectively, it may be considered a satisfactory example of the durability of several varieties of Ancaster stone in the particular locality of the quarries; some of the stones are much harder and more shelly than others. The hardness may, to some extent, be occasioned by long exposure to the weather; but all seem to be of the same mineralogical character. This edifice, which is elaborately carved, and nearly covered with lichens, is completely insulated; it is, therefore, exposed to all the different aspects; yet the stone has, to a considerable extent, resisted disintegration; for although it is decayed in some parts it is nearly perfect in others.

It would be rather difficult to say which of the various quarries is likely to supply the best stone, as they all yield very similar material. According to experiments in the "Parliamentary Report" (March, 1839), Ancaster stone possesses higher specific gravity and greater cohesive strength than Haydor stone; consequently, in this respect, I should be inclined to give the preference to the former.

In conclusion, it may be right to allude to the possibility of a difference in the degree of durability in the same material when subjected to the effects of atmosphere in town and in the country. The evidence already stated is abundantly sufficient, on one hand; but I cannot learn that Ancaster stone has ever been used for building, or, indeed, for any other purpose whatever in a situation exposed to the full influence of a London atmosphere. In the country, even in the centre of provincial towns, such as Sleaford and Grantham, good and durable stones are invariably found to be covered with lichens within twenty, thirty, or forty years after they have been exposed to the weather. Such prolific vegetation is never found on the surface of buildings in London, nor within four or five miles of it; which shows that there is a considerable difference in the effect of town and country; and experience leads to the inference that, assuming all other conditions to be equal, the same block of stone would decay rather sooner, if exposed for a considerable time in the centre of a large city, than if it were to be placed under the same circumstances in a situation at least a few miles distant in the country.

Finally, I have no reason to suspect that Ancaster stone would be affected by the atmosphere of London in a different manner from what might be expected in any other stone employed under similar circumstances.*

* Read by Mr. C. H. Smith, at the ordinary meeting of the Royal Institute of British Architects, May 30.

* In order to ascertain whether any appreciable difference could be discovered in the chemical composition of Ancaster stone from the new and from the old quarries, and also in a sample of oldstone taken from the north side of Sleaford Church, the valuable assist-

PURBECK AND PETWORTH MARBLE.

The great interest which was evinced last Session on the subject of Mr. Donaldson's Essay upon the Royal Tombs in Westminster Abbey, and the lengthened discussion which ensued, made me hesitate to trespass further on that occasion by offering any remarks of my own respecting the materials of which these tombs, and certain parts of the abbey, are constructed. Having observed, however, at a subsequent meeting which took place within the sacred edifice, the enormous quantity of Purbeck and Sussex marble employed, not only in the original construction of the abbey itself, but in almost every tomb and monument raised during the Middle Ages to the memory of distinguished individuals, I think a few observations on the nature and properties of this material may be serviceable. To strengthen my remarks, I have lately visited many of the localities whence this marble is obtained.

I have observed it in Kent, Surrey, Sussex, the Isle of Wight, and Dorsetshire; I noticed it at Dinton, a little beyond Aylesbury, as the most northern limit; and, in France, I observed it in the neighbourhood of Boulogne and Beauvais, the tract of country containing it altogether occupying an area of about 200 miles from east to west, and of 150 from north to south. I believe it is the general opinion of geologists that, at some period incalculably remote, long before Britain was separated from the main land, this large district, which is characterised by the remains of fresh-water animals, was the estuary, or delta, of a mighty river, equal to the largest of those which now drain the continents of Asia or America. By far the greater portion of the mass of rocks, which abound in this district, is made up of a few species of fluviatile shells, frequently in fragments, and in some places almost pulverised; but the particles, although scarcely visible to the naked eye, still retain the organic structure which was impressed upon them by the living animal. In some places, as in the most westerly quarries near Corfe Castle, and at the top of the Isle of Portland, the Purbeck stone is so very light coloured, and fine grained, that it is chiefly identified as belonging to the fresh-water deposits by the fossils which it contains. In general, the stone may be said to be fine grained in the quarries north and west; while, in those approaching the east, in the counties of Surrey and Sussex, the pattern is larger, the shells are well defined, and scarcely any of them are broken; the marble from this latter district is, consequently, handsomer, and is more generally in request for ornamental purposes.

Purbeck has been long celebrated for its quarries, which have been worked from time immemorial, and particularly during the Middle Ages. The compact varieties of shelly limestone, which will bear a good polish, were, under the name of Purbeck or Petworth marble, in great demand for ornamenting the interior of religious edifices, especially those erected by the Plantagenets and Tudors; and there is scarcely a cathedral or ancient church in the kingdom that is not, to a considerable extent, decorated with clustered columns, pavements, or sepulchral monuments, constructed with this material.

Although the use of Purbeck marble may be somewhat revived within the last twenty years, it is not yet sufficiently in demand to enable the proprietors of quarries to keep men constantly at work in them. At this time there is but one place, called "Woody-hyde," near Corfe Castle, belonging to Mr. James Voss, where the genuine material, known by the name of "Purbeck marble," can be obtained. And at this *one place* there is but *one hole*, scarcely deserving the name of a quarry, which is entered by an inclined way at a little opening of about 4 feet by 3 feet leading to a cavern, probably 150 feet long, whence a few blocks of the marble are occasionally brought, just sufficient to meet the demand, but not more. There are many other places in this neighbourhood, indicated by elevations and depressions of the ground, but now deserted and overgrown with trees, from which marble was extracted in bygone times. There are also numerous localities in Surrey and Sussex, where the most beautiful varieties of this marble may occasionally be found; and a few small blocks, totally unconnected with any regular stratum, may accidentally be met with while digging a little below the surface of the ground; but their occurrence is quite uncertain. I am informed that there is a very large quantity of Sussex marble on the estate of the Hon. Robert Curzon, at Parham Park, about six miles north-east of Arundel, and that the well-known Petworth marble, which was so abundantly used during the middle ages, was principally obtained from this source. But at this time there is not sufficient demand for the material to induce any speculator to work the quarries; the ground has therefore been levelled, and no symptoms of marble can be traced on the surface.

All varieties of Purbeck marble contain a large proportion of clay in their composition, which is one chief cause of their perishable nature. It is surprising how soon the rich colour and beautiful polish disappear, even without being fully exposed to the external process of "*weathering*" by rain, frost, and other severe trials. Wherever it is freely exposed to the usual atmospheric influences, it will condense the aqueous vapours which are constantly floating in the air, and the moisture will be absorbed into the argillaceous portion of the marble. While this process is going on, the lustre of the polish is gradually diminished, the colour is altered, its hardness and cohesion destroyed, until at length the surface is completely changed to a dull, earthy appearance, and decay is the result; which will be facilitated or retarded in proportion to the quantity of clay contained in a given mass. Purbeck marble has also a certain amount of lamination: there will consequently be a greater tendency to decay, by exfoliation in small flakes, in the direction of the beds than across them. This is conspicuous where small columns are placed with the planes of lamination in a vertical position.

The beautiful clustered columns of Purbeck marble in the Temple Church, though only recently renewed, have already lost much of their polish: an indication of a preliminary stage towards decay. The large columns that support the clerestory of Westminster Abbey were originally polished Purbeck marble: there is now scarcely a trace left of the original surface; for they are all so decayed and disintegrated as to appear no better than coarse-grained common stone.

In further explanation, and in reply to questions from the members, Mr. Smith stated that the Ancaster stone ranked very high in the scale of soft stones, but was not to be placed upon a par with the best kinds of Portland stone, or with the Anston stone used for the Houses of Parliament. Those, indeed, were much more costly, and comparatively more durable. The decay which was already apparent in some few of the stones used in the Houses of Parliament was to be ascribed to the accidental employment, in those instances, of inferior stones. There were two beds in the quarry which were decidedly bad, and some stones from those beds had been inadvertently used at the Houses of Parliament. Another large building in London had been constructed entirely with the stone from those beds, and was, consequently, in a state of general decay. Ancaster stone was much superior to most of the soft stones in use, and although liable (as all limestones were) to be affected by acids, he did not think the amount of carbonic acid in the London atmosphere was sufficient to affect its durability to any extent. He believed, indeed, that stone which would last one hundred years in a remote part of the country, far removed from any city, would last eighty or ninety years in London. He believed Ancaster stone would be delivered at King's-cross for 1s. 5d. per foot, and that the quality of a block 15 feet square would be found good throughout. In Portland stone, the upper beds, though coarser, were more durable than the lower; but he could not detect any such difference in Ancaster stone.

Reference being made to the proposal that the Purbeck marble in the Temple Church should be French polished, Mr. Donaldson said that the Church of Notre Dame de Lorette, at Paris, had been found so dull and inharmonious in its effect, that it was proposed either to paint the stone or to cover it with a coat of plaster. It occurred to the architects, however, to have recourse to French polishing, which had been done with great success, producing great lustre and warmth of tone, and a complete harmony with the decorations of the church. M. Hittorff had adopted the same expedient in the Church of St. Vincent de Paul. Mr. Donaldson adverted to the singular fact that there was no specific definition of marble beyond the ancient meaning of the word,—lustrous, or shining.

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ance of Dr. William Allen Miller, of King's College, London, was obtained, and the result of his examination is appended hereto.

A. Is an analysis of a sample from quarries recently opened by Messrs. Kirk and Parry, of Sleaford.

N. Ditto of a sample from old quarries, now worked by Messrs Neale and Wilson, of Grantham.

O. Ditto of a specimen of old stone from the north side of Sleaford Church.

	A.	N.	O
Carbonate of Lime	96·21	96·62	96·97
Carbonate of magnesia	1·71	0·88	1·02
Oxide of iron and alumina	1·65	1·82	1·68
Sand	0·21	0·20	0·43
Moisture	0·10	0·09	0·18
	99·88	99·61	100·18

All three, when dissolved in acids, emit a distinct odour of bitumen, as indeed is generally the case with colites when so treated.

HOW THEY BUILT A CHURCH AT ST. HELENA.

THERE are two churches at St. Helena, one in the town, which is extra-parochial, and the other which is known generally as the "Country Church," from its position. This latter was a mere barn in appearance, and had been used in former times as a school; what it might have been before this, no one on the island seemed to know. It was in a very dilapidated condition, the walls hanging over in every direction, at all kinds of angles, kept up by strong props and struts, and threatening at every gust of wind to topple headlong down.

The cracks and flaws in the interior had been so often pointed and repaired, that it was seamed in every direction with these unseemly joints. At last, a part of the wall tumbled bodily into the governor's pew, and alarmed all the congregation to such an extent, that it was resolved to have the old church thoroughly repaired. This was, however, considered as a complete waste of money; and further, that it would be impossible to do so without pulling down all the old walls. A new church was consequently determined on. Through the recommendation of the Bishop of Cape Town, Mr. Ferrey, of London, was the architect selected, from whom plans were soon received. The next and most troublesome business was to raise the necessary money—a work of time and considerable difficulty: sufficient was, however, raised to make a beginning. A site was selected for the new church, in an open field on the brow of a swelling hill, terminating one of the many ravines in that picturesque island. It is placed at an elevation of nearly 2,000 feet above the level of the sea,—rising this height in the short space of about three miles one furlong. The position is very beautiful, as immediately in front is the governor's country residence, with its extensive and well-wooded grounds sloping down the hill towards the sea. In the rear it is backed by a plantation and a row of fine China cypress-trees, with other hills rising up at no great distance. It commands an extensive prospect over several hills, valleys, and mountain gorges, with a sea horizon to the north, reaching from this lofty elevation to a clear distance of nearly 60 miles. On considering all the bearings of the case, it was determined to have all the timber and ornamental stone at once from England; and, under the superintendance of Mr. Ferrey, these were prepared and forwarded by Messrs. Holland, of London; all of which arrived out in due course. As can be easily imagined, it was no trifling affair to drag these goods up to the site of the church at an elevation of nearly 2,000 feet. The very first road from the wharf to Ladder-hill rises upwards of 600 feet in a distance of one mile; it ascends the mountain-side by steep zig-zags or traverses, many of the turns so sharp as to prevent long timbers being carried up by carts. It was a work of some months to get all the stone and timber up to the churchyard, and many schemes were resorted to for effecting this necessary purpose. The stone work was carted up by trucks and drags. Embargos were laid on every empty vehicle going towards the church, even if only to carry up a single stone, which was submitted to with very good grace by the inhabitants, who, for their own convenience, were anxious to get the church finished. All the long timbers and curved trusses for the roofs had to be carried up by manual labour. A considerable quantity was taken up by the voluntary labour of the inhabitants. The governor lent

us a considerable number of poor Africans, who had been but recently liberated from a captured slaver. None, of course, could speak a word of English, as they had but recently been kidnapped from the African coast; however, we knew enough of the lingo and Benguela languages amongst us to make our wants known, and we met with ready obedience. These poor creatures had as usual suffered severely from the horrors of the "middle passage," and were in a very weakly condition. It was no unusual thing to see half a dozen negroes trudging away with one solitary rafter; a purlin was a fair load for a dozen, and at least twenty were occupied at one of the carved trusses; while a single bundle of laths was considered sufficient for a darkie by himself. In this way we employed upwards of a hundred slaves fresh from the African coasts. They were under the care of an English overseer, and the cortège was generally led by a little nigger rigged out in a midshipman's old jacket, with a red woollen cap decorated with a plume of shavings by way of feathers; and very proud he was of his position at the head of the band. They only made one journey a day. When they reached their destination, and landed the goods in the churchyard, they were rewarded with each a pipe and bit of tobacco, and refreshed with wine and water in the sober proportion of one *bottle* of wine to a *pail of water*, which they imbibed out of an old basin, or anything else that came to hand. After enjoying themselves with this delightful beverage, and devoting half-an-hour to hunting after "blackberries" and the prickly pear fruit, they set off on their homeward journey to their tents at Rupert's Valley, singing a merry stave all the way to their journey's end.

Perhaps a real "nigger ditty," as sung by genuine natives fresh from Africa, may be amusing to some of your readers, affording a contrast to "*Dandy Jim from Carolina*." The poor fellows themselves call it the "*Macoonga-whap fooka*," or the Depter's Song. Like all their ditties, it is rude and simple, and is an average specimen taken from several which I have jotted down:—

Tartar-jimbongo
Oon-ch-om-be-la—moo anna goo-loo
Nue footella, jimbongo zar-me
Tartar jimbongo
Nue footella moe anna goolooo
Tartar wha-decar jimbongo.

Of which the following is a more literal than elegant translation:—

Daddy, give me money,
To buy a little pig;
You buy a little pig for me;
Daddy, give me money,
You buy a little pig for me.
Alack! poor daddy, he's got no money.

After this effusion, we will return to the church building, and inform the reader how the new roads and terraces were brought to a conclusion, all being executed by volunteer labour. Volunteer labour-days were generally announced from the pulpit, which had in general the effect of bringing together a motley assembly to co-operate in the "good work," made up from all classes of society,—from officers of militia, farmers, and labourers, down to negro servants. Those who could not attend sent men-servants, or in lieu thereof a substitute in the welcome shape of sundry dozens of bottled beer. The farmers contributed sheep, which were generally made into huge sea-pies; others sent vegetables; some grog and cigars; and all contributed good appetites, well sharpened by the work. When the day's labour was done, we generally had a good feast under the shadow of a thatched shed, with planks for tables, which groaned beneath the weight of sea-pies and black bottles. The feast was always furnished with an odd sprinkling of speeches, compliments being of course the order of the day. We persevered in these festive labours till the work was completed, the roads made, and all the terraces finished. The farmers were liberal with their gifts of sheep and vegetables, the merchants with beer, some with wine, and all with a hearty good will for the work.

But to return to the church. The stones for the foundations were not quarried, but gathered from the neighbouring hills, where they laid about in confused heaps among the stunted bushes of bringall and the prickly pear. We selected the largest and flattest slabs that could be found, and conveyed them the best way we could to the road-side, in readiness to be conveyed to the works on drags brought for the purpose. Many of them were of great weight. They were used in the rough, just as they were found—the flattest face being laid downwards. As the foundations are executed on the sloping brow of a hill, one of the flank walls was dug down much deeper than the other. The northern flank was at least 6 feet deep, and the southern from 8 to 10 feet, or more, according to the lie of the ground. The trenches for the foundations were 4 feet wide. As soon as they were carried down to the proper depth, the first course, or footings, was laid down, and well rammed in a bedding of properly-tempered mud, prepared like mortar. All the irregularities were then levelled up by means of thin slabs, and stone chips driven into every open space by mallets, till the first course had assumed the shape of a compact bed of stonework. A thin layer of mud was then spread over the whole, and a second course laid down in the same way, and so on till the foundation course reached the requisite height. Special care was taken to fill in every open space between the stones with small slabs and stone chips, so as to make the whole mass of uniform solidity. No lime mortar was employed in the foundations. The mud here spoken of is a kind of coarse puzzolana—mostly consisting of decomposed felspar and other materials—it is commonly employed as mortar in St. Helena for mud roofs and all kinds of common masonry. All the stones used in the foundations were of a hard, dense lava, very like iron stone, and all of large superficial dimensions. A considerable quantity of iron hooping was used in these basement walls; it consisted of the longest hoops we could obtain from old tubs, barrels, and water-butts, so that it was literally "hooping," and considerably stout. This was the first application of the kind in the island, and appeared quite a puzzle to the "mud-masons" of St. Helena, who have little, if any, notion of binding their work. From the plinth upwards, lime was employed to the whole of the wall, except in the middle of the west front, which carried the turret; here a portion of the middle was filled in with the puzzolana, to economise lime, which was at that time difficult to be obtained in the island. The best of the lime was quarried in the island; some came from England; but the greater part was shell-lime from the Cape of Good Hope, which is of very fair quality. Much of the sand was from the coasts of Africa, brought to the island in captured slave-vessels; the rest was beach sand, always used unwashed, especially when mixed with the island lime. All this had to be carried up the hills in bags on the backs of a stud of not very lively asses.

Some of our scaffolding was obtained from the little pine forests near the church; but the best and greater part were spars and yards from the slavers, lent by the merchants of the island. There was some difficulty in obtaining qualified masons, as only one in the island—a soldier—had ever seen a similar work; none of them could be trusted with the placing of Bath stone quoins and window dressings, so that nearly all the best of the work was done by one man, and he had to act as a kind of instructor to the rest.

We had to watch them very closely, to see that they used proper binding stones in proper places; for if they had been left to themselves, they would most assuredly have built a "*two face wall*," filled in with mud and chips of stone.

A recent census of the island gives the following list of mechanics:—

Carpenters	40
Masons	17
Plasterers	3
Painters	3
Plumbers	6
Blacksmiths	10
Labourers	518

The best of these mechanics were generally in the constant employ of the Government, so that we had to pick and choose from the refuse. More than half of these were only self-styled mechanics, being one day a carpenter, next a mason, and at other times a plumber. The second best mason at the church did all the leadwork afterwards, both to the roof and the windows; most of them were jacks-of-all-trade, and certainly masters of none. The best labourer was often borrowed to act as "*man cook*," by such of the gentry as were in the habit of giving dinners; and was quite as famous for his curries and turtle soup, as for masonry. The labourers were of all kinds and colours, of average quality, and willing enough to do the work to the best of their ability. The clerk of works was no less a personage than the adjutant of militia, who kept the men in good order, and all to their work, though he knew nothing either of the qualities of materials or of construction; but yet he was a very valuable overseer, and materially influenced the progress of the works. The hard lava plinths were dressed by a gang of five French masons from Bourbon—accidentally left in the island—who proved quite a Godsend, for two or three weeks.

After nearly two years of fitful labour, often interrupted by want of money, the church was brought to a completion and opened with due ceremony. It looks very well, and makes quite a striking figure in the general landscape. Its Bath stone windows, quoins, and door arches contrast very well with the deep grey of the lava ashlar wall, and it looks on the whole like a veritable Kentish church, with its rough rag-stone walls. The open timber-roof was a novel feature to the worthy islanders. The windows were coloured to keep out the glare of a tropical sun, and were an equal novelty to the people,—they looked better than could have been expected under the circumstances, and their "dim religious light" was not the least pleasing feature in the general aspect of the church. When the church was begun few expected to see it finished under many years,—but perseverance surmounted all difficulties, and it was finished in what was considered by all "an incredibly short time,"—less than two years.

JOSEPH LOCKWOOD.

MASONS' PROVIDENT INSTITUTION.

THE second annual dinner in aid of the funds of this useful institution took place on Monday, the 6th, at the Freemasons' Hall, under the chairmanship of Mr. W. Tite, F.R.S. the president. A goodly muster of intelligent artisans united to enjoy the fare, provided liberally and at a moderate cost; but the chairman's table was not so full as it should have been. Mr. Myers, Mr. Freeman, Mr. J. Bazley White, Mr. Jackson, Mr. Franklin, Messrs. Hemmings and Foster, Messrs. Martin and Wood, Mr. Thomas, Mr. Thompson, Mr. Yates, and Mr. McSwiney, were amongst his supporters.

In proposing the health of her Majesty, the Chairman said, that in order that the toast might be duly honoured, he had had the gratification, in conjunction with Mr. Myers and Mr. Freeman, to direct that a supply of the best wine which the cellars of the establishment could produce should be provided for every visitor.

"The Queen," "Prince Albert and the Royal Family," and "The Army and Navy," having been duly toasted,

The Chairman proceeded to the toast—"Prosperity to the Masons' Provident Institution." He felt the greatest pleasure in proposing it, because, as an Englishman, he naturally had a deep interest in all that concerned the welfare of his fellow-subjects; and particularly because, as an architect, he was indebted equally to masters masons and to working masons. This was especially the case in the Royal Exchange, one of the largest masons' works of recent times; and whatever the merit of that work in point of taste and architecture, he could safely say that it was impossible to see work better executed than was the masonry of that building. He proceeded to urge the good that might be effected by the working classes if they endeavoured to help themselves. That was the principle on which the Masons' Provident Institution was based; and nothing could be more reasonable and practical than its object,—that of providing an asylum in old age for those who had worked industriously in youth and manhood; giving that assistance only to those who had been contributors to the funds. Considering the amount of skilled labour

in the mason's craft, he was a little disappointed that more had not been done. At a rough guess, he supposed there were 2,500 masons in London, earning good wages, and able to secure constant work; but although the subscription to the society was only ten shillings a year, it comprised no more than 250 members from all parts of the country. He did not, however, wish to mingle regret with the festivities of the evening, and would rather congratulate the meeting on the beginning they had made, and encourage the hope of increased usefulness and activity. How much might be done if 1,000 members could be obtained! Moderate as their success had been compared with his own expectations, it was satisfactory to know, then, that 300*l.* had been invested; and that pensions had been granted to masons, and to the widow of a mason. The bricklayers and the cordwainers had their almshouses, and by a little more perseverance the masons might have theirs. They must rely, however, in the first instance, on their own exertions rather than the support of their employers; which, though it could not *precede*, would assuredly *follow* their efforts, and double, perhaps even quadruple, the results they might achieve. The chairman added that he had received a letter from Mr. Sidney Smirke, the honorary architect, apologizing for his absence on the ground of ill-health, and enclosing a donation of 5*l.* 5s. Mr. W. Harrison had also written, forwarding 2*l.* 2s. and Mr. Noel had likewise sent his donation. Trusting that the present meeting might be taken as an augury of future success, he heartily proposed "Prosperity to the Masons' Provident Institution."

Mr. Clay, one of the earliest promoters of the institution, in speaking to the toast, dwelt much upon the distress which the society was intended to relieve, and upon the very small amount of the subscription; and he appealed to the gratitude of the younger members of the trade towards their elder fellow workmen, who, in fact, taught them their business, and who in old age and misfortune were entitled to their warmest sympathies.

Mr. Dix, the secretary, read a list of subscriptions and donations, including the chairman, 10*l.* 10s.; Mr. W. Freeman, treasurer, 5*l.* 5s.; Mr. T. Brassey, 10*l.* 10s.; Professor Cockerell, 1*l.* 1s.; Messrs. Chadwick and Acroyd, 2*l.* 2s. and 2*l.* 2s. annually; Mr. Franklin, 1*l.* 1s.; Messrs. Martin and Wood, 1*l.* 1s. and 1*l.* 1s. annually; the British Provident Assurance Society, 2*l.* 2s.; Mr. Farrer, 2*l.* 2s.; Mr. McSwiney, 1*l.* 1s.; Messrs. J. B. White and Co. 5*l.* 5s.; Mr. G. Myers, 5*l.* 5s.; Mr. Jackson, 3*l.* 3s.; Mr. Thompson, 1*l.* 1s.; Mr. Foster, 1*l.* 1s.; Mr. Dyke, 10*l.* 10s. &c. &c. &c.

The remaining toasts were of a complimentary character.

Mr. Freeman proposed the health of the "Chairman."

The Chairman proposed "The Vice-Presidents." Messrs. Wakley, Geo. Baker, W. Harrison, and C. H. Smith; and the "Treasurer."

Mr. Foster, in proposing the health of "Mr. Myers and the Master Masons," adverted to the ancient glories of the mason's craft, of which, in common with his brethren, he was proud to be an inheritor; and observed that while the fisherman upon the Thames in former days deposited the salmon which have now deserted the river as an offering upon the altar of the Abbey of Westminster, so the masons gave the labour of their hands without remuneration in the erection of the same noble edifice. As they had established one of the grandest temples of Christian worship, so their successors in the present day should erect a worthy temple of benevolence, in which a refuge might be provided for the aged mason from the bitterness of poverty and misery. The speaker alluded to the importance of a cordial understanding between the employer and the employed, and pointed out the ability required to economise the labour of large bodies of men so that the public might receive the fullest benefit, and the artisan his fair reward.

Mr. Myers, in returning thanks, adverted to the scarcity of superior workmen, and in strong language urged upon the working mason the importance of improving himself so as to be able to carry out the spirit of a drawing rather than to be content with mere mechanical execution.

"The Managing Committee, and Mr. Whitehead, the late Secretary;" "The present Secretary, Mr. Dix," and "The Press," coupled with the name of the "Editor of the *Builder*," brought the proceedings to a close.

THE HORTICULTURAL GARDENS AT CHISWICK.

A VISIT to a flower-show at Chiswick is always something more to us than a lounge in pleasant places amongst well-dressed people. We acknowledge to a weakness in favour of all scenes which innocently cheer, invigorate, and enliven; for we say with Chas. Swain,—

> "'Tis well to have a merry heart,
> However short we stay;
> There's wisdom in a merry heart,
> Whate'er the world may say.
> Philosophy may lift its head,
> And find out many a flaw;
> But give us the philosophy
> That's happy with a straw!"

And as to flowers, to look on them is with us a delight, from the meek snowdrops, singing,—

> "Praise be to Him who sent us here, foretelling
> Winter's rain is passing, spring tide draweth nigh;
> Fair flowers we herald, flowers ourselves excelling—
> Sweeter in their fragrance, brighter in their dye,"

to the gorgeous glories of the summer's close;—from the lowly violet, scarcely strong enough to carry its result, to the rose-tree of Hildesheim, with its stem 26 feet in height.

> "Your voiceless lips, O flowers, are living preachers;
> Each cup a pulpit—every leaf a book,
> Supplying to my fancy numerous teachers
> From loneliest nook.
>
> Floral apostles! that, in dewy splendour,
> Weep without love, and blush without a crime;
> Ah, may I deeply learn, and ne'er surrender
> Your love sublime."*

The shows at Chiswick, which commenced no earlier than 1833,† have wonderfully aided the progress of plant cultivation in England; and the Horticultural Society deserves well of the public. They have meetings, too, at their rooms in Regent-street, and,—

> "They read botanic treatises,
> And works on gardening through there,
> And methods of transplanting trees,
> To look as if they grew there."‡

We must not pretend to any great skill in the flowery science, yet, strange to say, we find our little experiments on the effect produced by charcoal on the colours of flowers, briefly recorded some time ago, moving the admiration of our neighbours the French, and descanted on learnedly in the "Revue Horticole." When the *savans* went to the great poison-chemist, Scheele, to see his apparatus, he showed them a few phials and tubes in a closet: if they send a deputation from France to see ours, they will find three broken garden-pots in a one-pair window.

The colours of the flowers at Chiswick, last Saturday, needed no doctoring: there was an exquisite show, speaking of much progress and suggesting many thoughts:—

> Ye speak of hope and love,
> Bright as your hues and vague as your perfume;
> Of changeful, fragile thoughts, that brightly move
> Men's hearts amid their gloom.
> Ye speak of human life,
> Its mystery—the beautiful and brief;
> Its sudden fading, midst the tempest strife,
> Even as a delicate leaf.

THE BOARD OF HEALTH AND SUPERINTENDING INSPECTORS.

WE have received some statements on this subject bearing on the quotation we gave from Mr. Hawksley's letter, in which letter that gentleman charges the superintending inspectors with "corrupt practices" and the "grossest jobbing," but it does not seem to us fair thus to malign *ex parte* and in general terms a body of gentlemen who have been placed, as it seems to us, in an entirely wrong and very painful position, by being allowed to execute works as private engineers and for their own emolument, on which they had reported and advised as government inspectors, and to which their assent would be required if executed by others.

One of the inspectors, we understand, intends to give Mr. Hawksley an opportunity to prove the truth of his charges, by immediately commencing proceedings against him in a court of justice. The inspectors owe it to themselves to do this. All we can say is, if there have been corrupt practices it is quite right that they should be exposed.

A general inquiry into the working of the Board of Health will be made at the commencement of next session.

* Horace Smith.
† There was a fruit show in 1831.
‡ Tennyson.

SIGHTS AND SCENERY.

The Princess's Theatre.—It was a capital thought on the part of Mr. Charles Kean, to bring Nineveh, in all its power and glory, as shadowed out by the discoveries of Layard and Botta, visibly before the eyes of all by the reproduction of Byron's "Sardanapalus;" and the idea has been carried into execution with the skill and taste of an accomplished antiquary and artist, regardless of cost. Of this latter fact, our readers will feel assured when we say that 2,200*l.* have been expended upon it. The scenery, painted under the direction of Mr. Grieve, includes a view of the city of Nineveh and the river Tigris (Gordon); the interior of the Hall of Nimrod (F. Lloyds)—a gorgeous polychromed scene, painted with much skill; and the Destruction of the city of Nineveh by fire (Dayes). In the moonlight view of the first scene, a shadow is produced on the sky by the tower, which is painted on an independent canvas: this it will be well to remedy. The dress and appointments of all the figures have been carefully studied from the bas-reliefs (Mr. Kean's own dress is singularly fine), and there is nothing to mar the completeness of the whole. Crowds of guards, nobles, standard-bearers, and dancing-girls fill the stage and produce groups of very fine effect. Mrs. Kean's *Myrrha* is a charming personation; her poses, especially at the close of the third act, are full of grace and beauty.

Mr. Kean, in his preface, dates Sardanapalus 606 B.C. which is later than the date we should be disposed to adopt. Fergusson thinks it about 880 B.C.

The Haymarket Theatre.—For Mrs. Crowe's romantic play, "The Cruel Kindness," Mr. Charles Marshall has painted a beautiful forest-scene by moonlight, full of clever effects. The retention of the light on one side, when the moon has passed to the other, is perhaps questionable. "A Hunting Lodge," by Mr. Morris, is also entitled to commendation. The piece itself, although in some respects crude, is very clever, and has several striking situations. Mr. Howe acts admirably in it.

THE RESPONSIBILITIES OF ARCHITECTS AND BUILDERS.

Turner v. *Garland and Christopher.*—This case, which was argued before Mr. Justice Erle in the Court of Queen's Bench, on 3rd inst. has features of considerable interest to the profession. The plaintiff is Mr. John Turner, of North Brook, a gentleman eighty years of age; and the defendants are architects, in the Adelphi. Mr. Christopher had been for some years professionally employed by plaintiff. In 1848 he purchased for him the premises of Mr. Biers, the builder, in Dorset-place and New-street-mews, Marylebone. The plaintiff determined to erect a model dwelling-house in the mews, in place of the workshops; had a great variety of designs prepared, and took twelve months to determine. The architect was restricted as to the height of the building; it was to have a flat roof, and lead was too expensive; it was to be economical, to return 7*l.* per cent. on outlay, and it was desirable that it should be fireproof, and include the latest improvements in buildings of this description.

In the autumn of 1848, Mr. C. being at Bristol, had his attention called to the principle, now known as Fox and Barrett's patent, at Northwoods; he was much struck with its apparent merits; he wrote on his return a letter, describing what he had seen, to the *Builder*, which was subsequently republished by the patentees, and sent to Mr. Turner, accompanied by a note of recommendation. It was not until August, 1849, that it was decided to adopt this mode of construction; then a contract was entered into with Messrs. Birds, builders, of Hammersmith, for the works generally, the iron girders being reserved for a special contract with Messrs. Grissell, the London founders, under the direction of Fox and Barrett, who furnished a detailed specification for the construction of the floors, roofs, and ceilings, on their patent principle, and sent the founders plans and sections of the cast-iron girders, with the proof weights to which they were to be tested; they also laid down upon the plans the

position of each girder used. The building was erected during the autumn and winter of 1849, and in April, 1850, possession was given up to the plaintiff, and it was immediately occupied. The roof, with ceilings, had cost 74*l.* while an ordinary slated roof and ceiling would have cost 23*l.* three times as much; and a lead roof would have cost 300*l.* The roof for a considerable time was considered a specimen of workmanship, and was seen and admired by many.

The builders' account was settled in November, 1850, and the architect's in March, 1851. It was not until the summer of 1851, that any thing of importance occurred to the roof, when it showed some serious cracks, through which the rain gained admission.

During June and July the defendant, by the desire of the plaintiff, surveyed the roof and reported the cracks were entirely superficial,—not caused by any settlement or unsoundness of concrete, and suggested several effectual modes of making it watertight at a cost of from 20*l.* to 30*l.*

In February, 1852, the roof was in part demolished, and a new roof of ordinary construction placed on it at a cost of 230*l.*

Mr. Brammel and Mr. Unthank were counsel for plaintiff, and Mr. Bovill and Mr. Ashpland for defendants.

Mr. J. W. Higgins was the principal witness for plaintiff, and deposed that the girders were clearly, in his opinion, not equal to the duty imposed upon them, and took his stand upon that: could *see* they had sagged and deflected. There were small external cracks, whether two, or three, or more cracks, he could not tell; saw the roof first in February, 1851. About October, saw the roof again; the roof was getting worse, and would have been worse without remedy being afforded; advised a new roof. The strength of girders ought to be sufficient not to deflect.

In cross-examination.—Thought there was not strength enough; it was evident, from the fact of the girders being sagged (deflected). I saw the best evidence of this in that they had not discharged their duty. Everything might have been remedied if girders were sufficient; did not test the strength of the girders, nor calculate the weight they had to bear. It was a novel plan, and he was averse to it, and he disliked novelties. A slight crack would let in wet. Had adopted cements and asphaltes extensively for roofs. The roof had not been taken off. Things will *sometimes* fail.

Mr. G. A. Young, a surveyor and builder, had examined roof and building several times with Mr. Higgins, and since; was employed as the builder to put on the new roof; considered roof not constructed in accordance with patent; read specification of patent, which it appeared to follow pretty closely except "the tar and paper;" the waterproof covering which had been left out, and nothing but lime and sand substituted

Portland cement will allow percolation; had never known it used for cisterns; thought it unfit for a flat roof, or to keep out wet or damp anywhere,—Roman cement might; proved that the girders had deflected from "¾ to 1¼ inch."

On cross-examination—said he did not recollect any cracks in the ceilings; had not made any careful calculation of weight of roof, but from a rough calculation should say each girder had to bear 1½ ton; would not swear they had to bear 16 cwt.; had not examined the patent floors or roofs either before or since he was called in by the plaintiff.

Mr. Ainger took same view as to deflection of girders; roof had cracked in consequence; thought he had observed some slight cracks in ceilings adjoining walls, through which wet came. Cement had cracked; had not tested girders or roof; had made no calculations; had not seen sections of girders, but thought them too slight, and ought not to deflect.

On side of defendant evidence was adduced:—1st. As to the facts before stated in opening the case; that for nearly twelve months the plaintiff was considering the matter, during which period many designs were prepared which were not paid for; that although defendants recommended Fox and Barrett's principle, they did not warrant its success; that it was well understood that it was to a certain extent "an *experiment*." The plaintiff took six months to consider, after receiving a pamphlet on Northwood's; and then decided on adopting it from the advantage it offered. The architect had accompanied Mr. Barrett to see the joists proved, and observing they deflected more than he expected, had some tested 50 per cent. over the proof weight (viz. to 18 cwt. on girders with 12 feet bearings), entirely with satisfactory results. The building was of unusual strength, intersected with a network of walls internally (twenty-seven in an area of 1,800 feet, all carried up to roof). No bearings exceeded 12 feet. The roof might be described as consisting of slabs of artificial stone, strengthened by iron ribs (embedded in its substance), resting entirely on these walls.

Mr. Christopher gave evidence as to the strength of the roof and sufficiency of the girders, in which he was supported throughout by Messrs. I'Anson, Ashpitel, and Boulnois, architects and surveyors, and Mr. Barrett, the patentee, who all inspected it both before and after it was broken up.

The roof was a flat roof, with sufficient fall to ease off the water. It was covered externally with Portland cement from 1 inch to 1½ inch in thickness, and was remarkably hard, firm, and strong. The Portland cement had cracked and let in the rain.

The building throughout was built in the best and most substantial manner, and no settlements were discoverable in the walls or elsewhere, to account for the cracks in the cement of the roof. The ceilings were everywhere entirely free from cracks, and decidedly more perfect than in ordinary buildings. They one and all had "no doubt whatever" that the girders "deflected" or took their bearings, and permanently settled themselves when they had the greatest weight on them, and that this was during the progress of the building, when the whole of the wet concrete had been put on, and the workmen were wheeling over the floors, &c.; and that the finished surfaces of the roof and ceilings were added months after this, when the concrete, &c. had long become consolidated into a mass or slab. The *cracking of the cement was not owing in the least degree to the deflection of the girders.*

Mr. Boulnois had no doubt the roof was strong enough to have held a crowd to witness a passing show. Mr. I'Anson was so far from thinking Mr. Turner's house a failure at his survey in 1852, that he had adopted Fox and Barrett's patent in a house he is now building for his own occupation. Both this witness and Mr. Ashpitel had used Portland cement extensively in flat roofs, but generally with two or three courses of tiles. Sometimes answered perfectly and sometimes it did not; it was commonly considered a waterproof material, and was used in cisterns and public baths.

Mr. H. Grissell, the founder, and Mr. Barrett, the patentee, added their testimony as to the sufficiency of the girders; the former gave testimony, from his enlarged experience, that the girders were quite adequate to the weight they had to bear, even taking the mass of the roof as "dead weight," adding that all girders deflect when loaded, "that they ought to deflect," that it would be a bad sign if they did not deflect. The girders were commonly "cast camber," to allow for their deflection in taking a level line when loaded; that these did not deflect more than they should; there was no gain of strength by casting girders camber, it was merely done for appearance.

Mr. Barrett had employed the very same sections of girders used in this building, in others, and in some, slighter girders, in proportion to the bearings. He had seen the roof in all states and in all weathers; there were no irregularities on the surface; he never saw water lying on it; it was as firm and sound a roof as could be. Messrs. Robins and Co. the manufacturers, guaranteed their cement as a perfectly waterproof covering, and on its partial failure in this instance, offered to take off and re-execute the whole without charge, but were not allowed by plaintiff, he having been wrongly advised. Portland cement was usually considered a far better covering for a roof than tar and paper. There were many inexpensive and easy modes in which the mischief might have been remedied.

Mr. Justice Erle, in the course of summing up, said, The plaintiff will merit your verdict, if the defendant was found to be wanting in the competent skill of an ordinary architect. If he possesses competent skill, and was guilty of gross negligence, although of competent skill, he might become liable. If of competent skill, and had paid careful attention to what he undertook, he would not be liable. You should bear in mind that if the building is of an ordinary description, in which he had had abundance of experience, and it proved a failure, this is an evidence of want of skill or attention. But if out of ordinary course, and you employ him about a novel thing, about which he has had little experience, if it has not had the test of experience, failure may be consistent with skill. The history of all great improvements shows failure of those who embark in them: this may account for the defect of roof. The charge in the plaintiff's case is "the deflection and insufficiency of girders." The case was brought into court on the insufficiency of the girders, and I am not aware of any other case on the part of the plaintiff. As the plaintiff's counsel declined putting it on any other ground, this was his case. Christopher is called on to give his evidence. His answer was, "the girders were sufficient." Grissell and Barrett, from their experience, are clearly of opinion that they are "quite adequate." Testimony to this is borne by the other witnesses, who severely tested the strength of the roof, and one of whom says it was strong enough "to bear a crowd of people to witness a passing show." Christopher had introduced it as a novelty, and if a novelty, I do not know how he could have taken better care than putting it into the hands of the Messrs. Birds, to whose high respectability testimony is borne by the plaintiff's counsel, and Messrs. Grissell, known to us all, and securing the co-operation of the patentees, and going down and consulting the architect of Northwood's, and then getting plans (sections of the girders) from Barrett. One thing dwelt upon was the omission of the tar-paper covering specified in the patent, but the Building Act prevents that being used, and something else had to be substituted, but it would not be a want of skill, for the moment not remembering the provisions of the Building Act. The plaintiff's counsel, after his admission as to the Building Act, would not contend this. It appears to me the defendant brought an earnest mind and careful attention to the work he had undertaken; and if he brought also competent skill, he ought not to be called upon to rectify any partial failure of the work. The new roof seems to me prematurely put on. Higgins seems to have acted rather prematurely, from a dislike to the new patent, instead of directing a few tiles or some other expedient to stop the leakage.

The jury brought in "Verdict for the plaintiff,—damages, 30*l.*" with this written statement:—"The jury are of opinion that the novelty of the experiment is a sufficient excuse for the leakage, but consider the defendant was bound to make the roof watertight."

The judge held this was substantively a verdict for the defendants (on seeing it next morning), and the parties have agreed to withdraw and stop proceedings.

We give of course a very much condensed, but at the same time what we believe to be a fair report of this trial.

ARCHITECTURAL COMPETITIONS.

A PHASE in the competition pestilence has just come under my notice; and as I have thus accidentally discovered the position of some of the parties who are hebdomadally dazzled by the temptations in the advertising columns of the *Builder*, I will, with your permission, make a trifling addition to the information of your general readers.

After engaging an assistant the other day, he inquired if it were agreeable to me that he should carry out works on his own account while in my office, as he had already, in conjunction with his brother, who is a clerk in the office of Messrs. ——, "got a church in a 5*l.* competition!" I am given to understand that such practice is very general "in town."

In the particular instance referred to, it appears that more than twenty sets of drawings were sent in; and the only remark I have to make is, if building committees find such liberal responses to their 5*l.* offers, ought we to be surprised that they take a reasonable advantage of such a state of the market?

AN ARCHITECT.

Ventnor.—The proposed erection of a new Independent chapel, says the *Hampshire Advertiser*, "seems destined to meet with nothing but difficulty, even before the corner stone is laid. The gentleman who was the successful contractor some few months ago having declined to sign his contract, the building was again put up for competition, and the result has created the greatest dissatisfaction amongst the builders who have tendered for it. The existence of a committee appeared to be a guarantee for fairness in the management of the contracts, but, unlike any other, it appears that in this committee *one* forms a quorum; and that one met, himself opened the tenders, and resolved that the work should be given to Mr. Spray; and, although a fortnight has elapsed since the tenders were so opened, the unsuccessful—who have been twice put to the expense and trouble of tendering—have not even been able to obtain the poor satisfaction of knowing the amounts of the several contracts."

Attention has been called to the manner in which the builders who tendered for the Independent chapel at Ventnor were treated by a committee of *one*. But strange as it was, the treatment of the competing architects was still more unfair.

Plans were invited for a building, the cost of which should not exceed 1,200*l.*; the accommo-

dation to be afforded, as well as the width of the building, being defined in the instructions. This was, in fact, regulating the plan to be adopted.

The design (in the Decorated style and highly ornamented) of a Liverpool architect was selected, and tenders for its erection obtained: these varied in amount from 1,830*l.* to 2,200*l.* except one from a builder at Liverpool at 1,480*l.* This gentleman was declared the successful contractor; but he subsequently refused to sign the contract. The architect was then instructed to reduce his ornamentation, and fresh tenders were obtained, which now vary from 1,400*l.* to 1,500*l.* or about 20 per cent. above the amount specified in the instructions to architects.

JAMES NEWMAN.

PROVINCIAL NEWS.

Fincham.—Messrs. Wilmshurst and Oliphant have fixed a stained glass window at Fincham Church, near Downham, Norfolk. It is a memorial window, placed at the west end of the church, by the children of the deceased Mr. George Aylmer, a lineal descendant of the first earl of that name, who came over with William the Conqueror. The window contains figures of the Four Evangelists under canopies, beneath which are angels bearing scrolls, and the arms of the deceased. The tracery contains emblems. Style, Perpendicular.

Chatham.—The chief stone of the new church of St. Paul, in this parish, was laid on Wednesday in last week. Its style is Anglo-Norman of the twelfth century. The plan is in the form of a Latin cross, with north and south porch and western entrance. The tower occupies the south-east angle at the intersection of the nave and transept. The accommodation afforded is for 1,000 persons. Galleries occupy the west end of the church and the transepts. The estimated cost, including the enclosing walls, warming, lighting, and incidental charges, will be 4,000*l.* of which 1,700*l.* are wanted to complete the building. The Rev. W. Conway and Miss Conway are the principal contributors to the building fund. The architect is Mr. A. D. Gough, of London: the contractors for the builders are Messrs. Dove, Brothers, of Islington. Unless delayed from want of funds, the edifice will be ready for consecration in September next.

Dartford.—The contract for the pipe-laying, &c. for the sewage works here under Mr. Ranger for the Local Board of Health, has been let to Mr. Richard Barnes, of Westminster, contractor.

Sherborne.—The church having been restored at a cost of several thousand pounds, still stands in need of an organ. A large number of ladies in the county have united to help forward this object by holding a county bazaar at the beginning of August next. 1,000*l.* is the sum required. 200*l.* have already been raised in Sherborne by subscription.

Cirencester.—The ancient town of Cirencester is fast disappearing, under modern improvements; and although no doubt the alterations will contribute much to the comfort and convenience of the occupants of the modern houses, the admirers of the picturesque appearance which the many gable ends and quaint protuberances in the old style of architecture give to towns of the date of Cirencester, cannot but regret the rapid disappearance of these relics of bygone days: at the present time, it appears, there are four of these structures either in course of demolition or doomed at an early date to suffer.

Cardiff.—The Marchioness of Bute lately inspected the much-decayed monuments in the Herbert aisle of St. John's Church, accompanied by Mr. J. Evan Thomas, of London, who has received instructions to proceed with their restoration.

Hirwain.—Upwards of 500*l.* have been subscribed towards the erection of a new church here, exclusive of what may be expected from the London societies.

Cheltenham.—Messrs. Tomlinson, Harpur, and Harpur, contractors, we hear have obtained the contract for executing the sewerage and drainage improvements at Cheltenham, their tender being 9,686*l.*

Devizes.—At a meeting of the committee of the Wiltshire Archæological and Natural History Society, held on the 8th, at the Town-hall, it was resolved "That the whole of the collection of Wiltshire antiquities being now received from Mr. Britton, the secretary be requested to make known to him the great gratification the committee have experienced in inspecting so numerous and valuable a series, and to express their best thanks for the additional works, &c. which Mr. Britton has been so good as to present to the society."

Birmingham.—On Monday in last week the foundation-stone of a new Hebrew synagogue was laid. The site chosen is Wrottesley-street, a new street leading from Smallbrook-street. The building is expected to be completed in September: it will be of the Ionic order, and, including robing and ante-rooms, will cost about 1,700*l.*

Aldridge.—The parish church of St. Mary, which has been restored and enlarged, was re-opened on Thursday, 2nd instant. The alterations have been made from plans by Mr. Salvin, and have been completed under the superintendence of Mr. Isaac Highway, of Walsall, builder. The building has now north and south aisles, nave, chancel, and south porch. The former chancel is now thrown into the nave, and the rector, the Rev. J. F. Smith, has erected a chancel at his own cost. The north aisle, which is new, has a roof of stained deal, somewhat of the waggon-headed shape. The nave has a plain timber roof, in which portions of the original roof have been preserved. The south aisle, erected in 1842, still retains its flat roof. The chancel has an enriched roof of open timber, and the north aisle has a painted window in the east end, the only one in the building. Throughout the church the windows are of two lights each, with the exception of the east chancel window, which has three lights, and its head is filled in with tracery. The body of the church is paved with red and blue tiles, and the chancel with encaustic tiles. There are four illuminated scrolls in different parts of the building. The seats are all low-backed and open, and will afford accommodation for about 450 persons.

Coventry.—At a meeting of the committee of the West Orchard New School and Class rooms, the several tenders for the erection of the buildings were opened and examined, and that of Mr. J. Marriott accepted, being the lowest. The works will be commenced very shortly. The present subscriptions amount to about 700*l.*; but when the building is complete, including gas and other fittings, not specified in the present contract, the probable cost, according to the *Coventry Herald*, may be estimated at 1,000*l.*——A house placed over the badly-arched Radford Brook is reported to be in so bad a state, that the tenant, a barber, has more than once disappeared suddenly through the floor, in presence of his astonished customers. The fireplace and chimney of a room adjoining his shop the other day tumbled out, and fell foul of four tables and a sofa, smashing these and other articles to pieces. Like the barber whom we noted at Seven Dials shaving his customers by candle-light in the midst of the ruins of his domicile, which had just before come down about his ears, the Coventry barber still calmly pursues his useful calling, its only interruption being his occasional dip into the filthy brook, when he much more needs a good stiff lather, we suspect, than his customers do. Only last week his wife and apprentice accompanied him down below! It is astonishing how tenants are found to inhabit such houses, or, indeed, how they are allowed to be inhabited. They ought at once to be condemned and pulled down, or efficiently repaired.

Eckington.—A stained-glass window has just been presented to Eckington Church, by Mr. W. Crooks, of Sheffield, artist, as a mark of gratitude for spiritual good derived from the church and schools of this his native parish. The design is a full-length figure of St. Peter (to whom, with St. Paul, the church is dedicated), the right hand raised in the act of benediction, while the left supports a Bible, and the emblematic keys. Under the figure is a scroll bearing the inscription, "To the glory of God. Amen;" the name of the donor being modestly recorded below. The whole is surmounted by a canopy of temple-work, and enclosed in a border.

Chesterfield.—Measures are in progress for the erection of a market-house, with such conveniences attached as will enable public bodies to hold their meetings, and reading and news societies find accommodation.

South Shields.—The construction of docks in Jarrow Slake, according to the local *Gazette*, is about to be proceeded with by the York, Newcastle, and Berwick Railway Company.

ARCHITECTURAL PUBLICATION SOCIETY.

The annual meeting of the subscribers was held May 26th, when a report from the committee was read, showing satisfactory progress.

"This period of the existence of the society is rendered the more marked by the completion of a series, consisting of the issues of the four first years, forming a handsome volume, novel in its matter, original in its contributions, and comprising a very considerable mass of useful information.

"At the last annual meeting a resolution was passed, requesting the committee to commence the Cyclopædia of Architecture, as a Dictionary of Explanation and Reference. As soon, therefore, as the labours connected with the completion of the publications of the previous year had been finished, arrangements were made for the commencement of this important undertaking. Since then a large quantity of material in manuscript has been carefully read and its merits investigated at successive meetings. This has afterwards been put into type, with the suggested alterations and corrections, and again submitted in proofs to the personal revision of the committee, members, and friends. The result, shown in some of the first pages of the Dictionary, has lately been forwarded to the subscribers as a specimen, and it is not to be supposed to form a complete part; the committee will listen with much interest to any remarks or suggestions, which the inspection of these few sheets may elicit from the members."

In conclusion, the members of the profession were earnestly "entreated not to consider this as a mere commercial or speculative undertaking. The society, consisting of subscribers, are urged by no personal consideration, but by the desire of promoting a professional object by a kind of *Architects' Union*; the committee, therefore, claim the cordial co-operation of the members,—not a mere passing support, or one limited to the contribution. They confidently expect an individual interest in the success of the "*Brotherhood*," by which they may be possessed of abundant materials to enlarge the sphere of experience and of instruction, to multiply examples for reference and suggestion, to excite a spirit of observation, and to make all feel, that each may be affected by the success or failure of such an enterprise."

The statement of the receipts, expenditure, and liabilities, for the year ending 30th April, 1853, was as follows:—

RECEIPTS.

1852-3	£	s.	d.
By balance from year ending 30th April, 1852...	48	13	0
— Five subscriptions from new members for first year's works	5	5	0
— Five ditto for second year's works.....	5	5	0
— Four ditto for third year's works	4	4	0
— Six ditto for fourth year's works	6	6	0
— 283 subscriptions for the fifth year's works, ending 30th April, 1853	297	3	0
	£364	16	0

EXPENDITURE.

1852-3	£	s.	d.
By cash paid for Advertisements.....	12	6	2
——— ——— General disbursements, &c....	10	8	9
——— ——— Delivery of Part I.	4	15	0
——— ——— Woodcuts	3	18	0
——— ——— Printing Part I. &c.	26	17	6
——— ——— Articles for Dictionary	12	12	0
——— ——— Extra copies of illustrations for the year 1851-52.....	11	9	2
	£82	6	7

LIABILITIES (about).

	£	s.	d.			
Printing Part I. Dictionary of Architecture, &c.....	23	18	0			
Binding Part I.....	4	10	0			
Articles for ditto	20	0	0			
Woodcuts.....	2	10	0			
Expenses of annual meeting	5	0	0			
				55	18	0
Total.....				138	4	7
Probable balance for further publications				226	11	5
				£364	16	0

GAS LIGHTING.

THE gas company at Carshalton, formed within the last year, have recently announced a dividend of five per cent.——The Swindon Gas Company are extending their works. The proprietor of the refreshment-rooms, who at present pays about 200*l.* a year to the company for gas, is erecting private works for the supply of his own establishment, on Bowers's patent, which a local correspondent, "Onward," assures us will give him a brilliant illuminating gas at less than 2*s.* a thousand cubic feet.——The proprietors of the Tewkesbury gas-works, who appear to have some misunderstanding with the consumers as to the price of their gas, have recently come to a formal resolution, in which they say, "that the price of any article cannot be called excessive, unless such price affords more than a fair profit on the capital invested in its production. That every Gas Bill passed by Parliament specifies ten per cent. as the fair profit of such companies, and as the dividends of this company have not averaged seven per cent. the charge of extortion as applied to it is unfounded." Now this is a most fallacious and inconsequent proposition. The right conclusion from such premises, as we have over and over again proved from the Parliamentary returns by the gas companies themselves, as well as from their every-day history, ought in nearly every case to be exactly the contrary. It is precisely in such cases, where the price has been extortionate, that companies have overreached their own interest, and have failed to secure fair profits, and the rule of their own returns has ever been that as the price fell so the profits rose, and that too in face of the most obstinate protestations and resistance of the companies compelled to lower their prices, and so to raise their dividends. We had thought that this rule had been made as clear in respect to the sale of gas, as it has been in many revenue cases, where large reductions of taxation on articles of general or universal consumption (such as gas is, or rather ought to be) have only increased the revenue instead of diminishing it, as was long dreaded. ——A gas and coke company is being organized under favourable auspices at Abergele, in North Wales, some of the gentry resident in the vicinity having largely subscribed to the capital of the company, for the purpose mainly of having their mansions lit up with gas. Gas-works have thus been rendered possible, and realized, in even very small villages in Scotland, and there is probably scarcely a village throughout the whole of this country in which, by like means, gas might not be provided at a moderate cost for the whole of each local community.——The inveterate attempts on various pretences to prevent the laying of the new gas company's pipes at Sheffield have been foiled latterly in the Court of Queen's Bench, where a verdict has just been given in favour of the new company, who were indicted for a nuisance in breaking up the streets, &c. The company, we believe, have already had gas produced at their works, and passed through their pipes.——The Sutton-in-Ashfield Gaslight and Coke Company, at their first general meeting, lately announced a dividend of 5 per cent. and a reduction of price from 7*s.* to 6*s.*——The Harborough Gas Company have resolved to reduce the price of their gas from 7*s.* to 6*s.* per 1,000. ——A Gas Consumer's Company is being formed at Burnley. It has already been registered in accordance with 7 & 8 Vict. c. 110, and will be incorporated under the provisions of the Joint Stock Companies' Act. By this arrangement it is anticipated that the company will be established without the expense of a Parliamentary contest with the Burnley Gas Company, which was established by Act of Parliament. At a recent public meeting of the principal gas consumers and others, a deputation appointed to visit Sheffield stated, among other matters, that gas was there charged 3*s.* per 1,000 feet to all consumers, whether great or small; and that, according to a calculation made by Mr. Flintorff, formerly secretary to the London Great Central Gas Consumers' Company, and now secretary to the Sheffield Company, efficient works might be contracted for Burnley for 7,000*l.* The meeting resolved to raise a capital of 20,000*l.*; and before the conclusion of the proceedings, more than half the shares (10,000*l.*) were taken.——The Barton Gas Company have recently declared a dividend of 5 per cent. carried a surplus to account, and announced a reduction in the price of their gas from 8*s.* 4*d.* to 5*s.* and a resolution to fix the necessary fittings at the cost price of apparatus for the anticipated new consumers till 1st September next.——Mr. Rutter, in the *Gas Journal*, gives the following information as to the use of gas in cottages at Todmorden, in Lancashire:—The Gas Company was established in 1848-9. There are now 870 meters at work on the mains, and of that number 646 are in cottages, the rents of which vary from 2*l.* 10*s.* to 6*l.* per annum. The fittings are provided by the landlords, or tenants, of the houses; the company laying mains and services. The rent-charge for the use of the meters is 10 per cent. on their cost. The price charged for gas is 6*s.* per 1,000, and the average rate of consumption in the houses of the working classes is about 2,000 cubic feet per annum. The accounts of the company exhibit results which are very satisfactory. Perhaps, adds Mr. Rutter, there is no other instance in which so much has been done, in so short a period, to enable the industrious classes to feel the benefits of gas-light in their dwellings. Is it not an example worthy of imitation?



LONDON AND WESTMINSTER BANK, HOLBORN.——GROUND PLAN.

LONDON AND WESTMINSTER BANK, HOLBORN.

THIS edifice, now in progress of erection, has been undertaken by the directors to accommodate the increasing business of the district, and to meet, in a sanitary point of view, the requirements of the numerous officials whose daily labour conducts such business. We are glad to see a movement in this direction among our wealthy bankers and merchants; and even if many of them think that the house of business is not a place for the display of art, we venture to suggest, that *all* ought to study the health and comfort of those whom they employ in so confined and sedentary an occupation, and to give them the benefit of abundant space, lofty offices, light, warmth, and ventilation.

The structure before us will be faced entirely with Portland stone, and be of a simple, substantial character: doubtless more relief and play might have been given, but neither the purpose of the building nor its aspect must be forgotten; the latter is due north, and where light and shadow did not exist, it was thought best to obtain the effect by mass: for the like reasons, the window-openings on the ground-story have been made perhaps wider than the superincumbent weight may justify; but in most cases that architect is right who first studies purpose and utility, and secondly, effect. With regard to the plans, the basement is almost exclusively devoted to strong-rooms, with a commodious boarded room, in which lawyers and others may examine their deed-boxes, &c.; the ground-floor will be 17 feet in height, and extend about 70 feet in depth; and the upper stories will contain the board-room, with manager's residence, &c.

Mr. Myers is the contractor, and the cost will be about 10,000*l.*

We have already given the particulars of the competition, which resulted in the appointment of Mr. Henry Baker as the architect.

REFERENCES.

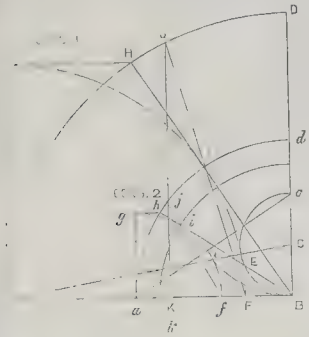
A. Public entrance.
B. Messenger.
C. Waiting.
D. Manager.
E. Private.
F. Manager's lavatory.
G G. Water-closets.
H. Clerks' lavatory.
I I. Areas.
K. Clerks' room, hats, cloaks, &c.
L L. Lifts from basement.
M M. Steps down.
N. Passage.
O. Private entrance.
P P. Stairs up to gallery.
Q Q. Closets.
R R. Strong-rooms.



LONDON AND WESTMINSTER BANK, HOLBORN BRANCH.——Mr. Henry Baker, Architect.

EXERCISE IN MECHANICS.

To find the square root of a number mechanically, &c.—Draw the right-angled triangle ABC.



Draw the quadrant ABD. With radius CB describe the semi-circle BEC. Draw the quadrant AFEG. Draw GH parallel to AB, and join HB. Make HI = GH. Draw the quadrant $aBd1$, and join ac.

If the numerical value of BC = Unity, that of AB + AC = n, $\frac{aB + ac}{2} = n\frac{1}{2}$, which was to be done.

With radius cB describe the arc Be. Draw the quadrant $afeg$. Draw gh parallel to aB. Join hB, and make $hi = gh$.

Draw fij to meet the arc ad in j, and draw jk parallel to BD. Draw FIJ to meet the arc AD in J, and draw JK parallel to BD.

I wish to be informed whether or not the two constructions make BK and Bk equal to each other; for if they do, the numerical value of BK is the hyperbolic logarithm of n, and that of Bk is twice the hyp. log. of $n\frac{1}{2}$, values to be found directly from the tables. J. P. W.

Notices of Books.

The Poultry Book; being the results of personal Observations and Practice of the best Breeders. By the Rev. W. WINGFIELD, Hon. Sec. of the Cornwall Poultry Society; and Mr. G. W. JOHNSON, Hon. Sec. of the Winchester Society for the Improvement of Poultry. London: Orr and Co. 1853. Parts I. II. III.

THE poultry yard and its appurtenances are much more frequently laid out from the designs of the amateur *architect* than from those of the regular profession; nevertheless, their judicious and fitting arrangement, even in a very humble establishment, ought not to be beneath the attention of the skilled and experienced architect.

We shall say little here of Shanghaes or Cochin Chinas, Dorkings or Spanish; but we think it may be of some little utility to the profession if we pick out a few of the rules educed by practical experience in regard to the structure and arrangements of poultry houses and yards.

"It is true," say the authors of the work under notice, "that poultry may be profitably kept almost anywhere. We have heard of first-rate specimens of Shanghaes being reared in an attic, and we have purchased very fine ones that never knew there was any world beyond a small back-yard in the street of a country town. These, however, are extreme cases; and such success could only be achieved by constant attention and great judgment in supplying artificially the requirements of the birds which the place of confinement did not afford.

The best of all soils, on which to establish a poultry-yard, is gravel or sand, resting on chalk or a substratum of gravel. If the soil is clayey, or from other causes retentive of wet, the whole should be well drained, and a good breadth of it raised artificially by carting on to it a foot depth of chalk or gravel, to be covered over with a few inches deep of sand. This is more than desirable, for we consider it almost essential to success,—stagnant wet in the soil being more inducive of cramp and some other diseases than any other circumstance.

The best of all aspects is south or south-east, and the side of a gently rising hill, if sheltered from the north-east and south-west by plantations, leaves little to be desired on this point. Mr. Sturgeon's yards are so situated, and partly thus sheltered. If the birds can have access to those plantations and to a grass field, and the soil is such as we have described, then, so far as the ground and situation are concerned, nothing to be desired remains. The houses and yards must be constructed according to the purposes of the proprietor. He who keeps the Shanghae, a cock and three or four hens, merely for home supply, will require a very simple arrangement; but the proprietor who breeds for sale and profit must have a more elaborate arrangement.

Whichever plan may be requisite, we may observe that the cheapest and warmest materials of which to construct the houses are weather-boarding, lined with straw, with a slated roof similarly lined. The straw is smoothed as for thatching, placed between the upright posts to which the weather-boarding is nailed, and between the rafters under the slates, and retained in its proper position by laths nailed over it and to the same posts and rafters. The neatness is increased by a layer of reeds in front of the straw. We have houses constructed in this way, and find them unexceptionable. They have brick foundations, and have raised floors of chalk rammed hard and covered over with sand.

Floor.—Bricks we regard as the worst of all materials for the floor; they retain moisture, whether atmospheric or arising from insufficient drainage; and thus the temperature is kept low when warmth is most essential, and disease too often follows, especially rheumatic attacks of the feet and legs. In one only of our own houses have we retained a brick bottom, and in that one house only have all such attacks occurred.

Lighting.—Whoever has the intention of building a fowl-house, or already possesses one without the means of admitting sufficient light, should either introduce a pane or two of thick glass in the sides, or substitute a few glass tiles or slates as a skylight. In wet weather the birds will be the more induced to take shelter within, and the master's inspection of the state of their domicile is the more readily performed.

Ventilation.—When the littering system is used for Shanghaes, we are better enabled to ventilate their abode thoroughly, without exposing them to any risk of passing their nights on perches exposed to a constant current of cold air. A rough application of the Venetian shutter, fitted to the highest part of the interior, excludes weather, and secures the egress of the heated air within, while carpenters are seldom so accurate in the door and fittings of such edifices, as not to leave sufficient apertures for admitting what is required to take its place.

Neglect of ventilation is a sure forerunner of disease, and if every poultry-keeper was compelled himself to unlock the doors of their house every morning for a week, there would be fewer complaints on this head; but the unfortunate cocks and hens are usually either condemned to shiver in an open out-house, or are else imprisoned in an atmosphere like the hold of a slaver. However easy the remedy, and evident its necessity, not one fowl-house in twelve, even of those of most pretension, are properly arranged in this respect.

Yard.—For inclosing this, we can testify that nothing is superior to galvanized iron wire. It has been objected that the galvanizing process renders it brittle; but experience enables us to say, confidently, that the objection is groundless. We use it stretched to oak posts eight feet apart, and to which it is fastened by means of small staples of the same galvanized metal. Care must be taken not to have a bar or rail along the top of the wire-work, although when fastened to such a rail it has a more finished appearance.

In the construction of cottages, it would be very desirable, for the purpose of promoting the practice of so useful and profitable a pursuit as that of the breeding of poultry, whether "as egg or as meat-producing machines" as they have been somewhat quaintly and technically defined, were the plans always to include the more substantial foundations at least of a small poultry-house. This would, in many instances, induce the tenants to turn their attention to the subject, and might in not a few instances assist materially in the long run in insuring to the landlord himself a more regular payment of his rent from the profits or the savings thus initiated.

A word with scientific breeders of poultry, or indeed of any sort of animals. Were they to keep consciously in mind the fact that the very germs of habits or induced practices and movements, and even of conceptions, impressed on the minds of such creatures by educative modes of management, are as assuredly transmitted to their offspring, as are marked peculiarities of form or colour,—an immense stimulus would be given to the cultivation and improvement of species.

May we also hint, before concluding, that we hope to see the gigantic crowned pigeon of China taking a westward flight after its no less gigantic *confrère*, the bluff and picturesque Cochin Chinese fowl. These pigeons are equal to four or five of our western species, as may be seen in the British Museum; and indeed (alive) in the Zoological Gardens, Regent's-park, where there are two or three already introduced, in fact, as we happened lately to observe.

Miscellanea.

A ROYAL ANTIQUARY.—At a meeting of the Society of Northern Antiquaries at Copenhagen, March 21st, King Frederick VII. made some extended remarks upon the manner of constructing the so-called *Giants' Cabins* (*jettestuer*), important remains of antiquity found in many parts of the north. They are often covered or overlaid with gigantic flat stones, whose enormous size and weight seem to presuppose the use of machinery in getting them to their places. His majesty had been engaged in investigating these interesting remains of our forefathers' toil, and explained with clearness his hypothesis by which he accounted for their construction by manual labour alone. His majesty afterwards exhibited to the society several remarkable antiquities and archæological curiosities from the ages of stone and bronze, and belonging to his own private collection. The secretary, Professor Rafu, presented a cast of a Runic stone, found in August, in St. Paul's churchyard, in the heart of London, and transmitted to the society by Mr. J. Knowles, architect, of London. The inscription was in the old Northern tongue, as follows: *Konáll lèt leggja stin thensi auk Tuki*, i.e. Konall and Tuki let lay (placed) this stone. The name *Konall* (Connell) is of Irish origin, and frequently occurs in the old Icelandic writings: it came to Iceland at the period of its colonization with the emigrants from Ireland. The name *Tuki* occurs often in early Danish documents and on Danish Runic stones. The distinguished *Palna-toke* (a celebrated sea-rover and captain, whose history is contained in the *Jomsvikingasaga*, one of the most entertaining and incident-rich of northern histories.—Trans.) inherited large earldoms in Britain. This Toki may have been one of his descendants, especially as such were known to exist during the reign of Canute the Great.

REPAVEMENT OF GRACECHURCH-STREET.—At a meeting of the City Sewers Commission last week, on that portion of the minutes being read which had reference to the report, in which Mr. Hayward had stated, that if Gracechurch-street was newly paved with wood the cost would be 892*l.* and if with granite 1,136*l.* but that in the end the larger sum would prove the cheapest; and that he would recommend that the inhabitants should, if they wished to have the wood pavement for their own convenience, be called upon to contribute a considerable sum,—Mr. Hopgood stated that he had received a letter from several inhabitants of Gracechurch-street, who had been informed that London Bridge was paved with stone in 1842, and repaved in 1851; term of wear, nine years; and that the Poultry was paved with stone in 1846, the whole being repaved in 1852: term of wear, six years; that, on the other hand, Cornhill was paved with wood in 1842, and relaid with the same material three times, at an expense of 577*l.* 2*s.* 6*d.* which sum included all repairs required till May, 1855; term of wear, without repairing, thirteen years, or about 44*l.* per annum.—The chairman said he thought it was scarcely fair for Mr. Hopgood to go into the particulars then, as the surveyor was necessarily absent from the court.—Mr. Hopgood replied, that all he desired was that the matter might be referred to a committee before the work was decided upon, as the matter was one of much importance to the applicants.

THE LONDON (WATFORD) SPRING WATER COMPANY.—At a meeting of shareholders, this company has been dissolved, in consequence of the rejection of their Bill in Parliament. The shareholders, however, resolved to appoint a committee to take measures from time to time to forward the attainment of their object. In the course of a desultory discussion it was stated by several gentlemen present that the measure was defeated entirely by the combination of the old water companies; and the inconsistency of a free-trade government in protecting an injurious monopoly was dwelt upon with earnestness by some of the speakers, but palliated and explained by the chairman, Sir Robert Price, who, however, maintained that the scheme supported by the shareholders, was entitled to special consideration apart altogether from the general question of monopoly or unrestricted competition.

THE DRAINAGE OF SYDENHAM.—A deputation of inhabitants waited last week on the Commissioners of Sewers, at Greek-street, to complain of the state of the sewers and the want of drainage at Sydenham. The work that had been done to the sewers was worse than useless, for it had been done in such a scamping manner: and for 30 yards the barrel drain, and in some places the pipe drains, had fallen in, and the black sewage was going down the roads again as it did before. Besides this, the inhabitants were prevented from draining into the sewers, although they were called upon to pay for them. The chairman denied the allegations of the memorial, but it was represented that the late chairman had remarked that he was surprised that Sydenham had not sent up complaints before; that the state of the district had been more than once specially referred to in the certificates of the registrar of deaths, but those fatal results had never been attended to, and, from some cause, these evils continued up to the present time. Col. Dawson said the commissioners were under an engagement with the Kent Waterworks Company, who paid 5,000*l.* towards a main line of sewer, not to pass any sewage into the Poole River, and thence into the Ravensbourne, as that formed the source of supply of water for the whole neighbourhood. They were pressed to do certain works at Sydenham that he would admit were worse than useless, as there was no outfall for the discharge but into the open ditches. A large sum of money was still required to complete the main drainage, and not one farthing would be spent in the drainage of Sydenham until the main lines of sewers were completed. The best course for them would be to join the commissioners in their endeavours to obtain additional powers from the Legislature to raise a principal, and then to apply the rates towards the payment of the sum borrowed, with a gradual extinction in a period of twenty or thirty years. Meantime he saw no alternative but to form cesspools.

THE LINCOLN ARCHITECTURAL SOCIETY'S MEETING.—The following papers were read at the meeting noticed in our last number, viz.—"On the Objects of the Society, and on some of the principal Architectural Antiquities of the County of Lincoln," by the Rev. F. P. Lowe, one of the honorary secretaries; "On Cranmer's Birthplace," by the Rev. F. C. Massingberd, prebendary of Lincoln; "On the Consecration of Churches," by the Rev. J. F. Dymock; minor canon of Southwell; "On the Domus Inclusa, or habitable Chamber frequently found in old Churches," by Mr. M. H. Bloxam, who regarded them as devoted to recluses; "On the Character of the Architecture of Notts, and some other Subjects connected therewith," by Mr. G. G. Place. Addresses were also delivered by Sir C. Anderson and by the chairman, Col. Wildman, from one by the latter of whom we quoted a passage in our former notice. The members afterwards made an archæological excursion to various churches in the vicinity of Nottingham.

THE METAL TRADES.—Another reduction of 20s. in the price of iron at the next quarterly meetings is now confidently spoken of. The trade is in a very flat state, as was to be expected after its late feverish fit. It is now stated that the quantity of pig iron actually made and delivered during the speculative mania was very heavy, and although it is said to be at the control of persons who have made advances upon it and can afford to wait for a time, still there is a reasonable fear that circumstances may occur to cause this stock to be thrown on the market at no very distant period. This induces holders of pig iron to evince some anxiety to sell at reduced prices to safe hands. The preliminary quarterly meeting will be held at Stewpony, on 30th inst. Should a further reduction then take place the trade will be placed in a very awkward position. At present the rate of wages corresponds with the highest prices, no attempt was made to reduce the men last quarter-day, when 20s. per ton were taken off. Another reduction, however, will render it impossible, the *Wolverhampton Chronicle* remarks, to continue paying the present rate of wages. Owing to the falling off of orders in the trade coal is more plentiful, and may be obtained on easier terms, although the price has also been higher than before the late rise. ——The price of copper is becoming more moderate again. In course of week before last a reduction of 1*d.* a pound, or 9*l.* 10*s.* a ton, took place, making tile tough ingot 108*l.* 10*s.* and selected 111*l.* 10*s.*; and further reductions are looked for.——The cut-nail business has been in a very depressed state.

NEW CHURCH FOR ST. MARYLEBONE.—We hear that active measures are in progress for the erection of a church in the southern part of the rectory district of Marylebone. A site in Calmell-buildings, in the immediate vicinity of Portman-square, has been granted by Lord Portman for 4,000*l.* being less than one-half of its estimated value. A preliminary meeting of some of the influential residents has been held, and between 1,000*l.* and 2,000*l.* have been already contributed.

THE NATIONAL POOR-LAW ASSOCIATION.—At a meeting of the executive committee of this association, held at Manchester on 6th June, Mr. Samuel Ogden in the chair, resolutions to the following effect were adopted:—1. That the object of the Association is to promote the useful employment and industrial instruction of the adult and juvenile destitute; who generally of late years in England and Ireland have been either kept totally idle or put to degrading and unprofitable kinds of work,—treatment unjust and demoralising even to convicted felons.—2. That the practical arrangements pointed out by the Association are now in operation in Chorlton, Thanet, Guilt Cross, Bridgenorth, Sheffield, Portland, Newton Abbot, Bedford, &c.; in numerous Irish unions; in almost all the American prisons; and in nearly every country in Europe.—3. That the self-supporting principle being embodied in the existing law of 43 of Eliz. sanctioned by Lord Bacon, Lord Hale, Locke, Bentham, &c.; by Poor-law Commissioners and Government Inspectors of schools and prisons; and being demonstrable from the recognised data of political economy, it is to be regretted that its application to the destitute is still resisted.—4. That in view of the enormous cost of the poor law system—averaging from five to eight millions per annum—and of its still more disastrous indirect results, in thriftlessness, intemperance, hereditary pauperism, and crime, entailed by neglect of the young, and by the enforced idleness and degradation of adults,—the committee earnestly invite co-operation in the promotion of a more humane and rational poor-law administration. We sincerely hope they will not do so in vain. Future generations will scarcely credit the absurdity, extravagance, folly, and mischiefs of the present system.

PAYMENT OF ARCHITECTS FOR PLANS ON APPROVAL.—In a case, Moffatt *v.* Dickson, in the Court of Common Pleas, on 2nd inst. the Court decided that an architect was not entitled to a verdict for the cost of plans, &c. prepared on a proviso that a lump sum (470*l.*) would be paid for them, and for examining the site (of a lunatic asylum for Northumberland), &c. if the plans were approved of or accepted. The Court were of opinion that the architect could not argue that they ought to have been approved of; and that his bargain implied that he was willing to risk their not being approved of.

MR. PULSKY'S LECTURES ON ANTIQUITIES.—Mr. Francis Pulsky is delivering a course of lectures on antiquities at Willis's Rooms, in connection with the Fejérváry collection of ancient works now at the Archæological Institute. Of this collection, formed by the late Gabriel Fejérváry, of Hungary, whose aim was to illustrate the history of art, and who devoted thirty years of his life to its selection, we will speak next week. It consists of Egyptian antiquities, Etruscan works of art, chiefly in bronze; Egyptian, Assyrian, Babylonian, Persian, Etruscan, Greek, and Roman gems; Greek bronzes, Raphael ware, terra cottas, Nielli, mediæval monuments, &c.

ROMAN REMAINS NEAR BATH.—Workmen employed in preparing foundations for some new houses about to be erected in a garden just below the church, at Box, recently discovered a portion of a Roman pavement. It was found, it is said, to extend about 40 feet in length, forming a right angle in its course. A small detached portion was also discovered. The greater part displays a wavy pattern, and the detached part a diamond pattern. The pavement is not in good condition.

TELEGRAPHIC PROGRESS.—The longest extension of the submarine telegraph yet executed has taken place; for a line has just been successfully laid down, a distance of 115 miles, between a point on the Suffolk coast and the coast of Holland; and there is now a continuous line from England across Jutland and the Belts to Copenhagen.

SILICIZATION OF CALCAREOUS SUBSTANCES.—Mr. Fontaine Moreau, of South-street, Finsbury, has patented a new chemical combination for the above purpose, which consists in the application of the soluble silicate of potash to hardening and preserving calcareous stones, by which buildings constructed of such materials acquire, it is said, hardness, and will admit the most friable stones receiving a fine polish.

ARCHITECTURAL COMPETITION AT KIDDERMINSTER.—Of seven sets of designs submitted in competition for the proposed public buildings and corn exchange, the plans by Messrs. Bidlake and Lovatt, of Wolverhampton, have been selected by the Directors. The estimated outlay is between 5,000*l.* and 6,000*l.*

GRAVING DOCK, DUBLIN.—One of the firms who tendered for the construction of this dock, Messrs. Arthur Williams and Sons, complains that Mr. Dargan's tender, amounting to 60,154*l.* was accepted, although Messrs. Moore's tender was only 46,000*l.* and their own about 50,000*l.* The facts, if according to their statement, seem curious.

CITY DISTRICT SURVEYORS.—At a court of aldermen, held on Tuesday last, Mr. John Young was elected to the office of district-surveyor of the eastern district of the city of London, vacant by the resignation of Mr. Edmund Woodthorpe, who has taken another district.

SELF-ACTING LUBRICATOR.—A patent, taken out by Mr. Cossus, consists of a metallic box for a supply of oil, which is elevated by the rotary motion of a wheel dipping into it. The periphery of this wheel comes just in contact with a bent metallic groove, acting as a spoon, down which the oil trickles to the bearings through the orifice of a tube passing through the bottom of the box. In this tube is a regulating screw, by which the quantity of oil can be increased or diminished. By a differential pulley on the wheel shaft the wheel can also be made to go faster or slower, as may be desired.

TO CORRESPONDENTS.

"W. H." "J. L." "D. B." "W. H. R." "J. D." "G. M." "H. C." "J. Y." "W. B." (shall appear), "C. K. B." "J. W." "C. and G." "W. A." "S. T. P." "W. B. C." "Martha," "A. M." (charge is too serious to be lightly treated), "A. W. H." "F. T." "T. M." (the regulations differ according to locality), "W. G. C." "J. D. P." "W. T." (send the solution), "Archdeacon F." "A Londoner" (is in error), "J. G. & S." "C. T." "Dr. H." "D. and Son" (thanks), "A Novice" no., "T. H." (three), "T. B." "L. B." (if the book be sent it will be reviewed), "A. M." "Mr. P." "Digamma," "W. C." "H. Y. B." "S. T. T." "A Painter."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

TENDERS

For building new Independent Chapel, Ventnor, Isle of Wight.

Myers	1,760	0	0
Newnham	1,660	0	0
Cumming	1,655	0	0
Bull	1,545	15	0
Spary	1,436	0	0

ADVERTISEMENTS.

MONEY on LOAN, at 3*l.* per Cent, per Annum.—ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN, that the Trustees of this Charity are enabled to lend out the Trust Moneys to poor occupiers or traders resident within the City and Liberty of Westminster, that is to say, within the parishes of St. Margaret and St. John the Evangelist, St. Anne, Soho, St. Clement Danes, St. George, Hanover-square, St. James, St. Martin-in-the-Fields, St. Mary-le-Strand, and St. Paul, Covent Garden. The amount of each loan is not to exceed 100*l.* is to bear interest after the rate of 3*l.* per cent. per annum, and is to be secured by the bond of the borrower, with two sureties. Printed Forms of Application, and all necessary information, may be obtained by applying personally, between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, No. 14, Great Queen-street, St. James's Park.

By order,
EDWARD S. STEPHENSON,
Clerk and Solicitor to the Trustees.

NOTE.—The Trustees meet on the second Wednesday in every month, to consider such applications for loans as have been sent in one clear week at the least before the first day of the month.—The sureties must be unexceptionable.

MONEY.—800*l.* and 400*l.* to be LENT on freehold, copyhold, or good leasehold security, at a moderate interest. A term of years if desired. Application to be made to CHAS. BOYLE, Esq. 9, New square, Lincoln's-inn.

MONEY LENT ON PERSONAL SECURITY.—From 5*l.* to 200*l.*—For two years, one year or six months' repayable by weekly, monthly, or quarterly instalments.—Finsbury Loan Office, 144, St. John-street-road, Clerkenwell. Established 1833. Registered pursuant to sec. 53, 7 & 8 Vict. cap. 110.—Open daily from Nine till SIX.—No delay.

TO BUILDING SOCIETIES AND CAPITALISTS.

MONEY.—15,000*l.* to 20,000*l.* required by MORTGAGE, on an eligible and expensively laid out Building Estate; any party advancing might effect other arrangements, exclusive of interest, which would prove satisfactory. Principals or their solicitors only treated with.—Apply by letter, O. P. Messrs. Parkins and Gotto's, British Stationery Warehouse, 25, Oxford street.

SMALL INVESTMENTS WANTED, immediately, for sums of 300*l.* and upwards. The persons selling their Properties may retain power to re-purchase after a fixed period, when so desired.—Applications to be made to Mr. ALFRED COX, Surveyor and Land Agent, 68, New Bond-street.

SECRETARY and MANAGER, &c.—Any capitalist advancing about 18,000*l.* by mortgage, to be charged on land of ample value, might, in addition to interest, appoint a gentleman as secretary or manager at an agreed salary. No agent will be treated with.—Letters directed C. D. care of Mr. Corbie, Silversmith, &c 31, Bath-place, New-road.

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company.
No 16 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Fiare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices:—

Steel Drawing Pens, with ivory handles	.....	4*s.* 0*d.*
do. do.	brass-jointed do.	4*s.* 0*d.*
do. do.	German silver do.	4*s.* 6*d.*

And every other instrument of the best workmanship equally low.

SALES BY AUCTION.

STRATFORD, ESSEX.—Very valuable Freehold Estates (land-tax redeemed), in residences and most eligible Building Land, situate in Stratford-grove, on the high road from London to Woodford, and extending to Gunnell's-bridge, and to Leyton, altogether about 10 acres, late the property of William Manby, esq. deceased.

MESSRS. FAREBROTHER, CLARK, and LYE, are instructed by the Executors to SELL, at GARRAWAY'S, on TUESDAY, JULY 18, in numerous Lots, the very valuable FREEHOLD ESTATES, consisting of a capital residence, with coach-house and stabling, garden, and pleasure-grounds, at Stratford-green, let to Mr. Thomas Walton, esq.; the adjoining residence and garden, let to Mrs. Grey; a residence and garden, let to Mr. Slee, and about 9 acres of much valuable building ground. To be viewed by permission of the tenants, and particulars and plans will be ready twenty-one days prior to the sale, and may be had of Mr. Dixon, Surveyor, Stratford-grove; of Messrs. Hopes, Gaussen, and Hurt, Solicitors, Lewes, Sussex; at Garraway's; and at the Offices of Messrs. FAREBROTHER, CLARK, and LYE, Lancaster-place, Strand.

BROCKLEY PARK, FOREST-HILL, KENT.—Valuable Freehold Building Ground, land-tax redeemed, and free from tithes.

MESSRS. FAREBROTHER, CLARK, and LYE, have received instructions to SELL by AUCTION, at GARRAWAY'S, on WEDNESDAY, JULY 17, at TWELVE, in thirty-seven Lots, very valuable FREEHOLD BUILDING GROUND, in Brockley-Park, Forest-hill, Kent, having frontages, with a southern aspect, of 60 feet, being part of an estate, containing 25 acres within ten minutes' walk of the Lewisham side of the Forest-hill Station, on the London, Brighton, Dover, Folkstone, Ramsgate, Hastings, and Croydon Railways. The position of this property is particularly eligible for the erection of a superior class of detached or semi-detached villas, being in one of the most healthy and picturesque parts of the county of Kent, commanding extensive panoramic views to be met with in the neighbourhood of Sydenham, extending a distance of 15 miles towards Knockholt-beeches, and embracing Shooter's-hill, Knockholt-beeches, with the intervening Crystal Palace, and the Shirley-hills. This property is of a character to meet the increasing demand for building sites in the country, within easy access of the metropolis. The land also affords every facility for a complete drainage and an abundant supply of soft water.—Particulars and conditions of sale, with plans, may be had twenty-one days prior to the sale, of Mr. Charles Percival Tite, Solicitor, 1, Angel-court, Throgmorton-street; of Mr. William Colson, Dartmouth-park; and at the Dartmouth Arms, Forest-hill; at the Greyhound, Sydenham; Lion and Lamb, Lewisham; at Garraway's; and at the Offices of Messrs. FAREBROTHER, CLARK, and LYE, Lancaster-place, Strand.

Valuable Freehold Building Land (land-tax redeemed), on the high road from Richmond and Twickenham to Isleworth, which divides it from the beautiful estate of St. Margaret's, on the banks of the Thames.

MESSRS. FAREBROTHER, CLARK, and LYE will SELL by AUCTION, at GARRAWAY'S, on WEDNESDAY, JULY 6, at TWELVE, in one or three lots, by direction of the Right Hon. the Earl of Kilmorey, a valuable enclosure of FREEHOLD MEADOW LAND, about 18 acres, situate near to Isleworth, on the high road to Richmond and Twickenham. Each lot has an extensive frontage to the high road, running a considerable depth, and abutting on the Old River and comprises from 2 to 3½ acres in quantity. The above valuable land, from their close vicinity to Richmond, Twickenham, and Isleworth, offer most eligible sites for building villa residences. Particulars, with plans, may be had twenty-one days prior to the sale, of Messrs. Cox, Williams, and Jaffe, Solicitors, 63, Lincoln's-inn-fields; at Garraway's; and at the Office of Messrs. FAREBROTHER, CLARK, and LYE, Lancaster-place, Strand.

Votes for the counties of Essex, Kent, Middlesex, Surrey, and Herts. Freehold Building Land, in small allotments, tithe-free, and land-tax redeem d.

MR. ACOCKS will SELL by AUCTION, at GARRAWAY'S, on MONDAY, JUNE 27, at TWELVE for ONE, a very FREEHOLD ALLOTMENT, situate at Muswell hill and Uxbridge-road, adjoining Tollington, Tetherington, and Anerley, Surrey. Also a Freehold Rent-charge of 50s per annum, at Poplar (one property). Particulars and conditions of sale may be had at the principal Inns in the neighbourhood of the respective estates; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

Important Freehold Property, of nearly 600l per annum, at Hatcham New-town, Old Kent-road.

MR. LEIFCHILD desires to announce that he is instructed by the mortgagees to offer for SALE by PUBLIC AUCTION, at GARRAWAYS, on TUESDAY, JUNE 26, at TWELVE for ONE, in numerous lots, the following valuable and desirable PROPERTY, comprising 41 eligible plots of convenient dwelling-houses, 41 eligible plots of freehold building ground, freehold ground rents, well secured, amounting to about 340l. per annum, advantageously situate in Hatcham-road, Hatcham-terrace, Surrey-grove, Britannia-place, and Cross-street, in Hatcham New-town, contiguous to the new bridge now erecting over the Surrey Canal, with excellent access from the Old Kent-road. Particulars and conditions of sale, with lithographic plans thereof, can be had on the 1st of June, and may be had at the Rising Sun, Old Kent-road; at Garraway's; of Messrs. Bisshop and Cover, Solicitors, 14, Coleman-street; and at Mr. LEIFCHILD's Offices 62, Moorgate-street, City.

Freehold Building Land, Finchley.

MR. EDWIN FOX will SELL by AUCTION, at the MART, on THURSDAY, JUNE 23, at TWELVE for ONE precisely, in lots, FORTY-TWO PLOTS of valuable FREEHOLD BUILDING LAND, situate at Finchley, six and a half miles from Regent's-park, and having a frontage to the high-road, near the Torrington Arms. Full particulars and plans may shortly be had of Messrs. Crosse, Solicitors, 3, Hatton-court, Threadneedle-street; at the Torrington Arms, Finchley; at the Mart; and at Mr. Edwin Fox's Offices, 41, Coleman-street, Bank, and Westcroft-place, Hammersmith.

Secure Leasehold Investments, Hyde-park, Stockwell, and Nine-elms, Battersea.

MR. EDWIN FOX will SELL by AUCTION, at the MART, on THURSDAY, JUNE 23, at TWELVE for ONE o'clock precisely, a LEASEHOLD ESTATE, consisting of a Family Residence, No. 32, Gloucester-terrace, Hyde-park, let for three years, at the very low rental of 100l. per annum, but of the annual value of 150l.; 2l. for a term of 31 years also a few days unexpired, at a ground-rent of 4l. per annum; and Two Pairs of semi-detached Villa Residences, pleasantly situate in Park crescent, Stockwell, and be ng Nos. 17, 18, 19, and 20, let to highly respectable tenants, at rents amounting to 80l. per annum, held for a term of 72½ years unexpired, at a ground-rent of 35l. 5s. per annum. And a Leasehold House, situate and being No. 6, Howard-street, Nine-elms, let to a highly respectable tenant at 38l. per annum; held for a term of 84½ years unexpired at a ground-rent of 2l. per annum. May be viewed, by permission of the tenants. Particulars had of Messrs. Crosse and Sons, Solicitors, 10l, Wood-street, Cheapside; at the Mart; and at Mr. Edwin Fox's Offices, 41, Coleman street, Bank, and Westcroft-place, Hammersmith.

TO ENGINEERS, BUILDERS, AND SHIPPERS TO THE COLONIES.

FOR PUBLIC SALE, at LLOYD'S CAPTAINS' ROOM, Royal Exchange, on TUESDAY, the 21st JUNE, at HALF-PAST TWO o'clock precisely, on account of the underwriters, about 10,000 feet of GALVANNED CORRUGATED IRON ROOFING, Canvas, Provisions, and other stores, in Lot.—Catalogues in due time. C. LACHLANS and MACLEOD, Sworn Brokers, 83, Cannon-st.

WARD'S PERIODICAL TIMBER SALES. The next SALE by AUCTION, at the TIMBER-YARD, BERMONDSEY NEW-ROAD, Surrey-side, will be on WEDNESDAY, JULY 6th, at TEN for ELEVEN o'clock precisely, and will consist of a large quantity of dry Honduras mahogany, of various thicknesses; 150 logs of Cuy St. Domingo mahogany, Honduras and cedar panel board, white and yellow deals, battens, and planks, Spanish, Honduras, and walnut-veneers, American and birch, in planks and boards; ash and beech plank, beech quarters, felloes, &c. The yard is now ready to receive such goods as may be intended for the said sale.—N.B. The business of a timber merchant carried on as usual.

SALES BY AUCTION.

MILLBANK, WESTMINSTER.—Dissolution of partnership in the Stone-trade, and consequent disposal of the entire valuable stock of Stone, &c.

MESSRS. EVERSFIELD and HORNE respectfully announce, that this important SALE will take place on the PREMISES, foot of Vauxhall-bridge, on TUESDAY, JUNE 21, and two following days, at ELEVEN o'clock, in the following order:—

First day.—4,000 feet run of York coping steps and cills, 1,000 feet super. of sinks, 7,500 feet of Harehill, Park-spring, Portland, and other slabs; 1,000 feet of marble slab, granite steps, posts, spur stones, kerb and pitching, Park-spring and York landings, grindstones, Welsh fire goods, and a large slab of slate, 13 feet long by 6 feet 10 inches wide.

Second day.—About 5,000 cubic feet of stone in block, comprising Portland, Aubigny, Bramley Fall, Park-spring, Harehill, Potter Newton, Caen, Bath, and granite; 500 feet of large York landings, sinks and steps, granite tramway, kerb, &c.

Third day.—15,000 of York landings, hearths and paving, sinks and steps, Aubigny and other stone, granite pitching, Welsh fire goods, trade implements, large wrought-iron repository, &c.

May be viewed, and catalogues had on the premises, and of the Auctioneers, 30, Parliament-street, or Coal Exchange—N.B. Bills at three months will be taken.

CITY IMPROVEMENTS.—Cannon-street Widening and the New street to St. Paul's.—Capital Building Materials and Trade Fixtures of Nine large Houses and Watch-cases, St. Paul's-churchyard and Friday-street.

PULLEN and SON have the honour to announce that they will SELL BY AUCTION, on the PREMISES, on MONDAY, JUNE 20th, and two following days, at TWELVE, by order of the Improvement's Committee of the Corporation of the City of London, all the excellent BUILDING MATERIALS and FIXTURES of several specious modern WAREHOUSES and DWELLING-HOUSES, on the south side of St. Paul's-churchyard, Friday street, and Cartor-lane; comprising 40,000 capital bricks, several lots of deal, plain and panelled doors, prime timber in roofs and floors, 100 pairs of sashes, including several with plate glass, modern doors, partitions, chimney pieces, skylights, flooring and lining boards, iron columns, and an immense variety of interior fittings-up of a superior description, plate-glass fronts and lobby-doors, 5,000 feet of capital mahogany and walnut counters, ranges of shelves and drawers, office desks and iron safes, showcases and tables, stoves, gas-fittings, and capital house and warehouse fixtures. May be viewed two days prior. Catalogues had at the Architect's Office, Guildhall; and of PULLEN and SON, 89, Fore-street, Cripplegate.

AN ARCHITECT, in large and important practice, surveyor to two building estates in the neighbourhood of London, has a vacancy in his Office for an OUT-DOOR PUPIL. The youth must have a gentlemanly address, and have been well educated.—Address, S. S. Mr. Philips's, 43, Store-street, Bedford-square.

APPRENTICE WANTED in the MARBLE BUSINESS. A clever Youth will have a first-rate opportunity of learning a good business, with a comfortable home near the business. For further particulars address to F. K. Office of "The Builder," 1, York-street, Covent-garden. Marble masons and polishers wanted.

TO RED-WARE POTTERS.

TO a Man who is steady and industrious, and who is well experienced in making and glazing, an opportunity offers of a PERMANENCY, with employment for his son, if any.—Address, C. C. C. Office of "The Builder," 1, York-street, Covent-garden.

CLERK of WORKS WANTED.—Wanted, a CLERK of WORKS in the vicinity of Liverpool; a practical carpenter thoroughly acquainted with masonry and the other departments of building, constructions, and material will be preferred.—Address, X. Z., stating salary, &c. care of Mr. Greenwood, Advertising Agent, Castle, Liverpool.

AN Architect and Surveyor at the West End requires ASSISTANCE.—Direct to X. Z. Office of "The Builder," 1, York-street, Covent garden, stating qualification and remuneration.

ASSISTANTS and PUPIL WANTED.—An Engineering Surveyor is in immediate WANT of ONE or MORE FIRST-CLASS ASSISTANTS, to whom liberal salaries would be given; also a Pupil desirous of attaining a practical knowledge of trigonometrical surveying on a large scale. Premium, from 100 to 200 guineas.—Address, J. L. A. 7, Castle-street, Holborn.

WANTED, a MAN, to look after a small Table Engine; one who can sharpen saws would be preferred.—Apply to S. WILLSON, Builder, 120, Great Suffolk-street, Southwark.

WANTED, PAINTERS, GLAZIERS, and PAPERHANGERS, also IMPROVERS. Constant employment for steady hands. There is also an opening for one or two apprentices.—Apply to HAINS and CO. Prospect-place, Long Ditton, near Kingston, Surrey.

TO CARPENTERS.

WANTED, a steady respectable Person as FOREMAN JOINER, to superintend six or eight men. He must be a thoroughly attentive and intelligent man, competent to set out work in a first-rate manner. He must have an excellent character from his last situation.—Apply, stating wages and where last employed, to A. B. Post-office, Rotherham, Yorkshire.

WANTED, a FOREMAN CARPENTER, for a job in the south coast. Wages, 5s. 6d. and lodging.—Apply at 14, Charlton-place, Islington.

WANTED, a "TRAVELLER," capable of hiking from seven to ten tons.—Address, with particulars and price, to HENRY COX, Marazion, Cornwall.

TO PAPERHANGERS AND PAINTERS.

WANTED, an active, intelligent Man as an ASSISTANT in a Paperhanger's and Painter's establishment. None need apply who cannot give unexceptionable reference.—Apply by letter, in own handwriting to A. C. Universal News Rooms, 285, High Holborn.

WANTED, a SITUATION as FOREMAN in the PLUMBING, GLAZING, and PAINTING Department. Understands measuring, making out estimates, &c.—Apply by letter, post-paid, W. C. Post-office, Kilburn. Country preferred.

TO ARCHITECTS.

WANTED, an ENGAGEMENT by a Gentleman who has lately completed his articles. He has been accustomed to make fair and working drawings, and to attend to the general routine of office work.—Address, A. Z. X. Office of "The Builder," 1, York-street, Covent-garden.

TO COUNTRY MASTER PAINTERS.

WANTED, by a respectable Young Man, a SITUATION, as PAINTER and GRAINER; has a thorough knowledge of graining, and is conversant in the different branches of the trade. Wages not so much an object as constant employment. References given if required.—Address, G. H. Office of "The Builder," 1, York-street, Covent-garden.

TO MASTER PLUMBERS.

WANTED, by a strong, respectable Young Man a SITUATION as PLUMBER'S LABOURER; has a knowledge of the business. Wages moderate if permanent.—Direc, W. D. 14, Broad-street, Bloomsbury.

TO BUILDERS, &c.

WANTED, by a Young Man, a SITUATION in a Builder's Office. He is practically acquainted with book-keeping and accounts, making drawings, &c.—Address, W. B. 14, Murray-street, Hoxton.

TO CONTRACTORS AND OTHERS.

WANTED, by a Man of considerable experience in railroad and other public works a SITUATION as WORKING FOREMAN of BRICKLAYERS, in town or country. Satisfactory references given.—Address, H. L. S. Office of "The Builder," 1, York-street, Covent-garden.

TO CARPENTERS AND JOINERS.

WANTED, to APPRENTICE a Youth to the above trade, out door. A moderate premium given.—Apply to I. J. T. Builder, 37, Brick-lane, Old-street, St. Luke's.

TO BUILDERS.

WANTED, to APPRENTICE a respectable well-educated YOUTH to the above business, with a person possessing facilities for imparting a thorough knowledge of the business, and where he might enjoy the comforts and restraints of a well-regulated home. A moderate premium will be given.—Address, A. C. care of Dixon and Arnold, 29, Poultry.

TO PLUMBERS, &c.

WANTED, by a Young Man, in Town or Country, a SITUATION as PLUMBER, GLAZIER, and PAINTER.—Address, A. D. Prince Albert Coffee-house, 93, Milton-street, Chiswell-street, London.

TO GENTLEMEN AND BUILDERS

WANTED, a SITUATION, or occasional employment, by the Advertiser, who is well versed in the practice and theory of the building trade generally required at the South and in the office, and would be found very serviceable in directing and superintending repairs, planning up agreements, and other matters connected with an estate of houses.—Direct, post-paid, A. Y. 66, Denbigh-street, Belgrave-road.

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WANTED, by the Advertiser, who has had considerable practical experience in a mill of his own, a SITUATION as MANAGER, FOREMAN, or any other capacity where a confidential person is desired.—Address, A. B. C. care of Mr. Bannister, 7, Brill-place, Somers-town, London.

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WANTED, a SITUATION as PLUMBER. No objection to turn his hand to any other part of the business. Good references can be given from last employer.—Direct to A. M. C. Duke of Cumberland, Bryanston-street, Cumberland-street, Marylebone.

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WANTED to place a YOUTH, 16 Years of Age, as OUT-DOOR APPRENTICE, for five Years to the above Trades.—Address X. Y. Z. Mr. Gilneth's, Baker, 19, Hilltop-street, West Smithfield.

THE Advertiser is desirous of meeting with a RE-ENGAGEMENT, either in the Office, or to take charge of Works out; is a good, fair, and working draughtsman; well acquainted with practical building and construction, setting out work, measuring, estimating, &c.—Country preferred.—Address, A. B. 15, Brompton-row, Brompton.

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THE Friends of a Young Gentleman, aged 21, of good family, are desirous of having him as PUPIL in the house of a gentleman in the above profession, where he would have every opportunity of learning the business, and would have the comforts of a refined home and good society. The country preferred, and also where no other pupil is taken. Nobody but gentlemen by birth and education need apply.—Address, A. B. Mr Living's, 1, Chancery-lane, London.

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A YOUNG MAN, aged 21, who has been six years in the employ of a London builder, is desirous of an ENGAGEMENT, in town or country.—Apply, S. S. Office of "The Builder," York-street, Covent-garden.

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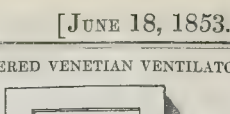
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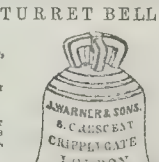


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Notice is hereby given, that Fire Policies which expire at Midsummer must be renewed within fifteen days at this Office, or with Mr. SAMS, No. 1, St. James's-street, corner of Pall Mall; or with the Company's Agents throughout the Kingdom, otherwise they become void.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

Established 1824.—Empowered by Special Act of Parliament.

ADVANTAGES

EXTENSION OF LIMITS OF RESIDENCE. The assured can reside in any part of Europe, the Holy Land, Egypt, Madeira, the Cape, Australia, New Zealand, and in most parts of North and South America, without extra charge.

MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.

The small share of profit divisible in future among the shareholders being now provided for, the assured will hereafter derive all the benefits obtainable from a Mutual Office, with, at the same time, complete freedom from liability—thus combining in the same office all the advantages of both systems.

The Assurance Fund already invested amounts to 850,000l. and the income exceeds 136,000l. per annum.

CREDIT SYSTEM.—On Policies for the whole of life, one-half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.

LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.

BONUSES.—Five Bonuses have been declared; at the last in January, 1852, the sum of 131,125l. was added to the Policies, producing a Bonus varying with the different ages from 24 to 55 per cent. on the Premiums paid during the five years, or from 5l. to 12l. 10s. per cent. on the sum assured.

PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received prior to the books being closed for any division, the Policy on which it was paid will obtain its due share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next will be entitled to one year's additional share of Profits over later assurers.

APPLICATION OF BONUSES. The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.

NON-PARTICIPATION IN PROFITS.—Assurances may be effected for a fixed sum at considerably reduced rates, and the Premiums for term Policies are lower than at most other safe offices.

PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are Indisputable except in cases of fraud.

INVALID LIVES may be insured at rates proportioned to the increased risk.

POLICIES are granted on the lives of persons in any station, and of every age, and for any sum on one life from 50l. to 10,000l.

PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within fourteen months.

The accounts and balance-sheets are at all times open to the inspection of the assured, or of persons desirous to assure.

Tables of Rates and forms of Proposal can be obtained of any of the Society's agents, or of

GEORGE H. PINCKARD, Resident Secretary.

99 Great Russell-street, Bloomsbury, London.

PHŒNIX FIRE ASSURANCE COMPANY, Lombard-street and Charing-cross, London.

Established in 1782.

TRUSTEES AND DIRECTORS.

Sir Robert Harry Inglis, bart. M.P.

Decimus Burton, esq.
Octavius Edward Coope, esq.
William Cotton, esq.
William Davis, esq.
George Arthur Fuller, esq.
James Alexander Gordon, esq.
Henry Grace, esq.
Joseph Owen Harris, esq.
Thomas Hodgson, esq.
Kirkman Daniel Hodgson, esq.
James Horne, esq.
William James Lancaster, esq.
John Porrien Magens, esq.
J. Masterman, esq. M.P.
John Petty Muspratt, esq.
John Timothy Ozley, esq.
George Stanley Repton, esq.
Benjamin Shaw, esq.
Charles Hampden Turner, esq.
Matthew Whiting, esq.

AUDITORS.

John Davis, esq.
John Hodgson, esq.
William Hammond, esq.

SECRETARIES.

Wilmer Harris, esq.
George William Lovell, esq.

ARCHITECT AND SURVEYOR.—John Shaw, esq.

SOLICITORS.—Messrs. Dawes and Sons, Angel-court.

Insurances against loss by fire are effected by the PHŒNIX COMPANY upon every description of property, in every part of the world, on the most favourable terms.

Persons insuring with the Phœnix Company are not liable to make good the losses of others, as is the case in some offices.

Assurances with this Company expiring at Midsummer must be renewed within fifteen days thereafter, or they will become void.

Receipts are now ready at the principal Offices, Lombard-street and Charing-cross, and with the respective Agents throughout the United Kingdom.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—

Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

DISSOLUTION of PARTNERSHIP.—



HENRY PASK (late Johnson and Pask), Basket-maker, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his Customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.



N.B. By inclosing a postage stamp a full list of prices may be had by return of post.

NO. 18, CURSITOR-STREET, CHANCERY-LANE.

SANDS and EMERY,



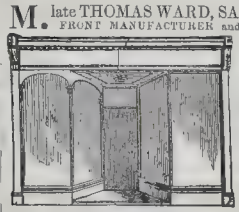
Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.



Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation.

By inclosing a postage stamp, a full List of Prices will be returned.

M. late THOMAS WARD, SASH and SHOP FRONT MANUFACTURER and JOINER to the TRADE, 198, Upper Whitecross Street, St. Luke's.



Established 1820

Upwards of 300 good seasoned Doors in stock.

Workmanship and Materials of the best description

Estimates given for every description of work.

By enclosing a postage stamp, a full List of Prices will be returned

FISHER and MILLS (late Shop Foremen to Messrs. Lawrence and Sons), JOINERS to the TRADE, 70, York-road, Lambeth. Shop-fronts, fittings, staircases, &c.

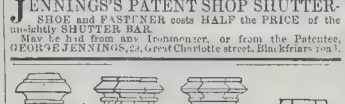
Well-seasoned materials, and superior workmanship at the lowest possible prices. A quantity of doors and sashes always in stock. By inclosing a postage-stamp, a full list of prices will be returned.

WM. CHUTTER, 39, Upper Stamford-street, Waterloo-bridge, and 244, Gloucester-street, Queen-square, Bloomsbury, Joiner to the Trade.

Well-seasoned materials and superior workmanship at the lowest price. By enclosing a postage stamp, a list of prices will be returned.

WINDOW BLINDS.—TYLOR & PACE,

Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 9d.; bes holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.



JENNINGS'S PATENT SHOP SHUTTER-SHOE and FASTINER costs HALF the PRICE of the unsightly SHUTTER BAR.

May be had from any Ironmonger, or from the Patentee, GEORGE JENNINGS, 29, Great Charlotte street, Blackfriars-road.



ORNAMENTAL CHIMNEY-POTS.—

More than 100 patterns of the above-mentioned articles are manufactured in artificial stone by J. SEELEY, at Austin and Seeley's Artificial Stone Works, 1 to 4, Keppel-row, New-road.

FOWLER'S IMPROVED FARM and COTTAGE PUMPS.

To be had of any Ironmonger or Plumber, 1l. 15s.

The usual allowance to the trade.



PUMPS of SUPERIOR CONSTRUCTION bored perfectly true by improved machinery, in various plain and ornamental patterns, for squares and market-places, roads, conservatories, liquid manure, ship, barge, brickmakers, contractors, gold diggers, brewers, chemical works, and in wrought and cast-iron, copper and brass, for hot or cold liquors, &c. &c. Long barrel and hydraulic lift-pumps, with handles on planks; and engines of various powers, for wells of any depth.

PUMPS on HIRE!—The largest stock in England of single and double pumps, from 4 in. to double 13 in. barrels, prepared for hand or steam power, ready for use on reasonable terms, at

BENJ. FOWLER'S, Hydraulic Engineer, Hot-water, Steam and Gas Apparatus Manufacturer, New Factory, Whitefriars-street, Fleet-street.

FARM AND COTTAGE PUMPS

WARNER'S PATENT CAST-IRON PUMPS, for the use of FARMS, COTTAGES, MANURE TANKS, AND SHALLOW WELLS.



Patent Pump..... £1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing..... 3 0 0

Larger sizes if required.

To emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and cheapest pump hitherto introduced.

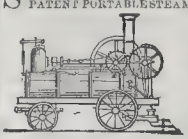
May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers,

JOHN WARNER AND SONS, 8, CRESCENT, JEWIN-STREET, LONDON.

Every description of Machinery for raising Water, Fire Engines, &c.

The usual allowance to the Trade.

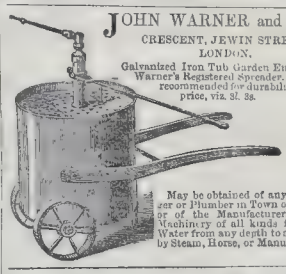
STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



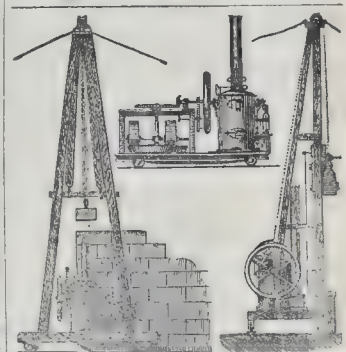
Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS, Engineers and Contractors, John's-place, Holland-street, Southwark, London.

JOHN WARNER and SONS, CRESCENT, JEWIN STREET, LONDON.



Galvanized Iron Tub Garden Engine, with Warner's Registered Sprender, is strongly recommended for durability and low price, viz. 3l. 3s.



May be obtained of any Ironmonger or Plumber in Town or Country, or of the Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

A SAVING of TIME and MATERIALS with solidity of Building.

NATHAN GOUGH'S PATENT PORTABLE STEAM-ENGINES of two, three, four, and six-horse power, for grinding mortar, raising building materials, driving piles, circular saws, pumps, &c. 48, Albert-street, Manchester.

TESTIMONIAL.

From the Trustees of the Birkenhead Docks.

"Engineer's Office, Dock-yard, Birkenhead, 21st July, 1851.

"Nathan Gough, esq.

"Sir,—I have much pleasure in informing you that the three-horse engine which you have placed in the Caisson for pumping, answers its purpose admirably, doing its work much better than seventy men could accomplish. From its portability and lightness, it is peculiarly adapted for such a purpose.

"I am, Sir, your obedient servant,

"JAS. ABERNETHY."

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 22, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers.....	from 3½d. per yard.
Painted Marble, Granite, and Oak Papers ..	from 5½d. do.
Superior Dining and Drawing-room Papers from	1½d. do.
Satins and Flock.....	from 3½d. do.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 310, OXFORD-STREET, where all goods can be obtained on the same terms as at the Factory.

GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 115, Whitechapel, near the Obelisk, and 500, Oxford-street.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters, Cantres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.

Machine Printing Works, Royal Mills, Wandsworth, Surrey; Block Printing Works, 451, Oxford-street, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN 100 FEET BOXES, THIRDS QUALITY.

Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.
6	by 4	19	by 10	14	by 11	16½	by 12½	18	by 13	18	by 14
6½	„ 4½	19½	„ 10½	14½	„ 11½	17	„ 12	18½	„ 13½	18½	„ 14½
7	„ 5	13s. 7d.	19	„ 10	15	„ 11½	17½	„ 13½	191.	19	„ 13	19	„ 14
7½	„ 5½	19½	„ 10½	15½	„ 11½	18	„ 12	19½	„ 13½	19½	„ 14½
8	„ 6	14	„ 10	16	„ 11	18½	„ 12½	20	„ 13	20	„ 14
8½	„ 6½	14½	„ 10½	16½	„ 11½	19	„ 13	20½	„ 13½	20½	„ 14½
9	„ 7	15	„ 10	17	„ 11	19½	„ 13½	19s.	21	„ 13	19s.	21	„ 14	19s.
9½	„ 7½	13½	„ 10½	17½	„ 11½	20	„ 13	21½	„ 13½	21½	„ 14½
10	„ 8	16	„ 10	14	„ 12	20½	„ 13½	22	„ 13	22	„ 14
10½	„ 8½	16½	„ 10½	14½	„ 12½	16	„ 13	23½	„ 14	23½	„ 14½
11	„ 9	16s. 3d.	17	„ 10	15	„ 12	16½	„ 13½	191.	16½	„ 14½	191.	23	„ 14	19s.
11½	„ 9½	17½	„ 10½	15½	„ 12½	17	„ 13	17	„ 14	24	„ 14
12	„ 9	18	„ 11	16	„ 13	17½	„ 13½	17½	„ 14½
12½	„ 9½	18½	„ 11½

In Cases, 250 feet .... £1 16 6 } In sizes 40 by 30.
„ 300 feet .. .. 2 14 0 } to 43 by 31.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, Blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

PATENT and BRITISH PLATE GLASS. JAMES HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff of Prices for the above will be sent on application; they will also, on receipt of particulars, furnish estimates for any description of Glass now manufactured.—Patent Plate, Sheet, Crown, and Ornamental Window Glass Warehouse, 35, Soho-square, London.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Birmingham, established 1807. Richly cut and engraved decanters in great variety, wine-glasses, water jugs, goblets, and all kinds of table glass, at exceedingly moderate prices. Crystal glass drawing room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

FOREIGN SHEET GLASS, packed in 200-feet Cases, 24s., 36s. and 38s. per case.

Patent Sheet Glass,
in sheets of 46 by 36, 2l. 9s. per crate of 300 feet.
GLASS TILES,
½ of an inch thick,
packed in cases containing 50—2l. 7s. per case.
JAMES PHILLIPS AND CO.
116, Bishopsgate-street Without

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 28, SOHO-SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental work in glass, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD-STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

MEDINA (ROMAN) CEMENT.—The material of which this cement is made is obtained in the Isle of Wight. It has all the properties of the Septaria nodules, but is much better adapted to engineering works, from the rapidity with which it sets and hardens under water. It has been largely used at the great Breakwater at Cherbourg; in a similar work at Alderney; and at Dover New Pier, to unite the masonry. The foundation of the centre pier of the Tubular Bridge at Menai Straits is laid in Medina Cement. A new groyne at Sandown Bay, Isle of Wight, has been constructed of no other material but this cement and sea shingle. The work extends 300 feet into the sea, and is exposed to the most violent gales of the Channel, in a position where every inconvenience of the varied qualities of Roman Cement are superseded by the use of this improved manufacture.

CHAS. FRANCIS and SONS, Nine Elms, London; or West Medina Mill, Newport, Isle of Wight.
Agent for Southampton, B. L. FELDER, American Wharf

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ROMAN and OTHER CEMENTS. Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who, in 1796, first introduced PARKER'S ROMAN CEMENT; also Tarras and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots, Trusses, &c.
Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1852, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland-yard, Whitehall

PORTLAND CEMENT.—6, South Wharf, Paddington. CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not warp, crate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin), much improved the quality of this cement without any increase in price

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments to prove the several comparative strengths of their Patent Portland Cement, may be had at their office, New wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, Mr. HENRY ROBINSON, 31, King-street, Liverpool.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties, that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster; and Seel-street, Liverpool.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

TO CONTRACTORS AND OTHERS.

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The Builder.

SATURDAY, JUNE 25, 1853.

OF a budget of letters just now received, and some of which we will turn over for the gratification of their writers and the edification of our readers, the majority relate to the Sunday Question at the Sydenham Palace, and the proposed erection of Baron Marochetti's statue of Richard Cœur de Lion as the memorial of the Great Exhibition of 1851, which have both provoked very strong feelings. Amongst those on the first-named subject, the writer who signed himself "An Old Boy" of course replies to the indignant "Lambeth Potter," and objects very strongly to the tone adopted by the latter, though his anger leads him, in the course of his epistle, to approach it very closely. We give a portion of his letter:—

"What is the 'degrading assertion' which the 'Lambeth Potter' 'throws back with contempt?' I observed upon the prevalence of drunkenness amongst the mechanics and laborious population of this country generally,—a vice in good repute about fifty years since amongst what are usually termed the higher orders, amongst whom, to the honour of these days, that degrading propensity is exploded, 'drunkenness' being now synonymous with 'blackguardism.'—Is it not sad to think that so vicious and so degrading a habit should still linger amidst so numerous and so valuable a class of men as the British mechanics? The Potter cannot deny it. I sought an excuse for our hard-worked countrymen, and touched upon a remedy for the evil. Was this a motive for a mechanic's vengeance? I am *with* the mechanic, as every rational man must see, and the Potter says about him, heedless whether he strike friend or foe.

"The Crystal Palace of 1851 was such a mental banquet as the world had never before seen. It was a well-ordered accumulation of the productions of nature and art, exhibiting in an impressive manner the mastery of mind over matter, for the good of the human race; a spectacle revealing at every step the beneficence and wisdom of Divine Providence, thereby vindicating the ways of God to men. And this fine thought, the happy realization of which struck all men with wonder, is to receive further development in the building now constructing. Can we doubt its influence on the masses? And yet all who advocate the opening of this collection on Sunday afternoons are classed by this indiscriminating writer amongst the vulgar herd of mere 'pleasure seekers.' O dismal Potter! The clay with which thou fashionest thy pots must have entered thy very soul!

"The Potter is solicitous respecting the comfort of the '2,000 petitioning cabmen and omnibus drivers,' and hopes they may be allowed the privilege of enjoying the Sunday 'in the company and bosom of their families.' It is not very easy to understand how the position of the cabmen and omnibus drivers can be materially affected by the closing or opening of the Sydenham Palace on Sunday afternoons. Have the public declared they will ride nowhere else on the Sunday? Should there be no Sydenham Palace open on the Sunday, still the 'cabmen and omnibus drivers' must seek the privilege of enjoying one day out of the seven 'in the bosom of their families' through an arrangement between themselves and their employers."

We cannot afford space, however, for more than his concluding paragraph, wherein he says:—

"When next the writer undertakes to argue this question, let him make himself acquainted with the leading principle and general outline of the design; if then he persist in thinking that an institution teeming with lessons of a solemn character,—a world in miniature, resplendent with the goodness and wisdom of the Almighty maker,—a spectacle, therefore, of an essentially religious character,—should be closed throughout a holyday against the people, I, for one, will listen to what he has to say."

Several correspondents discuss the question on theological grounds, denying "that the fourth commandment is as binding upon Christians as on Jews."

"The position which your correspondent assumes," writes one (C) "and upon which his objection to Sunday recreation appears to be alone based, is, that the opening of the Crystal Palace on that day would be opposed to the Law of Moses, considered by him, singularly enough, and contrary to all Scriptural authority, as being equally binding upon Jews and Christians. Not to lay any stress upon the fact that the Jewish Sabbath was on the seventh day of the week, and not on the first,—that the setting apart the latter was founded upon no Sabbatical theory whatever, but as simply commemorative of the resurrection of Christ, as Christmas-day is commemorative of his birth, and Good-Friday of his death,—to what precise extent, let me ask, does 'B. G.' propose to observe the Sabbath? The law is, that on that day, neither he, nor his servants, nor his cattle, shall do any work. Does he fulfil this law? Because, if not, the same code of laws adjudges to him the penalty of *death*. For gathering sticks on the Sabbath-day, in the time of Moses, a man was stoned to death, 'as the Lord commanded;' but, at the commencement of the New Dispensation, when Christ gathered corn on the Sabbath, he asserted that the Son of Man was Lord of the Sabbath, and proceeded to justify his conduct, both in this and in healing the sick, against the accusations of the Pharisees."

With reference to the dogmatic tone assumed by the opposite party, generally, on this question concerning the opening of the Crystal Palace, he thinks it savours of anything but that charitable spirit which we might naturally be led to expect,—and writes,—"One is tempted to quote good old Whichcote, who hath said,—'Nothing spoils human nature more than false zeal. The goodnature of a heathen is more God-like than the furious zeal of a Christian.'"

A second writer ("S. T. T."), who takes the same view of the question, says,—

"I admit that the Sabbath was of *Divine* appointment for the Jews, and think it also evident that it has been the providence of an all-wise and loving God that his creatures should have one day in seven to rest from laborious work and develop their highest faculties. Say what ye will ye men of harsh ceremonious observance, or do what ye will ye men of loose thoughts and vicious indulgence, a wiser intelligence than yours will preserve weekly days for holy and happy enjoyment for its creatures. Yes, Mr. Editor, efforts for the development of man in his social and religious being, must succeed. I believe that the opening of the Crystal Palace on Sundays would help to improve the minds of many, and to assist them onwards in their struggle for knowledge,—that great gift of God which he only gives us by little and little at a time."

From amongst the letters of objectors we must, for gallantry's sake, find place for part of one signed "Martha," and thus commencing:—

"Your correspondent 'B. G.' was quite correct in saying that the 'Old Boy' and 'Anti-Gloom' had disturbed the peace of some of your readers; and I may add, not only some of the lords of the creation, but some of the 'weaker vessels' began to quake lest their good friend the *Builder* should take part with the friends of Sabbath desecration. It is very seldom I pass the Saturday without spending some time with you, and you must allow me to add my entreaties that you will not with your far-heard voice assist in undoing that which you have begun, viz. the elevation and moralization of the working classes; and who can read the letter of the Spitalfields weaver and not rejoice that your voice is heard in the homes of the intelligent poor. It is not the well-informed artisan, such as the 'Lambeth Potter,' who would desire the Exhibition open on Sunday; and I would ask,—Is the morality of the masses in countries where they have public places of amusement open on Sundays higher than our own? Certainly not. I think that your correspondent is mistaken in the advantages which he thinks would result to the individuals for whom he professes to feel sympathy; and we should do evil, and good would not come. No: let it continue the badge by which we are distinguished amongst the nations of the earth: let it be a holy day to those who choose to keep it so,—not compelling any unnecessarily to work for those who do not."

For the satisfaction of such of our readers as desire to know, we may say, that without viewing the proposal to open the Sydenham Building on Sundays with fear, still less abhorrence, it will not find in us an advocate.

In connection with this subject comes a letter, urging the claim of mercantile and builders' clerks to a half-holiday:—

"I know from experience of nearly twenty years," says the writer (W. A.) "that no class of men work harder, have more real anxiety, or have fewer chances of relief from the desk for relaxation, than Builders' Clerks. I feel confident it only requires appeal to their employers, backed by fair representation of general and mutual benefit, to induce those who have any liberality to concede the request *for a cessation from labour at mid-day on each Saturday*, which would give a fair chance for all to enjoy the advantages of the museums, galleries, and libraries, without encroaching on the Sunday; which I should be sorry to see converted into an exhibition or fête day, such as our volatile French neighbours make of it, and which I consider the main cause of their restless and unstable conduct, as they have really no time for calm thought or reflection, but seem always engaged in a whirl of excitement."

As we are speaking of the Sydenham Palace, we may mention here that the first rib of the great transept is to be raised on the 30th inst.; and the event will be celebrated by a dinner to be given by the directors to the principal artists and contractors on the following day. When it is remembered that the transept of the Exhibition Building in Hyde-park was 150 feet in height, and its semi-cylindrical roof 80 feet in span, whereas the height of the great transept at Sydenham is 200 feet, and the span of the ribs 120 feet, it can scarcely be wondered at that the operation of the 30th inst. is anticipated with much interest.

The letters touching the erection of the statue of Richard Cœur de Lion all take the view we allowed our friend "Smith, of London," to express for us. One enthusiastic admirer of his country, "a Londoner,"—so enthusiastic indeed in defence of it, that he is obliged to go to a foreign land for words sufficiently strong to express himself in, shouts:—

"*Mon Dieu! est il possible?* Bronze! the statue should be of brass, in commemoration of so brazen a deed. It were not possible to bring together two ideas of a more heterogeneous character. What has—peace to his ashes!—the war breathing king of a feudal age to do with the peaceful gathering of nations of this more enlightened epoch? What relation do we find here between the means and the end? and if we of to-day fail to perceive any connection betwixt such antagonistic principles, how greatly will such a 'memento' mystify those who gaze at it a few centuries hence!

Disapprobation is manifesting itself throughout the land at the first intimation of this whimsical idea; and well it may, for such a clashing of thoughts grates upon the understanding, as 'sweet bells jangled, out of tune and harsh,' rack the sense of hearing. If questions artistic are not to be controlled by the laws of ratiocination, then, 'Guy Fawkes' for 'the Restoration!' What! Shall we witness an inauguration of the statue of the chivalrous Richard without the general acclamation! Such would be one of the mortifying results in persevering with this crude notion. And the cup of bitterness is to be filled to overflowing,—for a foreigner is to be honoured with a wreath which might, with the consent of nations, be placed upon an English brow. To England the palm is due of having originated the thought of 'the Exhibition of the Works of Industry of all Nations;' and the manner of realizing this philanthropic scheme was, moreover, *essentially* English. Not to allow an *English artist* to cut the stone which is to serve as a commemoration of this work, would be most ungracious.

Of this we may feel certain, the sentiments expressed by that really sensible, united, happy couple, "Mr. and Mrs. Smith, of London," in your pages recently, touching this project, will everywhere be responded to."

Without saying a word against the erection of the statue on its own merits and in its own name, we do most strongly protest against its selection as THE memento of the Exhibition of 1851. Several of our contemporaries of the press have adopted the opinions to which we first gave expression, and we believe the proposal to erect the work as the representative of the Great Exhibition has been abandoned, the cry having, to a certain extent, answered its purpose. It must have required an extraordinary amount of finessing and management to produce that wonderful outburst of admiration for a particular work of art from our aristocracy, which exploded recently at Willis's Rooms.

By way of added absurdity it has been gravely suggested in public prints, that the *marble arch* is the proper pedestal for the statue! Having outraged taste at Hyde-park-corner, a repetition of the offence is asked for Oxford-street.

A propos of Great Exhibitions, we take up a note from Paris which tells us that the proposed Palace of Industry there is at last in a fair way of being carried out, an English company, with a Mr. York at its head, having undertaken it. The plans of Messrs. Viel and Desjardins, the architects of those who first obtained the "concession," are to be used in a modified form, but another architect, M. Sandrié, will direct the works, aided by M. Viel. The improvements of the Bois de Boulogne are being proceeded with, and include a lake and river, with a waterfall, and good roads about them. Islands in the lake will be connected with the main land by ornamental bridges. Our correspondent further says that the sum of 2,000*l.* has been voted by the municipal council for four statues in bronze to embellish the *Pont des Arts*, and that M. Duret having undertaken to produce them, has chosen for subjects, Architecture, Painting, Sculpture, and Music.

These four words will serve to end with.

THE LABOUR MOVEMENT IN LONDON.

THE dispute remains much in the same state as it was last week. Messrs. Brass's men are still out, and the firm are making arrangements to obtain others from the country.

Mr. Wales, on the part of the Builders' Society, communicated to the carpenters and joiners, who met at the National Hall, the determination arrived at by the masters, and stated in our last number. In return the following letter was forwarded to him, signed "On behalf of the Committee:"—

"Having received your reply in answer to the communication requesting an interview of delegates with the master builders, which states that they cannot receive any deputation while partial strikes are going on, we beg to say, for your information, that having publicly declared that we have always opposed, directly or indirectly, partial strikes, we conceive that you cannot connect us as a body in any strikes that have recently taken place.

We therefore honestly and firmly inform you that if the request solicited is not conceded to in seven days from this, we shall feel ourselves justified in adopting any other measures we may deem advisable to secure our legitimate claim."

The master builders had a numerous and important meeting again on Thursday night (the 23rd), and decided that they could see no reason to alter their determination, communicated by Mr. Wales on 16th inst.

The threat contained in the last clause of the reply on behalf of the workmen was considered very offensive, and there is reason to fear may widen the breach.

Again we implore the workmen to pause ere they rush into a general strike.

I AM one of your readers who have blamed you for encouraging the building operatives (and consequently all other operatives) to make such demands on their employers "as must cripple the trade and injure the country."

You acknowledge that you have given a record of the advances gained by the men throughout the country, which may have served as encouragement to those in other places, and in other trades; but excuse me if I say that I have not seen any what I can call *hearty advice* against the consequence of such conduct on the part of the operatives. The movement is, indeed, extensive, and of the deepest importance to the country.

At the general meeting of carpenters and joiners held last week, I was surprised at seeing so little either of philosophy or novelty, the best and most interesting observations being against strikes. This is as it should be; and it is well that *King*, who determined to *rule* his masters, was put down.

As regards strikes, it is a *cruelty*, not only to the masters, who, if in any trade extensive enough to be obnoxious, are generally working at contract prices and at contract times, but it is especially cruel to their own body; and is too frequently induced by the idlest and worst men in the shop, who get some appointment by which they can live upon their companions, regardless of the steady, good workmen with large families, who are by them compelled to give up employment and wages with which they were satisfied. But it may be thought and said by well-minded men, that this cannot happen; that an English workman can always work for what master and what wages he pleases; that it is a contract between him and his master with which nobody can interfere; and that, if his skill is appreciated by his *employer* (the word you use through delicacy, as well as operative for workman, neither of them being of English growth), he may receive higher wages than his other shopmen, and, if required, work overtime. Alas! how little do these good people know of the manner in which the idle, the demoralized, and the public-house haunter can work by fear on the quietness of the good, the gentle, and the skilful of their own class. And Mr. Langstaff is right: there should be a difference—a marked difference—in the wages, as well as in the constancy of employment, of the best workmen and the worst; and it is lamentable to think how masters suffer by being obliged to take Hobson's choice—that or none.

Surely the time is come when the good, honest, skilful mechanic will no longer allow such an interference with those good prospects in age, which his care, skill, and steady conduct in youth and manhood give him a right to anticipate, *from* higher wages well deserved.

You, Sir, confine yourself to the building trade, but all trades are in the same category. And if we consider the subject as a matter of general employment, we shall the sooner and the better come to some result.

I observe that in one conference of shoemakers, the men say they do not want to injure their masters; but that their masters should charge the public more for their boots and shoes! The hatters do the same; the cotton, linen, and woollen weavers also; to which the cost of making up garments (no trifle) is to be added, as well as the preparatory operations of the currier, the tanner, &c.—all require advance in their different branches, and all to be not to the loss of their masters, but to be got from the public!

Pray who and what is the public? These very men make one-half of it—and every one of them would have to pay more for every thing he uses. I could give you some strange tales about the advance in some of the articles I have named, which go through many manipulations. Of the remaining half, one half are the clergy, professional men, officers in the army and navy, and the younger sons and daughters of the aristocracy living on the interest of small properties in the funds and public companies, on which the interest or dividends, they have been taught to believe, must be ever reducing; but that, at the same time, every article they require or consume will be equally reduced. This movement, however, is not for their benefit.

As to manufactures generally, were we all manufacturers for *each other only*, and kept the supply required by our own colonies, and the riches and resources of our own colonies entirely to ourselves, I would not differ much with the opinions of some; but in this new era, "*nous avons changé tout cela*;" and as foreigners are allowed to take our colonial gold, so will the colonists take the foreign manufactures, if sold at a lower price, and suitable to their wants; and this attempted advance of wages in every branch of labour, if successful, will assuredly reduce our export trade, and recoil on every branch of business.

Free trade, it has been dinned into our ears, was to make *everything* cheap; in cheap labour we were to outdo the Silesians, and the entire Zolverein; and now the operatives themselves are crying out Free Trade and high wages, and determine to foist into the workshops the worst men at the highest price. Can it be supposed that all this can proceed further without seriously injuring the skill of our mechanics and the trade of the country; and that, instead of 4,000 carpenters being out of employment in the metropolis, there may be 20,000? This is, however, to me a novelty, which I should hesitate to believe but from finding it given in the *Builder*.

One word on the employment of machinery—no doubt it will increase both largely and rapidly. Some large employers, to my knowledge, have hesitated, and finally decided against the use of certain machinery in their factories and workshops, on the score of philanthropy—yes, sir, pure philanthropy,—but when such things are going on, philanthropy must go to the winds—necessity, stern necessity, will send it there.

In conclusion, I will just add, that as employers give higher wages they have less work done, and much of it in a worse manner.

N. G.

The Boston cabinet-makers have formed a union to secure an advance in wages, grounding their claim on the upward price of provisions, clothing, &c. They required 24s. a week. The employers, we hear, have come to an amicable settlement of the matter with their workmen.

The journeymen builders of Beccles have followed the example of their fellow artificers, the bricklayers, in demanding from their employers an increase of wages,—viz. from 16s. to 18s. weekly. A meeting of the principal builders was held, when, after some discussion, the demand was acceded to.

At Bradford, the stonemasons have turned out for an advance of wages. By the agreement between masters and men in 1850, the weekly wages were fixed at 26s. with three months' notice. At a fortnight's notice, they now seek 28s. This agreement, the men allege, is not binding, because in 1851 they had to strike in order to enforce it; the masters having thereby broken it.

The journeymen painters of Swansea have obtained an advance of about 3s. a week. The journeymen masons, who have been out on strike at Swansea for five weeks, have had a rise of 2s. a week accorded to them.

At Cardigan, the ship carpenters have struck for an advance of 3s. a week; but this demand has not been complied with.

The journeymen painters at Cheltenham have submitted to their employers a statement, in which they say that, as a class, they consider themselves great sufferers for want of employment (on an average full five months in the year); also, considering the high price of provisions, and the casualty of work, that the present rate of wages (for the summer season) is not sufficient to place them in anything like a respectable position in life; that 4s. a day would be a fair remuneration for a fair day's work, the advance commencing on the 1st of April, and ending on the 31st of October; that some were already giving the advance, and others willing. The smaller employers, it is said, at once agreed to the demand. The large masters stand out with one exception.

The nailmakers in Camelon and St. Ninians, Stirlingshire, are engaged in a struggle with their employers. They state that "the average of a week's incessant toil in their business is 8s. 9d.—6d being deducted off that as outlay for shop-rent, coal, and tools."

In South Wales generally the wages movement has gradually extended throughout all trades and labouring people. The colliers and miners, though they have established a rise, do not appear to be satisfied, and report says that they contemplate a move for another advance, which it is believed the masters will not grant. At the Llynvi ironworks the men struck, in consequence of a new arrangement with respect to the payment of wages not having been approved by the men, and the forges have been at a standstill for some time without any prospect of an arrangement. The ironmakers, we fear, are likely to be in a worse state, as respects *amount* of wages at least, ere they can be in a better. At all events we do not think it

is likely that the price of iron will be further reduced without an attempted reduction of wages. The Llynvi workmen have frequent meetings, when 1,000 to 1,200 of them discuss their grievances, real or imaginary, and are said to conduct themselves in a very peaceful and exemplary manner.

A very serious strike has taken place at Stockport, to which, though not directly affecting the building trades, we cannot help here adverting. 20,000 weavers, with their families, are at this moment parading the streets of Stockport, idle, not from want of work to do, as has, not seldom, been the sorrowful case,—not even from any oppressive reduction of wages, but simply because their employers propose to increase these wages only if an average of thirty-five towns will show that elsewhere wages are higher, with an understood proviso that if lower they shall submit to an equivalent reduction. Of course, the masters did not object to their working people continuing at their usual wages. Here now we have an industrial community voluntarily tearing to pieces and casting to the winds, as it were, in a single week or two, thousands on thousands of sterling five pound Bank of England notes, which it will take months or years to make up out of any advance they may thus chance to obtain. And ere the loss be thus made up, such may be the state of trade that involuntary idleness from actual want of work may prevent them from even regaining the full amount of the deficiency. Surely something more to the purpose might be done with such enormous sums of money than to cast them away in strikes which thus are virtually and really profitless, even though successful. Suppose that workmen, in place of thus wasting their money, were to contribute even the half of it to an emigration fund, would they not reap an immense deal more benefit, either individually or as a class, in this way than in the most successful strike? Our decided opinion is that as a mere pounds, shillings, and pence question they would; and we are glad to observe that some of the workmen, in the building trades at least, begin to think so too.

At Manchester there is a strike among the operative glass manufacturers, two of whom were last week fined 30s. each and costs for intimidating one of their fellow-workmen. The magistrate threatened to send the next complained of to the sessions, where their punishment for such tyranny would be much more severe.

The strong feeling against the payment of different rates of weekly wages to different workmen, according to their skill and diligence, only strengthens the necessity which we have shown that the nature of the present movement induces for the adoption of some system of payment by piecework. This result begins to be foreseen by others as well as ourselves. *Lloyd's Weekly Newspaper*, an acknowledged workmen's paper, in an article last week on a proposed congress of labour, suggests that such a congress "might consider how work could be equalised as well as wages; in other words, how it would be possible to secure to skill and industry their full reward. On this subject—and it is one of very great importance, as affecting the honest distribution of wages—a correspondent writes me a letter, which I give below. My correspondent is an advocate for the universal adoption of the piecework system, as the only method of obtaining justice for the superior workman. To this proposal there are certain objections; but the point is one on which some kind of compromise is inevitable, and the various bearings of the question can only be debated with advantage by a fair representation of working men and their employers."

The correspondent in question, "A Carpenter," has also written us to the same effect, and says:—"The 'congress' notion is a good one, provided it consisted of an equal number of masters and workmen; not otherwise, as it would be partial. My suggestion is this:—Let twelve of each, in every town or city, form a committee to fix the prices of work on an equitable footing for both parties; let these prices stand for six or twelve months. Let no master or workman be allowed to deviate from these prices, and the vexed question of wages is at once settled. A good workman will meet his reward, and a bad one his deserts."

The proposer of a congress of labour also says of it, amongst its various other suggested objects,—"It seems to me that much good would also be done to the large classes of migratory workmen, if such a congress as I propose would look a little into the sanitary condition of their travelling fellow workmen—into the lodging accommodation provided for them by the way—and where they find this defective encourage the substitution of something better. There are several model lodging-houses in London, cheap, clean, and excellently conducted, built for the special use of workmen coming up to town in search of work. These might be visited by a committee, and if they are found to be unexceptionable, they might be made known to the great body of working men."

A PLEA FOR THE REVIVAL OF TRUE PRINCIPLES OF ARCHITECTURE IN THE PUBLIC BUILDINGS OF OXFORD.

OXFORD has long possessed her Architectural Society, has sent forth, from time to time, men well instructed in the general principles of taste in art, and has credit with the world for having played no small or unimportant part in the revival of Gothic, or,—as it is better called,—Christian architecture. And yet, strange to say, Oxford, perhaps more than other places, stands in need of a vigorous architectural reform. It is much to be wished that the same zeal and energy that have been shown by her sons in dealing with Ecclesiastical architecture, were shown also in an effort to amend Domestic architecture generally, and especially that of the public buildings of the University itself. The absence of such a movement is hardly to be accounted for precisely, but probably it is because there has been a great fight to be fought for other and more obviously important truths. Our churches themselves were to be rescued from ignorant and irreverent hands:—their naves pewed and galleried; their chancels misused or not used at all; fonts destroyed, removed, desecrated; altars unadorned, neglected, fearfully, miserably ill-treated; old churches ruined by modern alterations; new churches built in such strange and miserable fashion, that it seemed as though it would require an age and a lifetime of energy to amend them even in a degree. And so a minor point was forgotten. We may well be grateful that this is no longer so, and that there is, consequently, the more inclination and the more ability to examine carefully, and amend rapidly, our mode of practice in Domestic architecture.

The present opportunity seems to be one which may well be seized to examine the subject with special reference to the works, either in progress, or about to be commenced, in this city. And I feel the more bound to do this, since, from the position which I hold as Diocesan architect for the diocese of Oxford, and as a resident in Oxford, I must, of course, feel a lively interest in whatever concerns my art in the proceedings of the University.

Now there seem to be two courses, one or other of which, judging by the past acts of the University authorities and the collegiate bodies, is most likely to be taken. Either they will erect a Museum in some Classic style, or they will adopt as Gothic that development of art which obtained in the 15th century, and which is most common in the public buildings of Oxford. It is upon the assumption that one of these two courses is to be pursued, that I venture to interpose my opinion, in the trust that I may succeed in effecting a diversion in favour of another and an earlier style of Gothic art. I shall be only too happy if I find that the view which I hold is already held by those in whose hands the matter rests. I commence then by stating why, in my opinion, neither a Classic building, nor one in imitation of the third pointed or perpendicular style of architecture, is allowable. Indeed I can conceive but few arguments for Classic buildings in Oxford. For the sake of an artistical idea of contrast we already have enough; the Clarendon and the Radcliffe will suffice in their own neighbourhood, and so some peculiar fitness in the style itself for the intended purpose will be the only kind of recommendation which can be admitted. And it is this which I cannot discover. I have but to turn to a recent building to shew that in order to preserve uniformity of design, costly windows are built but to be blocked up, and a portico built never to be used; more than this, that from the exterior it is difficult if not impossible to obtain an idea of what the interior arrangement is, or what may be the object of the building.

These are faults common to almost every Classic building of late years in England; faults so glaring and so bad, that they must be allowed to be inconsistent with the highest art.

And beyond this,—as I have attempted to shew elsewhere,*—that architecture cannot be the best which is content to forego the use of the greatest mechanical advantages and inventions. And of all inventions in the history of architecture, that of the greatest importance is the invention, first of the semicircular, then of the pointed arch; the latter completely superseding the other, because in convenience and in effect it was far superior to it.

The fact that the pointed arch has been invented is therefore to my mind, and, I think, to the minds of all who deeply consider the question, a sufficient justification for the condemnation of the design of any building in which it is not used.

Let me be understood precisely in speaking thus strongly; I do not condemn those models of Classic architecture which the old Greeks and Romans erected. In their way they *are* models, but of a defunct style, produced at a great waste and sacrifice of power and labour, and therefore unsatisfactory to the intelligent mind.

And once more. Let me say that the universal feeling which has been displayed of late in favour of the use of Gothic architecture for our churches, is a fair and a satisfactory proof that the hearts of the people have at last been touched by our art. And is it possible that any one can say that the people generally have taken any similar interest, or exhibited any similar feeling of regard, for the reproductions and imitations of classic art? I believe not. And because the one style is indigenous, natural, real, and suitable; the other, foreign, contrary in its construction to natural principles, and unsuited in its effects to English habits, and in its design to our English climate.

I know but one reason for the long predominance of this Classic style, and that is, that men in attempting to imitate Gothic art have copied, and no more; have not adapted it, and used it according to the necessities of the times; and so have raised an unnecessary and baseless prejudice against it, which it is difficult to overcome.

There is, *e. g.* an impression that the use of Pointed architecture involves rooms full of draughts, smoky chimneys, casement-windows, and divers other primitive arrangements. But this is a most narrow and wrong prejudice: for there is, so far as I can see, *no reason whatever* why sash-windows, and all the other comfortable arrangements to which we are accustomed, should be given up in order to produce a building upon the same principles as those of the middle ages, those, namely, of convenience, good construction, and above all, of reality.*

I have said that the associations and the traditions of the place require a Pointed in preference to a Classic building, and so far at least I believe I may reckon upon a general sympathy with my views. At the next step in my argument I fear much that many will halt, for I proceed to endeavour to show that we ought not to have recourse to the style of the fifteenth century in England any more than to the reproductions of the classic styles; and herein I shall, I well know, encounter not only the prejudices of those who in Oxford have learnt most to love the old buildings of that date which so plentifully characterize all the colleges, but at the same time of a large and not so much to be respected class of persons who say that there is something peculiarly fitting in the fifteenth century style to domestic work. That of the fourteenth century they grant is the best for churches; but they have a kind of theory that Gothic architecture in perfection is sacred to church architecture only, and that the style in its decline is all that we may venture upon for domestic buildings; a theory which, carried to its legitimate extent (and by some it is so carried), would refuse to allow the use of the best pointed arches anywhere but in the walls of a church, and would condemn us in our public and private domestic buildings to put up with a style so full of imperfections and faults of the gravest character, that not one person in five hundred ever dreams of its use for ecclesiastical purposes. It is hardly necessary to say that this fancy is very erroneous, and entirely contradicted by the remains of old domestic work

* In a paper read before the Oxford Architectural Society, Feb. 18, 1852, and printed in the "Ecclesiologist" for August, 1852.

* The use of sash-windows can be accomplished without any sacrifice of reality or beauty. Many examples exist (in France and Germany especially) of old Domestic windows in which the place of mullions is supplied by detached shafts. These may be of coloured marbles, and whilst they prevent the weakness of effect always consequent upon large undivided window openings, they admit of the introduction of the best sash window frames behind, and independent of, the stonework necessary to support the upper portions of the window-heads.

of the thirteenth and fourteenth centuries, of which we have, here and abroad, ample remains; and it arises mainly from the fact that in books of "authorities," as they are called, that is, of specimens of Domestic architecture, the illustrations have been very much confined to the latest and poorest period of the art. Mr. Hudson Turner's "History of Domestic Architecture" is rapidly doing its work in showing people how great a mistake this is, and I have full trust that the continuation of this work for the fourteenth century, which Mr. I. H. Parker has undertaken, will enable the unlearned to appreciate in a general way the immense superiority of the earlier over the later style as well in the civil as in the ecclesiastical buildings of the Middle ages. * * * * * *

I dismiss this pretended fitness of the later style, therefore, at once, in the conviction that it cannot be defended or argued for upon any one good ground, and arises merely from want of acquaintance with the earlier work. But those who deem that the associations of the place require an imitation and reproduction of the usual type of old Oxford buildings, must be answered more at length.

Now this line of argument would, I think, very seldom if ever be taken as regards a church. I, at least, never found it so. In Cornwall I am not asked to build in a late, and in Sussex in an early style. On the contrary, men desire a contrast, and in Cornwall I am begged to design something unlike the universal ancient type which by over repetition has become wearisome even to those who do not condemn the style upon principle. And so in Oxford, I confess that there is to my mind already too much of late work, too little of early; and I very deeply regret that an over strict adherence to the tradition of the neighbourhood should have led to the erection of the new buildings at Balliol in the same style, with the same details of gateways, windows, and doors, as in almost all the old work, and in all other new works in the Pointed style. Some thought of John of Balliol, the founder, would have been better shown by an addition in an earlier style than the existing remains of the college.

And now let me take any one who believes in the necessity of Tudor-work in Oxford, in obedience to the force of association, by the arm, and let us, after a loving look cast on the road at St. Mary's spire, go down the narrow way that leads to the brightest architectural gem of which Oxford can boast,—to the college of Walter de Merton,—and I will leave to him to say whether the very small fragments of fourteenth-century work still remaining there—the treasury, the staircase-turret, and the ever-glorious chapel, do not give an idea of an art far more exquisite, far more delicate, and in no respect less practical than the later works which are to be found in the other colleges. I, indeed, constantly hear this work referred to in such a way as proves how little later work could compete with it in its effect on men's minds did but more of it exist to teach them and remind them of its loveliness. And there is, I am bold to say, no one reason which can be given why the architecture of the fourteenth century is the best for ecclesiastical work, which is not at least equally in favour of its application to domestic buildings. In its principles of construction, of ornamentation, of design, it is far better. In the opportunity it affords for development much more ready, and beyond a doubt, much more fascinating in its effect upon men's eyes than later work.

I press then most earnestly upon all who have in any way the decision in this matter the absolute necessity of regarding this question of the choice of a style as one of immense importance; it is not, let me say, a mere question of taste: it is indeed far more than this; no true artist can deem that his art is only of use to please the senses; this would be a low and sordid aim; but it is precisely the extent of the aim which later work always had.

A really noble building has an influence on men's minds of a most stirring nature, and to be really noble it must be very truthful, even in the most minute particulars; it must satisfy the most critical eye in all the details of its ornament, and the most practical eye in all the details of its construction.

And I am assured that false steps made even in such matters as this of the choice of a style, by such a body as the University of Oxford, are of very serious consequence. They tend to stamp its proceedings with a certain air of neglect of such things, as though they were beneath its notice, whilst in truth we well know that they are not, and that its fame for good taste would be always one of the greatest sources of pride to all its members.

In recommending the architecture of the fourteenth century as our best model in all our new works, I am very anxious at the same time to show how far it is possible to make such works as grand and regular as Classic buildings; as really fitted for their intended use as any of the later Pointed styles; and, finally, as convenient and full of necessary accommodation as any purely nineteenth-century buildings. Indeed, I recommend the architecture of this period on account of its principles, which were full of truth and nature, and which contrast forcibly with the false principles of Classic and later Pointed styles. The architects of the fourteenth century used the pointed arch with as much science as any architects we have ever had, and with greater beauty; whilst in all the delicate ornamentation of their work, by which the mind of the artist delights to exhibit itself, they displayed a simplicity and poetry of feeling indeed very marvellous. They took nature as their guide: with her they went into the meadows and the woods and culled all that was most beautiful in colour and in form, and applied it to the use of art. If they carved a figure it was a true reproduction of a living form: not conventionalised so far as to be unlike nature, but just so far as to stereotype, as it were, nature's most perfect mood. In all the minor decorations of their works the same rule obtained. Their stained glass, their pavements, their works in precious metals and in brass, all prove this; and by contrast with earlier and later works the proof becomes more remarkable. I may safely say that whilst there is no one principle of truth practised in the thirteenth or fifteenth centuries which was not also practised in the fourteenth, there were in numberless ways exhibitions of art and truth exhibited in that age which in the earlier and later days were overclouded and obscured by a mass of conventionalism quite destructive of the highest art.

Classic architects attack us as wanting in real, deep, grand, conceptions of art, as loving a poor irregularity for its own sake, and as wanting in feeling to enable us to appreciate the grand and solemn effects of the long lines of columns, or the grand porticoes, of old Greece. We do appreciate them in their own country, and in their own glorious climate, but who ever saw Englishmen really enjoying a portico in England? Who ever saw them basking in the sun and standing under it, save in some two or three of the hottest days in the year? And where is the professor who gathers his disciples around him under its shadow for instruction? And who is there that knows not how entirely, in Greece and Italy, it was convenient and natural that internal grandeur should give way to external, and that the preponderance of the latter should be very marked over the former? whilst, in our cold, dark, and chilling climate, it was natural and fitting that we should at once be taken to the interior of our buildings, and that there the eye should be satisfied with noble and infinite proportions, with rays of light admitted through openings devised with most cunning intricacy of geometrical forms, and roofs framed with exceeding variety of well-devised and beautiful carpentry, or arched with still greater science and skill in stone.

And for the grandeur arising in the heathen temples from regularity and simplicity of parts, I know nothing which can preclude Christian art from claiming the same praise. What are the endless succession of similar compartments in the naves of such cathedrals as Exeter, Wells, Winchester, or York, but illustrations of this? It is a libel upon Christian art to say that she never rises above the irregular and the picturesque. True it is that when necessary she is irregular, and this is a merit of the first order; she never builds anything which is not to have its use; nothing does she for the sake of effect, but everything she does for use, and then she ornaments her useful members. This is the only true practice of a constructive art, and it is herein that Christian art is so much higher and so much more truthful than the revived Classic art. * * * * *

G. E. STREET.

THE PICTURES PURCHASED BY THE ART-UNION OF LONDON.

THE following is a list of some of the principal pictures purchased by the prizeholders in the London Art-union*:—

The City of Syracuse, 250*l*. R.A.—E. Lear. Looking up Loch Etive, from Tainuilt, 150*l*. R.A.—F. R. Lee. Morning North Wales, 100*l*. N.I.—S. R. Percy. Mont Orgueil Castle, Jersey, from the Sea, 100*l*. B.I.—J. Wilson, jun. The Walk to Kremnes, 100*l*. N.W.C.S.—H. Warren. The Village of Bettws-y-coed, 100*l*. N.I.—J. Bell. On the Thames between Reading and Sonning, 94*l*. 10*s*. N.W.C.S.—A. Penley. A Weedy Branch of the Thames, 80*l*. S.B.A.—H. J. Boddington. Sandboys—Scene on Durley Heath, 60*l*. S.B.A.—W. Shayer. A Welsh Farm, 80*l*. B.I.—S. R. Percy. An English Farm, 80*l*. R.A.—J. F. Pasmore. Corfe Castle, Dorsetshire, sunset. 80*l*. R.A.—J. P. Pettit. Llyn-y-gadan, North Wales, 70*l*. S.B.A.—S. R. Percy. Cwm Ogwr, Glamorganshire, 126*l*. S.B.A.—J. Tennant. Hunt the Slipper, 80*l*. S.B.A.—W. Gill. Pompeii, the City of the Dead, 80*l*. W.C.S.—A. Fripp. The Skylark, 80*l*. B.I.—F. C. Underhill. A Christmas Dinner, 80*l*. S.B.A.—T. Clater. Opie reproved by his Mother for Painting his Father's Portrait on Sunday, 60*l*. R.A.—J. Absolon. Delight, 60*l*. B.I.—C. Brocky. "They that carried us away Captive," &c. 52*l*. 10*s*. N.W.C.S.—A. Bouvier. Going to Market, Woking Common, 60*l*. S.B.A.—G. Cole. Off the Dutch Coast, Squally Weather, 63*l*. R.A.—J. Wilson, jun. Brig making for Brixham, Torbay, 31*l*. 10*s*. W.C.S.—J. Callow. Shepherds, 60*l*. R.A.—W. Linnel. The Arrest of Effie Deans, 60*l*. B.I.—Miss McLeod. The Conquering Game, 50*l*. S.B.A.—T. Clater. Glen Shee, from the Devil's Elbow, Aberdeen, looking towards the Spital, 68*l*. 5*s*. W.C.S.—T. W. T. Richardson. Harvest Moon, 50*l*. N.I.—E. Williams, sen. Merry Sunshine, 50*l*. N.I.—J. G. Middleton. Shepherd-boy of the South, 50*l*. R.A.—F. G. Hurlstone. The Road Home, 50*l*. N.W.C.S.—J. H. Mole. The Wearied, 52*l*. 10*s*. R.A.—E. J. Cobbett. Leaving the Hay-fields, on the Banks of the Thames, 50*l*. N.I.—G. A. Williams. A Pebbly Brook, 50*l*. S.B.A.—H. J. Boddington. Dutch Fishing-boat luffing up to Windward, 50*l*. B.I.—T. S. Robins. An Autumn Evening, 50*l*. N.I.—H. B. Willis. New Bridge over the Darurm, Amsterdam, 50*l*. R.A.—F. Dillon. Durham, 52*l*. 10*s*. N.W.C.S.—D. H. McKewan. Landslip near Iny-s-y-buth, Glamorganshire, 45*l*. S.B.A.—J. Tennant. Under the Greenwood Tree, 40*l*. B.I.—W. W. Gosling. Winter, 40*l*. N.I.—G. A. Williams. On the Banks of the Thames, 40*l*. R.A.—H. J. Boddington. The Early Meal, 45*l*. S.B.A.—W. Shayer. Coldingham, on the Berwickshire Coast, 40*l*. R.A.—H. Jutsum. Mountain Torrent, Roiusdal, Norway, 42*l*. 10*s*. S.B.A.—W. West. At Bellagio, on the Lake of Como, 40*l*. R.A.—G. Stanfield. La Vivandière, 42*l*. R.A.—A. Cooper. Glyder Fawr from Llyn Llydaw, 60*l*. N.I.—A. W. Williams. A Rustic Peasant, 40*l*. N.I.—E. J. Cobbett. The Vale of Cwm Ogwr, Sunset, 50*l*. S.B.A.—J. Tennant. Cattle and Figures, 50*l*. S.B.A.—W. Shayer. Naples from near Virgil's Tomb, 40*l*. R.A.—W. Parrott. The Mill Stream, 40*l*. R.A.—H. Jutsum. The Terrace, Haddon Hall, 40*l*. N.I.—A. O. Deacon. Bridge over the Torrent of the Passeyer Bach, at Merar, Tyrol, 40*l*. R.A.—W. Oliver. A Summer's Day, 40*l*. R.A.—J. D. Wingfield. Near Mount Orgueil, Jersey, 40*l*. S.B.A.—A. Clint. Scene in Surrey, looking towards Guildford, 40*l*. S.B.A.—T. Rolfe. Bacchanalian Hunting-cup—Grapes, &c. 40*l*. N.W.C.S.—Mrs. Margetts. Glengariff, Ireland, 55*l*. S.B.A.—G. Shalders. Pandy Mill, N. Wales, 40*l*. S.B.A.—W. West. The Wind freshening. 40*l*. B.I.—S. P. Jackson. At Longstock, in Stockbridge, 42*l*. S. B. A.—G. Cole. The Lattice Window, 40*l*. R.A.—T. F. Marshall. Moel Siabod, N. Wales, 40*l*. B.I.—H. C. Whaite.

MANSEL LACEY NATIONAL SCHOOLS, HEREFORDSHIRE.

THESE schools have lately been erected by the Ven. Archdeacon Lane Freer, the vicar of the parish, on a site presented by Sir Robert Price, Bart. M.P. who also contributed towards their building. The principal room is 62 feet long by 20 feet wide; the second about half these dimensions. They are capable of containing 140 children. The master's house, which adjoins, is not seen in the sketch. Mr. Nicholson, the architect of the Hereford Diocesan Board, was the designer. The cost was something more than 600*l*. of which 170*l*. were granted by the Privy Council, 40*l*. by the National Society, and 30*l*. by the Diocesan Board, the remainder being made up by private means. The material is the rough stone of the country, with Bath stone dressings.

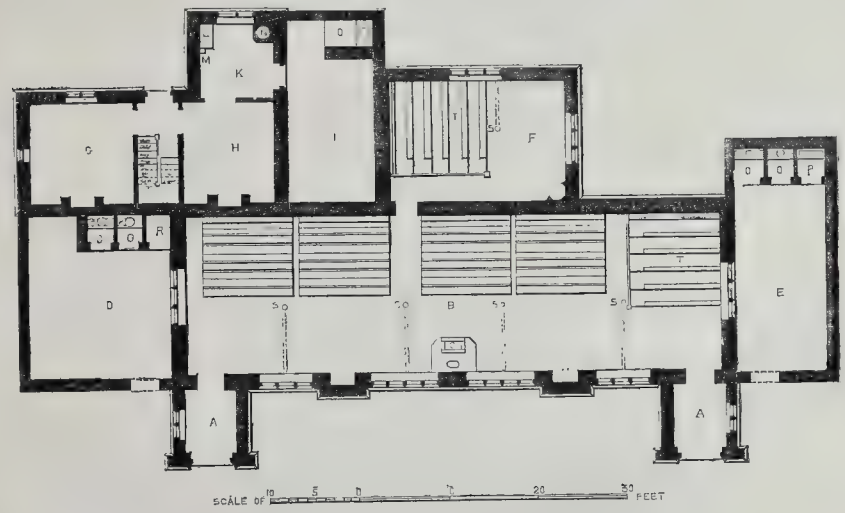
REFERENCES.

A A. Porch.	K. Scullery.
B. School-room.	L. Sink.
C. Desk.	M. Pumps.
D. Girls' yard.	N. Boiler.
E. Boys' yard.	OO. Water-closets.
F. Class-room.	P. Urinal.
G. Parlour.	R. Dust.
H. Kitchen.	S. Ventilators.
I. Master's yard.	T. Galleries.

* R. A.—Royal Academy; B. I.—British Institution; S. B. A. Society of British Artists; N. I.—National Institution; W. C. S. Water Colour Society; N. W. C. S.—New Water Colour Society.

MANSEL LACEY NATIONAL SCHOOLS, HEREFORDSHIRE.—MR. NICHOLSON, ARCHITECT.





PLAN.

A NOTE FROM THE LAKES.

You may, perhaps, like to know that there are two new churches here nearly finished, one at Patterdale, small, but interesting, the other at Ambleside; the first is by Mr. Selwyn, the latter by Mr. Scott. The situation of this is charming. The walls are built of the slaty stone of the district, with Ancaster dressings. The floor is laid with red and black diamond tiles, the pews open, and all the woodwork is of pine, varnished. There is a carved stone pulpit, not yet finished, and carved open woodwork reading-desk. The painted-glass window is good in colouring, but of indifferent drawing, the figures coarse in features; the names beneath, with mediæval Latin inscriptions, are unintelligible to the bulk of the congregation.

In the Patterdale churchyard we found the incumbent, who has been so for fifty-four years. The materials used for this church are similar to those of Ambleside. The tower is placed on the north side, and is very little higher than the church, being, like it, roofed at an acute angle, with green slates. A venerable yew-tree stands in the churchyard, and in the church is a copy of the 1611 edition of the Bible.

During the first ten years of Mr. Thompson's incumbency, there were two years in which he had not a single funeral. The population was at first 250; it has now increased to upwards of 700, mainly owing to the silver-lead mines drawing labourers to the village. The mines yield from 1,200 to 1,500 oz. of silver monthly. Everywhere we have been surprised at the well-to-do look of the people: the smallest cottage is clean, and has a few bright blossoms peeping through its diminutive window-panes. The men and women are well dressed, and evidently well fed, and all walk nimbly, as if time were too precious to waste; and the children are perfect pictures in their clean little clothes and their thick-soled, brass-toed, and brass-buckled shoes. The very opposite of those two pretty lines which Miss Sinclair quotes in one of her books seems to prevail everywhere:—

> "Oh! nothing, like the weary step,
> Betrays the weary heart."

Even a slate-miner's hut had the four little squares of glass tightly and trimly fastened in, and looked as comfortable as such a bleak habitation could.

The slate-quarries are very startling. We saw one crossing the pass to Buttermere to-day, where the immense height and almost perpendicular descent of the mountain-side startled us. Men drag the slates down on sledges; they say it is very heavy work mostly; and in the steep parts the sledges overrun them sometimes, and this miles away from any help, in the event of accident. The carriage-road at the beginning of the ascent rises 100 feet in less than two miles.

Crosthwaite Church has been repaired within ten years, through the munificence of one individual, at an expense of about 2,000*l*. Over the altar he has put a large painted window, made at Newcastle—of course, therefore, by Wailes. There are also two others, presents to the church. A reclining statue of Southey, by Lough, was put up two years since in the church. His grave is outside. There is a peal of six bells, but they seldom ring except on Sunday.

At Keswick there is a church on the hill, built about fourteen years ago, overlooking the lake, and standing in an exquisite situation, with a noble view from the churchyard. The interior is very plain and cold-looking.

I have found so much to say of man's works, that I must spare you and myself an account of the exquisite scenery we have passed through—the boating on the lakes, and the mounting to waterfalls, of which Airey Force is the chief favourite.

ORAS.

GLASS MONUMENT.—Glass will be employed in a thousand ways to which no one dreamt it was applicable a few years ago. The *Literary Gazette* says the Prussians have just resolved to make it serve for public monuments. A column, consisting entirely of glass, placed on a pedestal of Carara marble, and surmounted by a statue of Peace, 6 feet high, by the celebrated sculptor Rauch, is about to be erected in the Garden of the Peace, at Potsdam. The shaft will be ornamented with spiral lines of blue and white.

PROPOSED SCHEME FOR REALIZING GREAT PUBLIC IMPROVEMENTS.

LIVERPOOL.

SOME time since we brought under notice what appeared to us, in some one modification or other, if well-considered and discreetly carried out, a feasible mode of facilitating extensive and important public improvements in towns, in many instances where such improvements had not the least chance otherwise of ever being carried out. The instance on which the idea was based was one which had occurred in Guernsey, where a public market was erected, paid for, and made free of debt, to the satisfaction of all and sundry, without a single penny, we may almost say, being requisite in the outset, and, indeed, without any pecuniary means at all wherewith to realize it. The announcement of such a scheme at once, and naturally, suggests misgivings as to ticklish and hollow speculations, risks and catastrophes of various sorts, and assuredly, as we remarked while calling attention to it, much discretion and stringent regulations would be requisite ere the extension of such a principle could be finally countenanced or encouraged. Nevertheless, we could see no great obstacle, either financial, moral, or prudential, to the very general adoption of it under proper limitations. In the case at Guernsey, the market was built with promissory notes, to be taken up and retired out of the market tolls as they accrued; and they were so taken up, and the whole cost was honestly defrayed; and the market house, a valuable property, yielding a steady yearly revenue, was left entirely freed from debt, and precisely in the way and manner proposed and acted on in the outset. Of course, had there not been a sure prospect of some such revenue, the result might not have been so favourable, but had there only been some substantial public security to fall back upon, considerable risk even on this head might have quite safely been run. Now, it is in some such way that a very extensive series of improvements is proposed to be carried out at Liverpool. A million of money would be requisite, and the proposer, Mr. J. A. Picton, suggests several ways in which the money might be raised,—by rate, of course, amongst others; but the mode he recommends comprises the issue of a sort of circulating medium, in the shape of bills bearing interest, and based on corporate property, or at least a conversion of the bond debt of the corporation into a consolidated stock, combining the advantage of negotiable paper with an investment bearing interest. The example of the adoption of such local bank notes, as we may call them, bearing interest, may be said to have been already set by our present Chancellor of the Exchequer, himself a Liverpool man, in his recent scheme for the readjustment of the national securities, by the conversion of thirty millions of consols into exchequer bonds, bearing interest, and constituting a popular current and unfluctuating security,—a sort of bank notes, in fact, bearing interest.

This is a great question in all its purposes and aspects, and ought to be fully and carefully considered and discussed, with reference to public improvements, in all its possible modifications.

One of the chief objects in view in the proposal of Mr. Picton* is to redeem Liverpool from the inconsistency of palatial grandeur combined with filth and squalidity, and to develop still further, by the improvement of the great arteries of commerce through which the bulk of the traffic is carried, its already gigantic commercial resources. The general principles which he keeps in view are:—"Opening fresh subsidiary or supplementary lines where requisite; providing more direct lines between the different centres of convergence, such as the Town-hall, St. George's-hall, the Landing-stage, &c.; the expansion and improvement of the leading lines of access into the town, from the north, east, and south; the projection of new lines of streets through the densely-peopled and squalid districts, bearing health and salubrity to the abodes of disease, and converting the foulest blot on the town's escutcheon into a means of usefulness and ornament." It is his opinion that the expenditure of a million by the corporation would involve the farther outlay of at least another million in the erection of new buildings along the new lines, and of other tenements to supply the deficiency of those removed. "The outlay of this large sum," as he remarks, "would infuse life and activity into the various building trades; the shopkeepers would feel the advantage in the increased demand for articles of consumption; the mercantile classes would experience the benefit of increased facilities for traffic; the aspect of the town would be improved; strangers would be more and more attracted to the locality. Thus all classes would be benefited, whilst the sacrifice demanded from the ratepayers is very small, and it is quite possible it may never be required."

It is thus the common interest of all classes to well consider, and if possible to carry out, under one form or another, the principle suggested—of making great public improvements practicable and realizable in many instances where, from want of means, they would never be even for a moment dwelt on or considered; and above all, it would be for the interest of the architectural profession and the building trades generally to take an active interest in this question, to agitate it into popular consideration and discussion, and, if possible and advisable, to bring about its general adoption.

Since these remarks were written, a meeting of the inhabitants of Liverpool has been held, on a requisition to the mayor, signed by upwards of 500 of the leading bankers and merchants, and also by tradesmen, shopkeepers, and operatives, in order to consider the necessity of carrying out extensive improvements in the thoroughfares of the town. The meeting was addressed by the mayor, by Mr. Picton, and by various other gentlemen; and appropriate resolutions in favour of the promotion of public improvements were passed with few dissentients, and a committee appointed to report to a future meeting on the subject. Mr. Picton is one of the committee named, and the mayor of the town another.

* "Liverpool Improvements, and how to Accomplish them." By J. A. Picton, F.S.A. Liverpool: Howell, Church-street. 1853.

THE ARCHITECTURAL MUSEUM CONVERSAZIONE.

THE committee of the Architectural Museum, established in Cannon-row, Parliament-street, gave a *conversazione* on Wednesday evening last, which was very numerously attended.

At nine o'clock Earl de Grey took the chair, and said,—I have been called upon rather suddenly to take a part this evening, for which, I am afraid, I am hardly competent. At the same time I have found through life, that where there is a will there is a way. I have the will; I am anxious and willing to promote this institution; and I trust to you to make the way for me. This institution is very little known as yet, and the object of the present meeting is to make it better known. The gentlemen who have asked me here to-night have made some apologies for the rough, the homely, and unseemly place in which we meet; but I have always been of opinion that "rough and ready" was the maxim upon which we ought to act. Our premises may be rough, but our supporters, we trust, will be ready; and if that is the case, depend upon it the homeliness of our place will be no drawback. One of the most important objects here contemplated is not to assist the more educated and qualified persons connected with architecture, but those who work under them; to assist the working man—the man to whom God has given intellectual power, but who has not hitherto had the opportunity of cultivating it. It is to enable men of that class to qualify themselves to carry out in a proper manner the works designed and projected by men of superior skill; it is for the purpose of assisting the working man, who cannot go in his working dress to the museums contained in palaces and marble halls, but who can come to a place like this. I have contributed to this object, as far as the numerous claims upon me will permit, and as one of you I feel that if the industrious working man will take advantage of the means which we are endeavouring to furnish, he may do so more effectually in such a place as this than in a more elaborate and highly-decorated apartment. What we may

call *homely* therefore is *appropriate*. Now, although this society may have been in the contemplation of many men who felt an interest in its object for a long period, it has not been actually in existence much more than a year. Therefore when I see (coming here for the first time) the multitude of specimens around me on every side, I think those who have taken an interest in it have combined industry with interest: it is evident there must have been great goodwill, great zeal, activity, and energy at work. I do not come here merely to ask for your pecuniary contributions, I come here as a real, honest admirer of art in all its branches. I am unworthily, as you know, the president of the Institute of Architects; moreover, I have been my own architect. As the man is a fool who pleads his own cause, he may be supposed to be a fool who builds his own house; I have, however, done so, and am so far identified with the profession of architecture; and I know if a man undertakes such a work how dependent he is upon those who are to carry it out. In my own house I adopted a style which was not then very common in England, and I had extreme difficulty in getting workmen to carry out exactly the views I had formed. I had not such large premises as these (I think they were as handsome); but I did turn all my old stables, washhouses, and laundries into workshops; and I had a great interest in going there daily to superintend what was going on; and I can speak to the difficulty I felt in getting men to execute with taste (I do not want to say it ostentatiously) the objects I had in view. The defects, however, were not the fault of the workman. He, perhaps, had never seen anything of the kind before, and how should he know how to execute it? I was my own commanding officer; I directed the alterations which I wanted; and in a very few weeks men who were utterly ignorant in the earlier stages became conversant with the style, and intelligent in carrying it out, in a more advanced period. That is precisely the object you have to carry out here; and I have the greatest pleasure in being in the slightest degree instrumental in assisting you to do so. The workman may come here in his dusty coat and dirty leather apron, and rummage amongst the specimens without scruple or remorse; and the consequence will be that every architect who employs him, and every principal who employs that architect will, in the end, derive advantage from this institution. I have endeavoured to prove my anxiety for its success by coming here to-night, and, if it does succeed, I can only say I shall be most amply rewarded. I will now call upon Mr. Scott to read a report of what has been done.

Mr. Scott, the treasurer of the institution, then read an interesting report, narrating the origin and progress of the museum, the classification of the different objects it embraced, and particularly acknowledging in detail the valuable donations received from numerous individuals and societies, in this country and on the continent.

The Chairman briefly congratulated the meeting on the prospects of the institution, and urged the great value and importance, not merely of the pecuniary support, but of the casts and specimens which had been presented to the collection. These, it was proposed, should now be duly acknowledged in the form of a vote of thanks to the donors.

The Dean of Ely said, his pleasing task was to propose this vote of thanks to the donors, and it would be a very simple one. All present must be gratified by seeing the extent to which the rooms were filled with useful objects of study; and the importance of those objects for their special purpose—the instruction of masons, carvers, and other artizans—would at once be recognized. The museum already comprised specimens from the best examples in this country, and many from abroad, all arranged in order, and the different styles of each architectural period grouped together. It was most important that the working man, engaged in a work of any particular age or style, should be enabled to study the best examples of that class, and to seize the spirit in which they were executed; and the absence of such facilities had caused many modern buildings to be mere collections of incongruities. Under these circumstances, they were especially indebted to the donors of casts, &c. and not less to the founders of the institution. Though departing from the immediate subject of the resolution, he must be allowed—and, considering the peculiar connection between Mr. Scott and himself, he should be wanting in gratitude to that gentleman if he did not do so—to express publicly his sense of his merits, and his own personal obligations to him for the manner in which he had superintended the works in Ely Cathedral.

Mr. Godwin seconded the resolution. As a member of the Committee he could bear testimony to the desire to aid the society which had been displayed in various parts of the country, and which had led to the formation of what must be acknowledged to be a very remarkable collection in so short a time. Many years ago he had corresponded with the late Marquis of Northampton with a view to the formation of an architectural collection in the British Museum,—wherein, if not the Classic and Byzantine styles, at all events, our own English architecture, from the Norman era to the present time, should be fully illustrated, for the benefit, not only of the workman, but of the general public. Lord Northampton had sought to effect it, but had not succeeded. The examples before the meeting displayed the excellence of ancient art: not one of them was like another,—each had a merit of its own, whilst freedom and elegance, and appreciation of beauty, were apparent in every touch and every line. Now that architects had had enough of copying, and had made up their minds to carry out, so far as they were able, the spirit and the beauty of the ancient styles, it was most essential to have a body of educated workmen; and this museum would aid the endeavours now making to obtain them. Amongst the many specimens in the room, he might call attention to a few,—particularly the sculptures from the altar screen of Winchester Cathedral, and others from Lincoln and Ely; the effigy of queen Eleanor, from Westminster, and others from Hereford; with several panels from the Ghiberti gates, at Florence. These had not been collected without considerable efforts, and he must be allowed to mention especially the exertions of Mr. Bruce Allen, whose extraordinary perseverance—perseverance which had even exposed him to abuse, and which he should hardly venture to imitate, however he might praise it—the institution would not have been in existence.

The Rev. Wm. Scott explained that, except in the possession of, he hoped, a very respectable name, he had nothing in common with his friend the treasurer of the institution, but a kindred love and reverence for art and architecture. He then proceeded to speak with much ability on the value of such a collection, and adverted to the fact that nearly all the specimens at present in the museum were illustrations of Christian art; and it was gratifying to know that of all departments that of Christian art had most largely flourished and expanded of late years, and that especially in this country and in our own Anglican church. As an early member of the Ecclesiological Society he could testify to the increased knowledge of mediæval art, and the great improvements which had taken place in church building.

The resolution having been carried unanimously,

Archdeacon Thorpe also adverted to the importance of the object of the institution, in the improvement of the heart and the mind, through taste, to which the art of architecture was subsidiary. He referred to the apathy of the vulgar mind until stimulated by example—as in the case of the rustic villager, who deemed his ruinous and hideous parish church a miracle of art, but whose taste was gradually kindled by the progress of constructing a more dignified and important edifice in its place. He concluded by moving a vote of thanks to Mr. Scott, the informing and originating spirit of the institution.

The vote was at once carried by acclamation, and briefly acknowledged by Mr. Scott, who disclaimed the title of originator of the society. As one of the committee, he had done his best to promote it, but it had been talked of by many others before he took it up; and Mr. Godwin had especially advocated the object some years ago in print.

Mr. Hardwick, R.A., proposed the thanks of the meeting to Earl de Grey, for his kindness in taking the chair, and for his zealous advocacy of the institution, which must be a great encouragement to the committee in their labours. He fully concurred as to the importance and utility of the museum as a place of practical study for the artizan.

The Rev. Mr. Petit seconded the motion (observing that, without going into any discussion, he must dissent from those who would confine the term Christian art to the Gothic styles), and it was carried by acclamation.

Earl de Grey returned his cordial thanks for the compliment. He would suggest that the institution should not give itself either the character or the repute of encouraging any particular class of art; it was only likely to be of service by being made general. The museum was for the benefit of the workman, and he must apply himself, not to one class of art, but to all, according to the different structures on which he might be employed. The object, therefore, should be to render the best specimens of all periods and styles accessible to him. His lordship then addressed a few words of caution to a class of artisans, who, if they possessed abilities at all above the average degree, were apt to entertain too high a sense of their importance,—an error which could not be better remedied than by extending art-education to workmen generally, so as to render such exceptions rare.

Mr. S. Cundy begged to state that the greater number of the workmen who had yet studied in the museum had been those employed by himself; and although some of them had been entirely uneducated when they commenced their studies, they had already made a very great and marked improvement.

Amongst those who were present, in addition to those who took part in the proceedings, were Messrs. Salvin, J. Clarke, Scoles, Kendal, Hardwick, jun. Edmeston, E. Barry, Parris, C. H. Smith, Cooke, R.A.; Pickersgill, R.A.; W. P. Griffith, Clutton, Bury, H. P. Smith, T. H. Wyatt, Penrose, E. Hall, E. Richardson, Rev. C. Hartshorne, J. H. Parker, Hailstone, Wilks, Henry Hill, J. B. Gardiner, Seddon, A. Poynter, G. Bailey, J. Billing, Plucknett, Myers, Chantrell, Sir Charles Barry (later in the evening), and several ladies.

COMPETITIONS AND COMMITTEES.

BAPTIST METROPOLITAN BUILDING SOCIETY.

The above committee advertise for designs, offer two premiums, do not pledge themselves to employ the author, but the designs receiving premiums to become their property. In case the author is employed, the usual per centage only to be given. Now, leaving these conditions to speak for themselves, we will see in what manner they have been fulfilled. Many designs were sent, probably twenty, some evincing much care and thought and displaying considerable talent; some are spoken of favourably as having "good points;" but a chapel has been built elsewhere for this same society, and was duly reported in the *Builder* a few weeks since, which appears to have given tolerable satisfaction; hence they resolve, if they see nothing better, to reject them all. They come to the work of adjudication, assisted by *one or two builders*, and after two meetings they find no "*best*," and no "*second best*," but quietly tell each competitor, "Your design is not accepted." Before, however, returning the drawings, the "good points," together with the views of the committee were to be explained to the fortunate architect of the chapel above alluded to, into whose hands the work (I believe), is given. If he had merited their confidence, no one objects to that, but that they should advertise and obtain plans, the drawing of which alone (taken collectively) would take any competent draughtsman a year, and, when they have obtained them, to refuse the premiums, is a course of conduct on which there cannot be two opinions. It is a gross *deception* and a shameful *fraud*. A reverend gentleman of their own persuasion says,—"Expose them; warn the profession against such double-dealing cowards and mercenaries." The committee themselves will not attempt to justify it, they merely bless themselves with the idea that numbers and secrecy make them comparatively irresponsible, and that they are not amenable to law; but if this is to be the tone of morality set by men met for avowedly moral purposes,—if this be their motto, "Do right when law treads upon your heels," and where you can, *rob* with *impunity;* surely it is high time some remedy was devised. Such men, instead of having to adjudicate, should be "*tried;*" instead of being on committees, should be "*committed*" as dangerous to society.

Without mutual confidence and honour the whole machinery of commerce is disabled.

Charity urges me to say, that on the part of many of the committee, ignorance rather than injustice has prevailed. They are slow in paying for what they cannot estimate, nor will they value what they cannot appreciate; but this is not the case with all: some there are from whom better things might be expected, and whose names would look sadly "out of place" attached to so mean a transaction.

The remedy you have prescribed again and again, is, "Educate the people,"—this will cure it and nothing else; but it is a slow process, and the practical question is,—what can be done in the *mean time* to alleviate the difficulty?

B. K. C.

Of all the literary compositions with which the press from time to time furnishes the British public, none are more extraordinary than are those specimens of effrontery which occasionally appear in the advertisement pages of the *Builder*, inviting architects to furnish designs for various public and private structures. Lest it should by chance have escaped notice, I beg to be allowed to call the attention of yourself and your readers to a treat of this description, which appears in your number of the 11th instant; wherein an invitation is given to the world at large to submit designs for a Church to be built *in an ecclesiastical style*, with schools and master's residence to correspond; the designs, *accompanied by estimates of the cost*, to be sent in in twelve days' time, and the successful competitor to receive the enormous sum of 10*l.*!—yes, positively, 10*l.*! Hasten, ye knights of the T square, secure the golden prize ere it be too late. Joking apart; the outlay is limited to 2,500*l.* This is in a district where materials are easily procured, and therefore a larger amount of work obtained for the money than in ordinary cases. But, confining myself to 2,500*l.*;—the *lowest* commission which could be fairly offered for designs and estimates, if at all fairly executed, would be 2*l.* per cent. on the outlay, even if certain of being received by the party executing them; but in the case of a risk or contingency existing, something more ought to be offered. But say 2*l.* per cent.; this would give 50*l.* as the lowest value for the required work. One-fifth only of this is offered, with a chance of being the fortunate *speculator* out of perhaps twenty or more.

It is quite evident that no one knowing anything about business could expect a design and estimate in the time allowed; and the slightest consideration must show that 10*l.* would not pay even the expense of drawing, much less designing and estimating for, the buildings.

J. G.

PROVINCIAL NEWS.

Kimbolton.—A new chapel for Dissenters has been opened here at the west part of the town. It will accommodate about 300 persons, and cost about 1,000*l.*

Deddington.—St. James's Chapel, at Clifton, was consecrated in week before last, by the Bishop of Novia Scotia. The building has been erected chiefly at the cost of the Rev. W. C. Risley. It stands near the centre of the village. The site was given by Mr. Joseph Gardner, of Clifton. The building contains free sittings for 160 persons. It is in the early pointed style of Henry III. with English oak furniture of 15th century. Messrs. Buckler and Son are the architects, Mr. R. Franklin and Mr. J. Hopcraft the builders. The oak fittings are varnished. The church is built of stone from Aynhoe, and is covered with slates from Stonesfield. On the summit are two bells. The font is worked in Caen stone, and was cut by Messrs. W. & H. Hopcraft.

Culham.—The Diocesan Training School, at Culham, near Abingdon, intended for the training of parochial schoolmasters, was opened on Monday in last week, by the Bishop of Oxford, in the presence of a large concourse of persons. The school is erected on an eminence, about half a mile from the Abingdon-road station. It consists of a chapel and cloisters, hall, practising school, residence for Principal, domestic offices, school and lecture rooms, with range of dormitories above. The front forms an elongated range, broken and varied by projections, and jutting gables and corners: two wings are returned at right angles behind, the western containing domestic offices, the eastern, lecture-rooms. The predominant style is the Tudor or Perpendicular The number of students to be accommodated is 100. Mr. Clarke, of London, was the architect.

Dorchester.—The old abbey church has been restored, under the superintendence of Mr. T. Butterfield, architect, who has, among other things, raised the eastern gable to its original pitch, renewed the east window (the head of which had been destroyed), and completed the restoration of the chancel, and the north and south aisles. The re-opening took place on Monday week, and was considered to form part of the proceedings connected with the installation of the Chancellor of the University of Oxford.

Southampton.—A Presbyterian church is being erected, according to the *Hampshire Advertiser*, in the East Magdalen's Field, from the design and under the direction of Messrs. Hinves and Bedborough, in the style of the Gothic of thirteenth century. In the interior much progress has been made, and the exterior scaffolding has been taken down. There is about 1,000*l.* yet required to complete all engagements.

Eglwys-fair, St. Clears, Carmarthenshire.—A new church was opened here on 7th inst. by the Bishop of St. Davids. It consists of a nave, transept, and chancel, with a bell-turret at the west end, and affords accommodation for 235 persons, all free. The east window is of stained glass, the gift of the Hon. W. H. Yelverton. The architects were Messrs. Coe and Goodwin; the builder Mr. Thomas, of Tenby.

Birmingham.—The working men of Birmingham have started a proposal for the formation of public parks for recreation. Mr. Joseph Sturge cautions them against supposing that they can carry out such a project themselves. He seems hopeful that they will be aided by the union of all classes in its favour. If any considerable outlay of the golden god of Birmingham be requisite, we rather think that past experience ought to teach the working men of Birmingham that their anticipated park will be up-hill and difficult to reach by the help of the higher classes there, unless, indeed, they are to make it self-supporting and something more.

Wolverhampton.—The west end of the collegiate church of St. Peter is in course of restoration. The parapet of the tower is being removed to admit of the introduction of new stone: the old pinnacles, recently removed, are about to be succeeded by new ones of a more lofty character, designed by Mr. Ewan H. Christian, the architect to the Ecclesiastical Commissioners, under whose superintendence the restoration generally is making progress. The local *Chronicle* is soliciting contributions for the prosecution of this laudable work.

Evershot.—The restored church, which was opened on 1st inst. is in the style of the early part of fifteenth century, built of Forest marble and dressings of Ham Hill stone, the walls being lined internally with Ashlar. It is nearly a square, divided, however, in equal widths of 14 feet, into a nave, and north and south aisles, by arcades of three bays, the north arcade being a portion of the previous church. The roof consists of three spans entirely of oak, and covered with lead, with trusses and timbers wrought and carved, and resting on corbels representing angels. The principal entrance is through a semi-porch on corbels, opening into the south aisle. The church is seated with open oak benches with carved ends and panels. The tower is open to the church, but is screened off by an open parclose of carved oak. The windows are filled with Powell's quarries, and the passages are paved with Maw's plain red and black tiles with Ham stone intersections. The greater portion of the old tower is retained, but the upper portion has been rebuilt from the level of the belfry floor upwards, with the addition of a new west door, windows, angle buttresses, and a clock turret, in which is being placed a new clock by Dent, of London: the clock faces are of mediæval design, gilt and particoloured. The chancel remains in its former state. Mr. Shout, of Yeovil, was the architect, and the builders were Messrs. Chick and Son, of Beaminster. The ornamental hinges, lock-plates, handles, and other ironwork, &c. were executed by a tradesman of the village, Mr. R. Pulman. The total cost of the work will amount to about 2,000*l.* towards which about 1,720*l.* have been raised, much of it from the Jennings family, leaving a deficiency of 280*l.* to be made up. Several photographic views of the church were taken by Mr. J. Eastham, artist, Yeovil.

Whitehaven.—In reference to the error alluded to in our last week's notes as having crept into the calculations on the probable cost of the proposed new workhouse, Mr. Porter, architect, whose designs for the building are before the Poor-law Commissioners, now informs us that the error in question was one as to the levels of the site, which are "materially different from those named in the instructions to architects, the fall being nearly twice as much as the instructions set forth," as appears from the committee's report quoted by our informant, and from which it also appears that this was one of "the reasons which Mr. Porter assigns for his increased estimate of the cost," a reason which "will operate in the case of any other plan which may be adopted." Our informant states that no guarantee has ever been given by him, that the expense would not exceed 5,000*l.*

Liverpool.—It appears that the demand for baths and washhouses here is greatly extending, as will appear from the following comparative statement. At Cornwallis-street the receipts for the last week of May, 1852, were 38*l.* 8s. 6d.; this year they are 47*l.* 3s. 3d. At the Pierhead they were 41*l.* 14s. 2d. last year, against 50*l.* 2s. 2d. this year. At Paul-street, 15*l.* 10s. last year, against 23*l.* 4s. 8d. this year. The wives of the artisans of the town are now found attending the cheap private baths.

Doncaster.—Some weeks back, the corporation, by a majority of one, resolved upon erecting a new race-stand, which was not to exceed a cost of 800*l.* Tenders have been received for building the same, and the lowest and accepted one was that of Messrs. Anelay, who undertake to complete the stand for 790*l.* The present stewards' stand is to be taken down. The new stand is not only to afford accommodation for reporters, trainers, and jockeys, but for a limited number of gentlemen, at a charge of one guinea extra. The building is to be completed by 1st September next.

GEOMETRICAL RELATIONS IN ARCHITECTURE.

Will you allow me, through the medium of your columns, to thank Mr. Penrose for his testimony to the truth of Mr. Hay's revival of Pythagoras? The dimensions which he gives are to me the surest verification of the theory that I could have desired. The minute discrepancies form that very element of practical incertitude, both as to execution and direct measurement, which always prevails in materializing a mathematical calculation under such conditions.

It is time that the scattered computations by which architecture has been analysed—more than enough,—be synthetized into those formulæ, which, as Mrs. Somerville tells us, "are emblematic of omniscience." The young architects of our day feel trembling beneath their feet the ground whence men are about to evoke the great and slumbering corpse of art. Sir, it is food of this kind a reviving poetry demands—

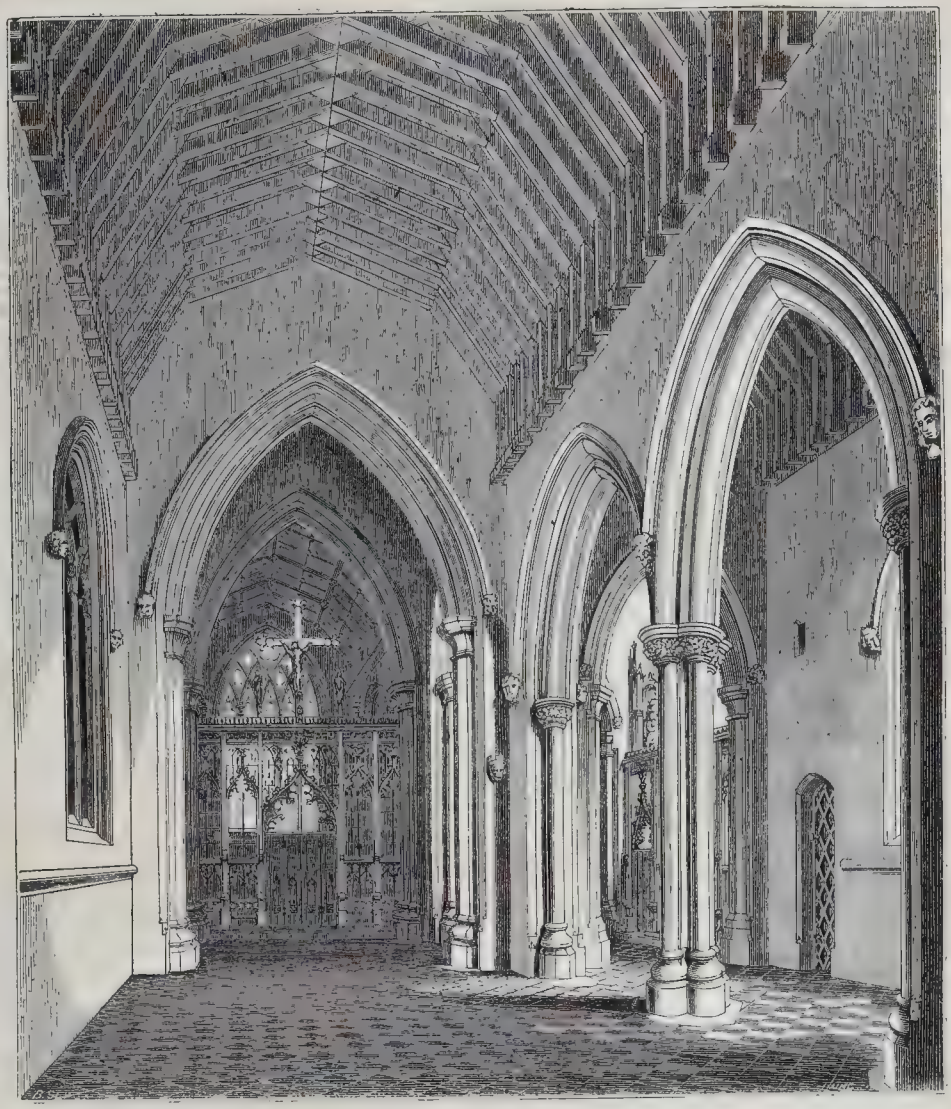
> —— "Give us truths,
> For we are weary of the surfaces,
> And die of inanition."

I, for one, as I listen to such demonstrations, whose scope extends with every research into them, feel as if listening to those words of Pythagoras, which sowed in the mind of Greece the Poetry whose manifestation in Beauty has enchained the world in worship ever since its birth. And I am sure that in such a quarter, and in such thoughts, *we* must look for the first shining of that lamp of art, which even now is prepared to burn.

I know that this all sounds raphsodical; but I know also that until the architect becomes a poet, and not a tradesman, we may look in vain for architecture: and I know that valuable as isolated and detailed investigations are in their proper bearings, yet that such purposes and bearings are to be found in the enunciation of principles sublime as the generalities of "mathematical beauty."

Autocthon.

New York Industrial Exhibition.—An official announcement has been made, that the Exhibition at the Crystal Palace will be opened on the 15th of July.



INTERIOR OF ST. AUGUSTINE'S (R.C.) CHURCH, RAMSGATE.—THE LATE A. W. PUGIN, ARCHITECT.

THE NEW BRIDGE AT WESTMINSTER.

The select committee of the House of Commons have concluded their inquiry on the preamble of the Government Bill to erect a new bridge at Westminster. Judging from the circumstance that Mr. T. Page, engineer, laid before the committee a description of the proposed bridge, we must infer that the recommendation of the select committee recently quoted in our pages as recommending that designs should be obtained by a limited competition, has not been regarded. We are very sorry for it.

IT is to be hoped you will refer to the proposed new Westminster Bridge, which, as a Government job, will, in all probability, be carried out, although most faulty in many respects. The lowness of the water-way (8 feet under that of the other metropolitan bridges) is opposed by the City; the other two prominent objections appear to me to be the using iron instead of granite, which will render it necessary to be painted every two or three years to the great inconvenience of the public, to prevent it falling into ruin, and also the retaining the present narrow, and at times dangerous approaches, especially on the Surrey side. There must be, doubtless, some very strong reason for adopting a plan so unworthy such a site. Does it arise from the false economy which has lately ruined all our public buildings? When a foreigner views, for the first time, Waterloo-bridge, his astonishment at its colossal grandeur is not a little increased when told that it was built at a cost of nearly 2,000,000*l.* by a private company, few of whom ever received more than a very nice engraving for their outlay. What will be his feeling when he sees, a little higher up the river, with a good spring tide the various craft groping their way with difficulty under one erected by the nation leading to the seat of legislature, and far below what so far-famed a locality demands? S. F.

ST. AUGUSTINE'S, RAMSGATE.

WE complete our illustration of the buildings erected at Ramsgate, by the late Mr. Welby Pugin, by giving a view of the interior of the church,* looking east, and showing entrance to the south transept and the rood-screen. The style throughout is Decorated, and most of the details are very good.

METROPOLITAN IMPROVEMENTS.—A Government Bill has just been printed to complete the new street from Spitalfields to Shoreditch, giving extended powers for that purpose.

* See page 376, *ante*; also Vol. X. p. 603.

CAB! CAB!

Having observed some good suggestions in your paper about cabs, which seem likely to be adopted by the new Bill, I venture through the same medium to offer a few hints to the proprietors of those vehicles.

The first is, that by having higher wheels (like the Hansoms and American *four*-wheel carriages), they would *considerably* lessen the draught for a horse; secondly, by bringing the traces more in a horizontal line, they would cause less drag from the collar, which, by the way, should not be screwed aside so unmercifully by the pole, as is now the case; lastly, it is a great question to me whether winkers might not be dispensed with here as in other countries, where an animal, not habituated to them, never wants them; and certainly they gall the poor creatures' eyes most unmercifully.

A Practitioner.

THE GALLERY OF ILLUSTRATION, REGENT STREET.

Messrs. Grieve and Telbin, encouraged by the success which attended their "Overland Mail," have produced a new diorama to illustrate the route of "The Ocean Mail" *viâ* the Cape to India and Australia. It is a work of equal interest and beauty, abounding in admirably-painted scenes and "striking effects." The Eddystone Light, Saloon of Steamer, the Isle of Ascension, Views in St. Helena, the Cape of Good Hope, Sydney, Bathurst Diggings, and Mount Alexander Diggings, are some of the most effective. In the view of Ascension Island a very remarkable representation is given of the peculiar wave which beats in upon the coast here: at the Mauritius, those who have wept over the touching sorrows of the supposititious Paul and Virginia,—and who has not?—will see with pleasure the tombs which an enthusiastic admirer has raised to their memory, quite satisfied that they *must* have lived; and in the closing view of Mount Alexander, some living miniature diggers go through the operations of digging, watering, and cradling, and bring down the curtain with well-deserved applause. Mr. Stocqueler's running commentary is, as it was before, most judicious and entertaining. If this diorama be treated as it deserves, its success will be very great.

Notices of Books.

A Series of Tables of the Area and Circumference of Circles; the Solidity and Superficies of Spheres; the Area and Length of the Diagonal of Squares; and the specific Gravity of Bodies, &c. By Charles Todd, Engineer. Second edition. Longman and Co. London. 1853.

This little work is intended as a facility to engineers, surveyors, architects, mechanics, and artisans in general. It contains what is of some importance in testing its accuracy, an explanation of the author's method of calculating the tables. These may be regarded as correct, since a first edition of the work, which also is dedicated to Mr. Robert Stephenson, C.E. has been exhausted, and a second edition called for.

Bradshaw's Continental Railway Guide and General Handbook; illustrated with Local and other Maps. Special edition. London: Adams, Fleet-street. Paris: Galignani, Rue Vivienne.

Here Bradshaw appears to have done even more for the whole continent of Europe than heretofore for England. So extensive and miscellaneous a body of information, maps, plans, &c. &c. is almost sufficient *per se* to produce experienced and accomplished tourists without any travelling at all. To enlighten our readers within the shortest possible compass as to what this compendium really does contain, perhaps we cannot do better than to state that we cannot see anything relevant or necessary that it does not contain, from passports to commence with, to London hotels to return and end with, after ransacking almost every nook and corner of the continent of Europe. There is an edition with fewer maps and plans, and somewhat less information, for the extraordinary sum of 1s. 6d.; but the special edition is well worth a little more than double the cost, at which it is sold.

Miscellanea.

Drainage of Croydon.—A letter, addressed by Mr. Charles Penfold to the Earl of Carlisle, has been published by Mann, of Cornhill, in which the system of small-pipe drainage adopted at Croydon is denounced and blamed for the numerous cases of fever which have of late occurred there, and another plan is recommended which is not indicated, but which appears to comprise a return to the old cesspool system. It is said that the sewage becomes obstructed in the small pipes, and that there are continual and expensive uncoverings, to a depth sometimes of 20 feet, and on some occasions several times repeated in different places ere the obstruction can be got at or removed; and that the filter-house in which the mains concentrate increases the nuisance. Of course we give this simply as an *ex parte* statement.

English and Foreign Glass Makers.—The free-trade in glass is looked forward to by the British glass-manufacturer as likely to lead to a tough struggle with the foreign manufacture. The import duty on all staple articles in the glass trade is abolished, except on German sheet glass, on which is retained a duty of 2s. 6d. per cwt. for two years, and 1s. 6d. for two years more, after which the article is free. At the expiration of four years it is expected that the art will be naturalised in this country, and be carried on by native workmen. The present duty is 3s. 6d. per cwt. which is equivalent to about 20 per cent. on the value of the article. Even under this charge a considerable importation has taken place, and no doubt the reduction of 1s. will promote further importations. This arrangement of the import duty, however, according to the *Shields Gazette*, is considered satisfactory by the English manufacturers, who have made up their minds manfully to fight their rivals.——Mr. R. W. Swinburne, of Shields, being deputed to communicate with Government on the subject of the new import duties on glass, has had interviews with the Chancellor of the Exchequer, the Secretary of the Treasury, and the authorities of the Customs and Inland Revenue. After much negociation, the import duty on German sheet was fixed at 2s. 6d. per cwt. from 5th July, 1853, to 5th July, 1855, and from 5th July, 1855, to 5th July, 1857, to be 1s. 6d. per cwt. Hitherto the foreign trade has been almost entirely in the hands of the foreigners. In 1852, the Continental makers of window glass exported 30,000 tons. During the same time, this country exported 1,000 tons. Immense quantities of all kinds of glass are constantly landed on the Thames for re-shipment to our own colonies, while the United States and India take their chief supply of foreign plate-glass as well as window-glass from Belgium and France. It is but fair to say, that the continental maker enjoys a large price at home, and the English glass is excluded from his markets.

Lectures on the Unhealthy State of Large Towns.—A report of two lectures by Mr. E. H. Greenhow, at Tynemouth, on the unhealthy condition of large towns, its causes and remedies, and first published in the *Shields Gazette*, has now been issued from the office of that paper in the shape of a little pamphlet, which it might be very useful to widely distribute in order to aid in the formation of that universal public opinion which alone can prepare the way for a complete and radical reform. The state of Tynemouth itself is here shown to be in many parts quite shocking, even to the blunted senses of this age of dirt and overcrowding. Only think of digging little open cesspools near the fire-place in a sitting-room with an earthen floor, in order to collect the soakings from a defective sewer outside! or the production of a smart diarrhœa in a fever and cholera district from the mere attempt to rid it of its unhealthfulness by the removal of its filth!

The Site of Calvary.—A very interesting and learned disquisition "On the True Site of Calvary," appears in the new issue of "The Museum of Classical Antiquities," occupying, indeed, not only the usual part, but a supplement also. Accompanying the paper is a restored plan of the ancient city of Jerusalem, upper and lower, or Zion and Acra, and of the new city of Bezetha. In the first part of the essay the author discusses the views of such writers as Robinson, Williams, Fergusson, &c.; and in the second he developes his own ideas, tracing out the position of the gates and walls of the ancient city in the first place, and thence deducing the probable position of special localities. Golgotha, he conceives, was situate in the valley of Hinnom; and the tomb of Joseph of Arimathæa among the neighbouring rocks. "If it be asked," he adds, "whether there be any indication of the exact locality of the sepulchre, I would say,—search not for it: it is enough for us to know that Christ suffered without the gate: nay, if I were able to point it out, I would rather endeavour to cast a veil over it, to protect it at once from the feet of the superstitious and the hands of the infidel."

Value of Property at Brompton.—The influence of the recent purchase of ground for a new National Gallery, by the Royal Commissioners for the Exhibition of 185[illegible], at Brompton and Kensington, already begins to be felt in the value of other property in the neighbourhood, lately sold by auction. On the 16th inst., fifteen freehold houses in York-place and South Parade, Brompton, and other property, were sold by Mr. Marsh, at the mart, opposite the Bank of England; the particulars of some of which we may here adduce. The freeholds, to be particularized, we may first of all remark, are all let at the ground-rent and redeemed land-tax of 7*l.* 5*s.* 6$\frac{3}{4}$*d.* per annum, on leases to expire at Michaelmas, 1855, when the purchaser will be entitled to the rack-rent also named as estimated at the present letting. Lot six, being No. 7, York-place, with stabling — rack rent 55*l.* per annum, sold for 930*l.* Lot seven, being No. 8, York-place, with stabling—rack rent, 48*l.*, sold for 920*l.* Lot eight, being No. 9, York-place, with large washhouse, &c.—rack rent, 36*l.*, considered a very low rental, sold for 900*l.* Lot nine, being No. 10, York-place, with stabling—rack rent, 55*l.*, sold for 900*l.* Lot ten, being No. 11, York-place—rack rent, 40*l.*, sold for 900*l.* Lot eleven, being No. 12, York-place—rack rent, 45*l.*, sold for 860*l.*

Work and Play.—"I ask again what is happiness? It ain't bein' idle, that's a fact—no idle man or woman was ever happy since the world began. Employment gives both appetite and digestion. Duty makes pleasure doubly sweet by contrast. When the harness is off, if the work ain't too hard, a critter likes to kick up his heels. When pleasure is the business of life, it ceases to be pleasure; and when it's all labour and no play, work like an unstuffed saddle cuts into the very bone. Neither labour nor idleness has a road that leads to happiness; one has no room for the heart, and the other corrupts it. Hard work is the best of the two, for that has at all events sound sleep: the other has restless pillows and onrefreshin' slumbers: one is a misfortune, the other is a curse; and money ain't happiness—that's as clear as mud."—*Sam Slick.*

Improvement of Whitehall and Westminster.—A somewhat startling scheme has been projected for the formation of a "Whitehall and Westminster Improvement Company," with a capital of 600,000*l.* for the purchase of all the ground and buildings between George-street, Westminster, and Downing-street; and between Bridge-street and Richmond-mews, Whitehall; the razing of all the buildings except the Board of Control, and the erection of buildings, streets, and terraces of the first class thereon; with a tidal wall in a line with the terrace of the Houses of Parliament, and the reclamation of about two acres from the river, to be also built on. The property proposed to be purchased extends from the river on the east to St. James's-park and Duke-street on the west. It is mostly encumbered with buildings of the worst description, and in very bad sanitary condition; while in point of situation it is amongst the best in London, being close on the Houses of Parliament and the Government offices. An immense space, it is remarked, is occupied with yards, stables, sheds, and outhouses, so that a much larger number of houses of the first class can be erected on it than of those even now existing. Parliament-street it is proposed to widen and improve while rebuilding it. The improved ground-rents and buildings, it is estimated, will give a large return to the shareholders.

Barnwell Priory Church.—A recent writer says that he was prepared to find a ruinous scene, and was not in the least disappointed; that the church has a very desolate appearance, both internally and externally, while the churchyard exhibits marks of neglect that one could scarcely find a parallel for within a very great distance. The following lines, he adds were copied from the tombstone of John Stewart, who died July 26th, 1772, aged 46 years:—

> "Man's life is like a winter's day,
> Sum only brakefast, and away;
> Others to dinner stay, and are full fed;
> The oldest man but sups and goes to bed.
> Long is his life who lingers out the day;
> Who goes the soonest has the least to pay."

The next was on the head-stone of John Holmes, who died December 6, 1822, and one might almost judge that he was a blacksmith:—

> "My sledge and hammer lie reclined;
> My bellows, too, have lost their wind!
> My fire's extinct, my forge is dead,
> And in the dust my vice is laid;
> My coals are spent, my iron's worn,
> My nails are drove, my work is done."

The writer expresses a hope that the thought awakened by the efforts of the Cambridge Architectural society will not be a transient one, and that the required sum (700*l.*) will be raised for the restoration of the church. The sum of 170*l.* has been already offered, and Mr. R. Reynolds Rowe, architect, has proposed to prepare the necessary designs and specification, and to superintend the restoration gratuitously.

THE ASYLUM FOR IDIOTS.—The first stone of this building has been laid by Prince Albert at Earlswood, near Redhill, Surrey. We do not understand how it is that the competition for plans (of which we gave particulars) has resulted as it has. Perhaps some of our readers can enlighten us.

EXHIBITION AT GHENT.—The Royal Academy of Ghent and her other artistic and literary associations have become amalgamated into one society, under the title of the "Society for the Promotion of the Fine Arts in the City of Ghent." From this fusion, it is expected that the forthcoming exhibition of modern art will prove unusually splendid in this ancient city, now become the "Manchester" of Belgium from the vast establishment of its cotton manufactures. The artists of all countries are invited to exhibit their performances, and for those of the British school who may be disposed to contribute, every expense of packing transit (and return, if unsold) will be guaranteed as in the last year's exhibition at Antwerp. Mr. H. Mogford, F.S.A. honorary member of the society, will afford every information that may be required on the subject; his address is 104, Denbigh-street, Pimlico.

PATENT FIRE-PLUGS.—On Tuesday in last week, judgment was given in the Court of Exchequer, in a case involving the infringement of a patent right. Mr. Bateman, engineer to the Manchester Waterworks, patented some improvements in the construction of fire-plugs, disposed of his right to Messrs. Guest and Chrimes, brassfounders, of Rotherham, who thereupon became the sole manufacturers for England and Scotland. Mr. Gray, brassfounder, of King William-street, City, infringed the patent, and an action was commenced against him, by the patentees, in the Court of Exchequer, which was tried before Baron Martin and a special jury, on the 7th and 8th of February. The defence was, that there had been no infringement, inasmuch as the plaintiff's invention was only a new combination of old materials, of which defendant had also availed himself for the construction of his instrument. The learned judge was in the midst of summing up, when the jury interposed, and said they had agreed upon their verdict, which they thought should be given for the plaintiff—damages, 40s. The Attorney-General tendered a bill of exceptions to his lordship's ruling, and on the 19th of April a rule *nisi* was obtained, on the ground of misdirection on points which turned chiefly on the language and construction of the plaintiff's specification. This was argued on the 7th and 9th inst. The pleas were, "not guilty," a traverse of the novelty, and that the plaintiff was not the inventor. It appeared that the specification was defective, and it was sought on that ground to defeat the patent and the verdict of the jury, which was in favour of the plaintiff. After considering the argument, the Chief Baron gave judgment on Tuesday. The Court was of opinion that it was not now open to the defendant to attack the specification, as there was no plea aimed at it, and so the rule must be discharged—a result at which the Court felt a great satisfaction in arriving, as the patent was for a highly meritorious and useful improvement in fire-plugs, and one which was deserving of protection.

RAISING ROOFS BODILY.—In answer to one of your correspondents of week before last, I annex an extract from an old newspaper of the date, I believe, of 1817, by which he will perceive that the operation he speaks of is one of more antiquity than we think. I am also aware of a very recent instance in which it was attempted, but your columns (a few numbers back) will show with what indifferent success. I refer to the warehouse in Queen-street, Cheapside. The roof was in process of being raised (not by hydraulic force, as in the instance recorded in the inclosed extract, but) by the ordinary screw-jack, and the failure of one produced very disastrous consequences. * * *

"*Improvement in Building.*"—A cotton-mill, 30 yards long by 10 yards wide, situate at Goit Stock, near Bingley, the property of Mr. J. G. Horsfall, of that place, has within a fortnight been raised a story, by the application of the hydraulic press, without disturbing the roof or displacing any of the machinery. This operation is performed by placing the pump under the rafters in succession, and working the piston, when the roof is seen to rise about 8 inches at a time, and stones of the requisite dimensions are introduced in succession, till a course of stone is placed all round the mill; the pump is then again applied in the same manner as before, and other stones placed, till at length the story is completed, and the additional room gained without affecting the stability of the edifice. The saving of the expense by this mode of elevating a building is considerable, and in the present case it is estimated at from 80*l.* to 90*l.* Our correspondent, who is highly respectable, adds that the weight of the roof and timbers could not be less than eighty tons, that the room gained is 10 feet high, and that not a single slate has been broken.—*Leeds Mercury.*"

HINTS TO DEALERS IN MATERIALS.—I am much surprised to find so few persons under the above calling locating where they might carry on thriving trades, I mean where allotments of ground hourly call for such materials. I am the possessor of *three* plots of ground at East Moulsey, Surrey, and I am unable to erect any summer-house or even to fence in my ground unless I send the materials from London, a distance of more than twelve miles, and of course at a very great expense, and which I cannot afford; so therefore the ground to me is like so much waste. It will be borne in mind that I am only one in thousands similarly situated; and were a few enterprising persons of the above calling to make it their business to trace the various allotments of the various *freehold* societies by the maps issued at their various offices, they would thereby discover that their aid is much required, and they would find a ready market, and be amply repaid for their trouble in the way of their trade.—A SURREY FREEHOLDER.

NEW PLASTIC MATERIAL.—Five parts of mixed whiting are mixed with a solution of one part of glue. When the whiting is worked up into a paste with the glue, a proportionate quantity of Venetian turpentine is added to it, by which the brittleness of the paste is destroyed. In order to prevent its clinging to the hands whilst the Venetian turpentine is being worked into the paste, a small quantity of linseed oil is added from time to time. The mass may also be coloured by kneading in any colour that may be desired. It may be pressed into shapes, and used for the production of *bas-reliefs* and other figures, such as animals, &c. It may also be worked by hand into models, during which operation the hands must be rubbed with linseed oil; the mass must also be kept warm during the process. When it cools and dries, which takes place in a few hours, it becomes as hard as stone, and may then be employed for the multiplication of these forms.—Prof. Purkinje: *Gewerbebl. aus Wurtemb.* 1852, p. 45.

THE IRON TRADE.—It is now admitted by trade papers that iron has already been sold at 30s. a ton below the nominal rates of the current quarter. In respect to the question of reducing wages along with prices in the ensuing quarter, a Birmingham paper says:—"Some parties are talking of interfering with the present high rate of wages, but they will find this a difficult matter while labour generally is in great request. Ironmasters should have considered this when they were raising the price of iron so fast."

GAS-LIGHTING.—In a lecture lately delivered by Mr. Frankland, of Manchester, at the Royal Institution here, he gave the following as the results of his investigations as to the comparative purity of different descriptions of artificial light:—

Quantity of carbonic acid and heat generated per hour, by various sources of light, equal to twenty sperm candles:—

	Carbonic acid. Cubic feet.	Heat.
Tallow	10·1	100
Wax Spermaceti	8·3	82
Sperm oil (Carcel's lamp)	6·4	63
London gasses (coal)	5·0	47
Manchester gas	4·0	32
London gas (cannel)	3·0	32
Boghead hydro-carbon gas	2·6	19
Lesmahago hydro-carbon gas	2·5	19

The two objections most frequently advanced against the use of gas in dwelling-houses, he added, are the deterioration of the air by the production of carbonic acid, and the evolution of so much heat as to render the atmosphere oppressively hot. It will be seen from the comparison exhibited, he remarks, that in these respects even the worst descriptions of gas are for equal amount of light, superior to all other illuminating materials; whilst with the better descriptions of gas, three or four times the amount of light may be employed with no greater atmospheric deterioration.——Mr. John Ayliffe, jun. of Moscow, has communicated to the *Mechanics' Magazine* a description of the apparatus for making gas from wood or peat, which he states is much cheaper than that from coals, not injurious to health, the retorts last much longer, six times the quantity of gas can be made in the same time, and as it requires no purifying, will prove of much importance where wood or turf is plentiful, and coals and lime scarce. The retorts are fixed in the usual manner, the ascending pipes from them dipping into the hydraulic main; but instead of being carried off at one end to the purifiers, a pipe passes downwards from it into a hollow sphere fixed in the bed of the furnace, and kept at a temperature indicated by a dark red heat. The gas passes through this ball intensely heated into a naphtha chamber in the basement of the works, by means of a pipe dipping into a cup in the centre, the outer casing serving as a receiving-box for the refuse. There is also another box, in which is an inverted bell-shaped receiver, in which the gas is well washed with naphtha, or coal-tar, and six per cent. of turpentine, from whence it is passed to the condenser and stored for use, requiring no purification.

AMERICAN SCRAPS.—The exhibition of the statue of De Witt Clinton, by the sculptor, H. K. Brown, in the Park, before the steps of the City Hall, says one of the New York literary journals, is an event of the week. The statue, of colossal size, in bronze, is executed for Greenwood Cemetery. The figure is something more than ten feet high, on a base of eight feet and a half. The costume is modern, shielded by a cloak. The figure appears somewhat meagre in the extremities. The bas-reliefs which ornament the base represent the commencement and progress of the great Erie Canal surveys, and the work in its present state.——By the new Electro-telegraphic Fire Alarum, at Boston, in use during the last year, it has been found that the number of false and expensive alarms have been greatly reduced. During the last year of the old department the number of false alarms was seventy-three. Last year there were only *ten*. Each alarm costs the authorities full 100 dollars. The alarum, as we have before intimated, was invented by Dr. W. F. Channing. By a new magnetic apparatus,—working water-power in a street main, and connected with the alarum which rings one of the church bells,—the weight which works the alarum is now also wound up after a few alarms have let it down.

NEW CHURCH AT ISLEWORTH.—The Duke of Northumberland has given 2,000*l.* towards building a new church in this populous parish. His grace has also offered an eligible site.

DRAINAGE AROUND THE METROPOLIS.—In his reply to a question in the House of Commons put by Mr. C. S. Butler last week, Lord Palmerston stated that a bill proposed by the Metropolitan Sewers Commissioners for enabling them to raise an adequate sum for the proper drainage of the metropolis by mortgage on the rates was now under consideration, and if he brought it in he trusted it would receive support. With regard to the particular question put to him, he thought that if good sewers could not be procured, it was better to have open gutters than the cesspools, recommended to the Sydenham deputation lately at Greek-street.

SCAFFOLD FOR ST. MARY'S CHURCH TOWER, TAUNTON.—Tenders were publicly advertised for by the churchwardens of the parish of St. Mary Magdalene, for erecting framed scaffolding round this Tower. Accordingly, two builders sent in tenders for the same, but for some reason or other, the churchwardens (after having notified in their advertisements that no tender would be received after the 8th) request another builder to estimate for the work, and on the 13th, his tender is received, when the three are opened, but to every person's astonishment the churchwardens accept not only the highest tender, but the one which was delivered five days after the appointed time:—

Davis (accepted)	£664	0	0
Shewbrooks	652	0	0
Tooze	647	0	0

What can be said of such conduct?—FLEWKER.

TENDERS

For Building Two Pair of Villas, near the Victoria Park. Mr. Wm. Dobson, architect.

Cobham	£4,874	0	0
Hedges	4,562	0	0
Hill	4,166	0	0
Perry	4,077	0	0
Norris	4,040	0	0

For the Erection of Offices in Throgmorton-street, for Messrs. James Capel, Norbury, Trotter, and Co. Mr. John J. Cole, architect.

Grimsdell	£12,370	0	0
Wilkinson	12,177	0	0
Ashby and Horner	12,070	0	0
Cubitt	11,900	0	0
Lee	11,900	0	0

Messrs. Hy. Lee and Son withdrew in favour of Messrs. W. Cubitt and Co. on account of the latter having other works in hand adjoining these proposed. Quantities taken out by Mr. Gritten.

TO CORRESPONDENTS.

"*Maulstick.*"—Our estimable correspondent is quite right in looking to Germany for the origin of this word. The term *mahlen stock* gives there at once the *meaning* of the word, which is more than our English adaptation of it does.

"W. J. W." "E. W. C." "R. and Co." "J. D." "G. H." "A. C. B." "J. B. and W. A." "J. A." (perforated bricks were in use long before 1845), "Praxiteles Pumicestone," "M. D." "J. C." "Country Subscriber" (write to the patentee), "A. B." (should send his name. The statement must surely be exaggerated), "O. H." "E. S." "C. T. G." "G. B." "E. U" "R. D." "J. H." "R. H. P." (all right. Send particulars), "C. R. C." "J. C." "C. H." "T. B." "A. C." "R. G. W." "R. D." "T. E." (under our mark), "M." (ditto).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

SALES BY AUCTION.

Votes for the counties of Essex, Kent, Middlesex, Surrey, and Herts, Freehold Building Land, in small allotments, tithe-free, and land-tax redeemed.

MR. ACOCKS will SELL by AUCTION, at GARRAWAY'S, on MONDAY, JUNE 27, at TWELVE for ONE, several FREEHOLD ALLOTMENTS, situate at Muswell-hill and Uxbridge, Middlesex; Godalming, Teddington, and Anerley, Surrey. Also a Freehold Rent-charge of 50s. per annum, at Poplar. (One property.)—Particulars and conditions of sale may be had at the principal Inns in the localities of the respective estates; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

Votes for the counties of Kent, Middlesex, Surrey, and Herts.—Freehold Building Land, in small allotments, tithe free, and land-tax redeemed.

MR. ACOCKS will SELL by AUCTION, at GARRAWAY'S, on MONDAY, JUNE 27, at TWELVE for ONE, several FREEHOLD ALLOTMENTS, situate at Muswell-hill and Uxbridge, Middlesex; Godalming, Teddington, and Anerley, Surrey. Also a Freehold Rent-charge of 42s. per annum, at Poplar. (One property.)—Particulars and conditions of sale may be had at the principal Inns in the localities of the respective estates; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

No. 28, MILTON-STREET, DORSET-SQUARE. — Leasehold Residence, for investment or occupation.

MR. ACOCKS will SELL by AUCTION, at GARRAWAY'S, on MONDAY, JUNE 27, at TWELVE for ONE precisely, a desirable long LEASEHOLD RESIDENCE, eligibly situate as above, containing ten rooms, in perfect repair, and fitted up with every convenience for a family of respectability; held for a term whereof fifty-eight years are unexpired, at a ground-rent.—May be viewed, and particulars had on the premises; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

ST. LEONARD'S-ROAD, BROMLEY, MIDDLESEX.—Small Leasehold Investments.

MR. ACOCKS will SELL by AUCTION, at GARRAWAY'S, on MONDAY, JUNE 27, at TWELVE for ONE, THREE substantially built four-roomed HOUSES, with kitchens, situate and being Nos. 7, 8, and 9, on the north side of Cobden-street, St. Leonard's-road, Bromley, Middlesex, now let, and producing a rental of 39l. 17s. per annum. Also a pair of carcases contiguous to the above.—May be viewed, and particulars had at Foresters' Arms, near the property; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

UPPER KENNINGTON-LANE, SURREY.—Small Leasehold Investment.

MR. ACOCKS will SELL by AUCTION, at Garraway's, on MONDAY, JUNE 27, at TWELVE for ONE, Two Leasehold private RESIDENCES, one a corner house, with side entrance and premises in the rear, situate and being Nos. 8 and 9, Wynyard-terrace, Esher-street, Kennington. They are both in excellent repair, and now let at rents amounting to 56l. per annum. Possession of No. 9 may be had.—Viewed by permission of the tenants, and particulars had of R. ARMS, Esq. 1, Belmont-terrace, Wandsworth-road; on the Premises; at Garraway's; and of the Auctioneer, 26, Upper Albany-street, Regent's-park.

BENHOLD, BEDFORDSHIRE.—Howbury Estate.—63 Oak, 289 Elm and Ash Timber Trees, about 850 Willow and Fir Trees and Spires, also a quantity of Oak Lop and Firewood, TO BE SOLD BY AUCTION, by

J. USHER, on MONDAY, the 4th day of JULY, 1853. The company are requested to meet on Renhold-bridge, near the Brickyard, at TEN o'clock, punctually. Luncheon will be provided in the course of the sale. Six months' credit will be given on all accounts above 2l. on approved joint note-of-hand security, a deposit being paid the sale day. The timber is of useful dimensions; the oaks, from one end of good length, are felled and numbered, and surrounded by excellent roads.—Catalogues may be had seven days prior to the sale, at the Swan Inn, Bigglesmade; Crane Inn, St. Neots; and of JOHN USHER, Architect and Surveyor, St. Peter's Green, Bedford.

STRATFORD, ESSEX.—Freehold Ground-rents, Building-ground, Nursery, and Accommodation-lands.—TO BE SOLD, pursuant to a Decree of the High Court of Chancery, made in the cause of "Roberts *v.* Henniker," with the approbation of Joseph Humphry, esq. one of the Masters of the said Court, by

MESSRS. COBB, at the AUCTION MART, London, on WEDNESDAY, the 20th day of JULY, 1853, at TWELVE o'clock, in lots, further parts of the ESTATES of the late Sir A. B. Henniker, bart. at Stratford, in the parish of West Ham, Essex, consisting of freehold ground-rents, amounting to 272l. 14s. per annum, together with parts of "The Cheshunt Estate" adjoining the Eastern Counties Railway Station and Company's Factories, and abutting on the Leyton and Leytonstone roads, consisting of numerous lots for building purposes, and very valuable nursery-grounds and accommodation-land, with a substratum of excellent gravel.—Particulars, with plans, may be had at the Master's Offices, Southampton-buildings; at the Swan Inn, Stratford; at the Mart; of Messrs. J. H. and G. LAKE, Solicitors, 20, Lincoln's-inn; of F. J. TUCKER, Esq. Solicitor, Raymond-buildings, Gray's-inn; and of Messrs. COBB, Surveyors and Land Agents, 13, Lincoln's-inn-fields, London.

Long Leasehold.—City side of the Green Man Gate, Old Kent-road

MR. C. F. SMYRK will have the honour to SUBMIT to AUCTION, at the MART, near the Bank of England, on TUESDAY, June 28th, at TWELVE, in Eleven Lots, at moderate ground-rents, the HOUSE and SHOP, No. 4, Brook Terrace. Nine Houses with Shops, in the York-road, and one Private Dwelling with Carriage entrance, and covered way, in the Mina Road, adjoining. They are all let on repairing leases or agreements for repairing leases, the house No. 4, Brook Terrace, at 50l. Nine Houses at 24l. each and one other at 28l., also, improved Ground-rents, producing in all 227l. per annum.—Particulars may now be had at the Mart, or of the Solicitors, S. W. JOHNSON, Esq. 5, Gray's-Inn-square; F. SCHULTZ, Esq. 4, Dyers Buildings, Holborn; Bridge House Hotel, London-bridge; or forwarded on application to the Auctioneer, Guildford.

CITY IMPROVEMENTS.—Building Materials of Four large Houses, Fenchurch-street, to be taken down for the purpose of widening the street.

PULLEN and SON respectfully announce that they will SELL by AUCTION, on the PREMISES, on WEDNESDAY, JUNE 29, and following day, at TWELVE for ONE precisely, by order of the Committee of the Corporation of the City of London for letting the City's lands, the whole of the capital BUILDING MATERIALS of Four spacious Houses, Nos. 56, 57, and 59, Fenchurch-street, forming the division between Mark-lane and London-street, comprising about 250,000 excellent stock bricks, several tons of lead, pair and pan tiles, prime timber, and a great variety of useful materials and modern fittings-up of a superior description.—May be viewed the day previous, and catalogues had at the Architect's Office, Guildhall; and of PULLEN and SON, 59, Fore-street, Cripplegate.

THE PAGE-GREEN ESTATE, TOTTENHAM, 210 yards from the Station.—Twenty Acres of very eligible Freehold Building Land.

MR. MARMADUKE MATTHEWS begs to announce he will submit this important PROPERTY to PUBLIC COMPETITION, at the MART, on WEDNESDAY, JUNE 29, in lots, unless in the meantime disposed of by private treaty, and begs to invite the attention of land speculators to its peculiar eligibility for building purposes. The drainage and roads are being constructed at considerable cost to the proprietors under the immediate superintendence (by permission) of JAMES PILBROW, Esq. Engineer to the Local Board of Health, and are now nearly completed.—Particulars and plans are now ready, and may be had at most of the inns in the neighbourhood; and at Mr. MATTHEW'S Offices, 1, Frederick's-place, Old Jewry.

TO BUILDERS, PAINTERS, AND OTHERS.

MR. GEO. RICHARDS will SELL by AUCTION, at his GREAT ROOM, 43, Rathbone-place, on TUESDAY, 28th JUNE, at Six o'clock, 154 dozen SASH TOOLS, twenty-three 7-inch sc*o* dusters, copper-bound; twenty-one plasterers' brushes, copper-bound; and twenty-six varnish brushes, copper-bound; together with neat household furniture, an antique oak carvings, &c.—On view and catalogues to be had.

CAPITAL INVESTMENT.—CHELSEA. TO BE SOLD, FOUR desirable LEASEHOLD HOUSES, held for an unexpired term of about 90 years, in a rapidly improving neighbourhood, at a very low ground-rent. The whole are let to respectable tenants, at 23l. per annum for each house.—For further particulars, apply to Mr. EDWARD SALTER, Surveyor, 10, The Grove, Hammersmith.

HENDON.—TO BE SOLD, valuable FREEHOLD PROPERTY, consisting of several well-built semi-detached villas, with large gardens, commanding a fine view of the surrounding country.—For plans, particulars, and terms, apply to Mr. EDWARD SALTER, Surveyor, 10, The Grove, Hammersmith.

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TO BUILDERS.

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21st June, 1853.

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6	by	4		12	by	10		14	by	11		16½	by	12½		18	by	13		18	by	14	
6½	"	4½		12½	"	10½		14½	"	11½		17	"	13		18½	"	13½		18½	"	14½	
7	"	5	13s. 7d.	13	"	10		15	"	11		17½	"	13½		19	"	13		19	"	15	
7½	"	5½		13½	"	10½		15½	"	11½		18	"	13		19½	"	13½		19½	"	14½	
8	"	6		14	"	10		16	"	11		18½	"	13½		20	"	13		20	"	14	
8½	"	6½		14½	"	10½		16½	"	11½		19	"	13		20½	"	13½		20½	"	14½	
9	"	7		15	"	10	18s.	17	"	11	19s.	16½	"	13½	19s.	21	"	13	19s.	21	"	14	19s.
9½	"	7½		15½	"	10½		17½	"	11½		20	"	13		20½	"	13½		21½	"	14½	
10	"	8	16s. 3d.	16	"	10		14	"	12		20½	"	13½		22	"	13		22	"	14	
10½	"	8½		16½	"	10½		14½	"	12½		16	"	13		16	"	14		22½	"	14½	
11	"	9		17	"	10		15	"	12		16½	"	13½		16½	"	14½		23	"	14	
11½	"	9½		17½	"	10½		15½	"	12½		17	"	13		17	"	14		23½	"	14½	
12	"	9		18	"	11		16	"	12		17½	"	13½		17½	"	14½		24	"	15	
12½	"	9½		18½	"	11½																	

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THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no skill to mix. Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster; and Seel-street, Liverpool.

PARIAN CEMENT for internal use, to obtain PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well known hard stuccoes dry quickly, and can be painted upon within a few days. Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

BANGOR WHARF, King's-road-bridge, Camden-town.—STRINGFIELD and COOPER, late W. W. Rawlins, beg to call the attention of builders and others to their stock of Bangor slates, laths, plaster, Roman, Portland, and Keene's cement, blue lias, Dorkin-, and chalk lime, plasterers' hair, Yorkshire plain, oak, and ridge tiles, glazed sewer pipes, closet-pans and traps, Welsh fire bricks, sand and shells for garden paths, ballast, sand, &c. Materials landed, wharfed, and carted.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL. Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Lath, Slates, and Slate Slabs, Fire-bricks Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

TO CONTRACTORS AND OTHERS.

WILLIAM PETERS (late Poynder and Medlicott), 7, North Wharf, Paddington, and Wouldham Hall, Grey Stone Lime works, on the Medway, near Rochester, begs to inform all large consumers of Grey Stone Lime, he can supply them upon the most advantageous terms, in quantities of not less than 50 or 100 cubic yards, per barge, alongside any wharf in London or elsewhere.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf Paddington.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and Co. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other.—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be coloured or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Patentees, PHILLIP HARE and CO. at the Warehouse, 23, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

JOHN HERBERT and SON, MODELLERS and ORNAMENTAL PLASTERERS, 43, Parker-street, Drury-lane.

Ornament in terra cotta and the various cements.

Cast-work on the new principle of casting, undercut or relieved like carving. Architects waited on with specimens.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 800 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to an extent of 300 miles resulting from a close investigation of its merits recently made by some eminent French Engineers.

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 25, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained, on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,

12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

TESTIMONIALS.

"Brighton, Croydon, and Dover Railways,
Locomotive Department, New Cross, Sept. 23, 1845.

"SIR,—In reply to yours respecting the 'Patent Protoxide Paint,' I have much pleasure in stating that what has been used in this establishment has been highly approved of, and I consider it the best description of paint yet used, particularly for iron-work, for which purpose I can strongly recommend it.

"I am, Sir, your obedient servant,
"DENJ. CUBITT."

"Regent's Canal Iron Works, Eagle-wharf-road, Dec. 5, 1845.

"SIR,—As it is always my wish to render justice to every one, as far as it is in my power to do, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint;' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will, moreover, use it for all my own work, and wish I had known it somewhat earlier.

"I am, Sir, yours respectfully,
"HENRY GRISSELL,
"Pro H. and M. D. Grissell.

"P.S.—It must be good for Boilers."

"St. Day, near Redruth, Cornwall, 7th April, 1848.

"SIR,—We have used your 'Patent Metallic Protoxide Paint' extensively about various parts of machinery with great advantage. We find it prevents oxidation, and stands any ordinary heat without being the least blistered or injured. About two years since we painted with it the interior and exterior of some steam-boilers and steam-tubes, and they still remain in the most perfect state, and we consider it of great value for all iron-work.

"HOCKIN and LOAM, Engineers."

THE LIBRARY of ART and MANUFACTURES of the Department of Science and Art, at Marlborough-house, Pall-mall, containing Books, Prints, and Drawings, in relation to all kinds of Ornamental Work, is NOW OPEN daily, from TEN in the morning until NINE at night, except Saturday night. Admission, for the week, 6d.; for the month, 1s. 6d.; for the year, 10s. 6d. For further information, application should be made to the Librarian.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, for painting all greenish vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 1lbs. and 21s. each.

DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 10s.; and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price; only 2s. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 28s. per cwt. or 4s. per stone.

G. BELL and CO. Steam Mills, 2, Wellington-street, Goswell-street, London.

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.

HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,

Sole Manufacturers in the United Kingdom,

Now supply this innocuous substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).

In 14lb. Kegs, and upwards, from the Depôts of their respective Agents:—

LIVERPOOL.—{Mr. T. BROUGH, South John-street.
DUBLIN.—R. SUMNER and CO. Lord-street.
IPSWICH.—RIDLEY and DEWSDALE.
IRELAND.—P. REILLY and SONS, 15, Cope-street, Dublin.

ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate of colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent Painters, and Analyses properly for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard-street, London.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. SMITH, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innocuous and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINCOXIDES, dry or ground in oil, are sold with the VM mark.—In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. T. B. MORLEY and CO.; and by the Company's Grinding Agents. In London, Messrs. CHARLES DEANE and CO., wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 8, Tottenham-court, New-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO. of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 28, and 32 lbs. and upwards to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, by its coolness hitherto restricted to the use of the artist, is now offered at a less price than the ordinary White Lead. Healthful to the painter and to the occupants of newly-painted rooms, it is permanent for ages, unaffected by vapour from cesspools, or the most noxious gases.

The price per hundred weight is now less than the price of the best White Lead, whilst two hundred weight of this Paint, with seven gallons of oil and turpentine, covers as much surface as three hundred weight of White Lead and twelve gallons of oil and turpentine. It is, therefore, cheaper in the first instance, as well as double on every other consideration. To a contractor for extensive works taken at competition prices this is important. The saving on the paint is twenty-five per cent. whilst on the oil and turpentine it is equally great.

For painting both the interior and exterior of buildings, and for all ornamental, decorative, and sanitary purposes, HUBBUCK'S PATENT WHITE ZINC PAINT has proved to be superior to every other paint known, and equally adapted for all climates.

A circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour and Varnish Manufacturers, Upper East Smithfield, London opposite the London Docks).

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent of thereabouts of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead suitable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more effective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the quick delicate of colours, and Leather-Dressers, the Oxichlor de is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS

LONDON	Messrs. Blundell, Spence, and Co. 8, Upper Thames-street.
	Mr Richd Cooke, 7, Size-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Dougall.
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr John Silmshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority for all floor-boards generally sold being sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

By Her Majesty's / Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. J. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

MUIR'S PATENT / PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge. Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

THE LONDON PARQUETRY now manufacture—

1. PARQUET PANELS, from 1s. 6d. per square foot.
2. PARQUET BORDERS, in geometrical and spiral designs, from 2s. 6d. per square foot.
3. PARQUET BORDERS (Veneered) on a new system, fixed in or upon ready-made floors, from 1s. per square foot.

N.B. 1 and 2, if Water and Fire Proof, 3d per square foot extra.

Applications from Architects will be promptly attended to by The London Parquetry, 3, Whitefriars-street.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present month:—

¾-inch yellow or white, 13s. to 14s. 6d. per square.
1-inch do. 16s. 6d. to 18s.
Battens, 2s.; Deals, 3s. 6d.; and plank, from 4s. 6d. per 12 feet; timber, from 7s. 6d. per load; and every kind of English and foreign wood direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Lower-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

	Per square.		Per square.
¾ inch yellow	14s. 6d.	¾ inch white	13s. 0d.
¾ " "	16 0	¾ " "	15 6
" "	18 6	1 " "	17 0

2½ per cent. discount off amounts exceeding twenty pounds.
ARCHBUTT and ATKINSON, St. Pancras Saw-mills, Cambridge-street, Old St. Pancras-road.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS,

Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber and deals, &c. cut any amount, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

TIMBER PRESERVING COMPANY.—This Company are prepared to enter into CONTRACTS for creosoting, or otherwise preserving sleepers and other timber in any part of the country. Their present station affords great facilities, and they will erect other stations when required for a sufficient amount of work.—Apply to E. LODER, Esq.; or J. N. WARREN, Esq. 50, King William-street, London-bridge.

PADDINGTON SAWING, PLANING, and MOULDING MILLS, 3, Irongate Wharf, Praed-street, Edgware-road, near the Great Western Railway Station, and abutting on the Grand Junction and Regent's Canals, affording the advantage of railway and water carriage.

W. R. FRY and SON beg to call attention to their large and well-seasoned stock of FLOORING BOARDS, MATCHED BOARDING and MOULDINGS of every description prepared in a superior manner, from the best goods.

W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive mills afford convenience to purchasers for immediate conversion of their goods, on the most moderate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded, post-free, on application.

N.B.—Sawing and planing for the trade.

REPERTOIRE of MEDIÆVAL ART, 62, Wigmore-street, Cavendish-square.—Mr. BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Metal work, chalices and patens, offertory, basons, candlesticks, coronas, branches, gas-fittings, crosses, lumps, monumental brasses, hinges, locks, handles, fire dogs, lecterns, reliefs, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver lamas, painted candles, picture frames, tryptieks, censers, &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kinds of embroidery supplied and arranged.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 56, Pall-mall, London.

THE FARNLEY IRON COMPANY, WORTLEY, NEAR LEEDS,

MANUFACTURERS OF

FIRE-BRICKS, PATENT GLAZED STONEWARE DRAIN PIPES, CLOSET PANS, ORNAMENTAL TRUSSES, BRACKETS, MODILLIONS, PEDESTALS, VASES, &c.;

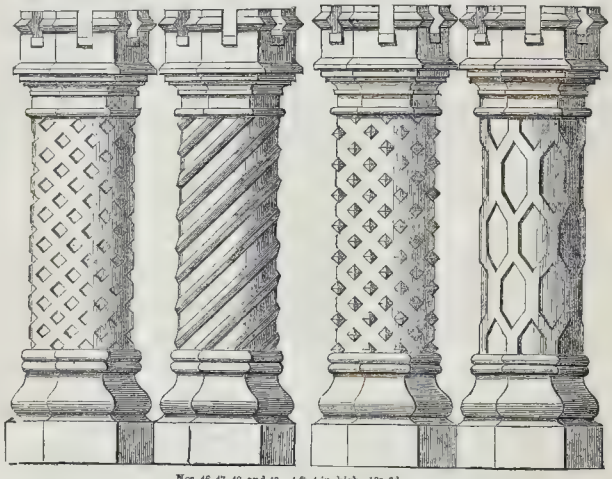
ALSO OF

TERRA COTTA CHIMNEY-TOPS,

In upwards of One Hundred Patterns, of various dimensions and of first-rate design, a few of which are given below,—scale half an inch to a foot.



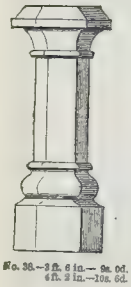
No. 67.—Wind-guard. 2 ft. 6 in.—10s.



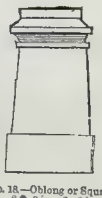
Nos. 46, 47, 48, and 49.—4 ft. 4 in. high—18s. 6d.
" " 6 ft. 0 in. " 25s. 0d.
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No. 65.—3 ft. 6 in.—7s. 6d.



No. 38.—3 ft. 6 in.—9s. 0d.
6 ft. 2 in.—10s. 6d.



No. 18.—Oblong or Square.
2 ft. 2 in.—2s. 2d.
2 ft. 6 in.—2s. 6d.
2 ft. 9 in.—4s. 0d.



No. 24.—Wind-guard.
3 ft. 6 in.—6s.



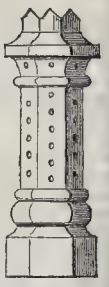
No. 3.—2 ft. 0 in.—1s. 6d.
2 ft. 6 in.—2s. 0d.



No. 14.—2 ft. 6 in.—3s. 6d.
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5 ft. 3 in.—8s. 0d.



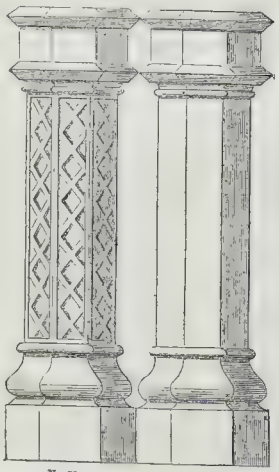
No. 13.—3 ft. 1 in. 4s. 6d.



No. 66.—Plain or Wind-guard.
3 ft. 10 in.—10s. 6d.
4 ft. 2 in.—12s. 6d.
4 ft. 8 in.—15s. 0d.



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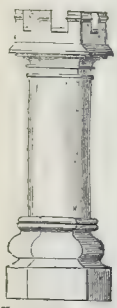


No. 73.
6 ft.—25s.

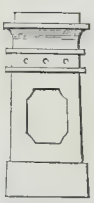
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No. 30.—4 ft. 3 in.—15s.
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No. 34.
2 ft. 9 in.—4s. 6d.



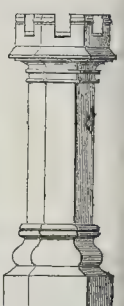
No. 13.
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No. 21.
Oblong or Square.
2 ft. 6 in.—3s. 9d.
3 ft. 0 in.—3s. 6d.
3 ft. 6 in.—3s. 6d.



No. 4.
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The Builder.

SATURDAY, JULY 2, 1853.

Of course, all our London readers know Hampstead Heath, with its open wilderness and splendid views, now as it was in the days of Fitz-Stephen, except that the wild boar and wild bull no longer haunt the forests. Here the bees—

"Murmur by the hour in foxglove bells,"

and the furze brightens the ground, and inspires notions of an untramelled freedom, exhilirating in the extreme to the mind of the tired worker, denizen of a pent-up town. It is one of the loveliest spots in the kingdom; and we would aid those who are seeking to keep it in its present state for the health and delight of the people: —

"Cold must he be who ever gazed
Impassive on its beauty."

The effect of parks and pleasure-grounds on the health, the manners, and the happiness of a great metropolis, has been wisely felt and distinctly recorded from the earliest times; in proof of which we may cite the Hanging-gardens of Babylon, those of Cæsar at Rome, the Tuileries of Louis XIV. and, later, our own Hyde-park, St. James's and the Regent's parks. Our own manufacturing cities,—Manchester, Liverpool, Birmingham, and Preston, are all acting at length upon this conviction, as due and essential to their population of unrefined but most meritorious mechanics.

We gratefully recognise our obligation to George IV. and his guide and coadjutor, the late Mr. Nash, for the liberal arrangements which have added the last ornament to our great city, in the Regent's-park and its approaches, extending from the Houses of Parliament to the New-road.

Though the inhabitants of the metropolis have since increased nearly a million, no proportionate increase has been provided for their health and recreation. The projects of the present day appear to us unworthy of the noble examples bequeathed to us by our ancestors. The last—that of Battersea "Marsh," in contra-distinction to Battersea-rise, which has cost 200,000*l.* and will, it is said, cost at least 200,000*l.* more to accomplish the design of bringing it, by means of a new bridge, within reach of the bulk of the population—is perhaps the least propitious. First, because it is obvious that in a flat, no horizon or distance can be enjoyed, if but a bush intervene: a flat is a proper site for a labyrinth, where in a small space a mystery of extent may be contrived by art, as in Vauxhall Gardens or the Park of Brussels, and ten acres will as well effect this as a hundred; while heights and undulation enable us to appreciate extent, to vary and beautify landscape, and, above all, to command the surrounding scenery by the birds'-eye view. Secondly, because a bridge such as is here required has been, and ever will be, found a real barrier to easy and agreeable communication: it constitutes in effect a territorial boundary, with all its antipathies, marking castes as distinct as the Romans and Transteverénes, the Quartier Chaussé D'Antin and La Cité de Paris, the Houses of Parliament and Lambeth.

Victoria Park, and even Highbury and Finsbury, situated as they are in populous districts, are better, but these are scarcely 50 feet above the Thames, and consequently lack the advantages derivable from height.

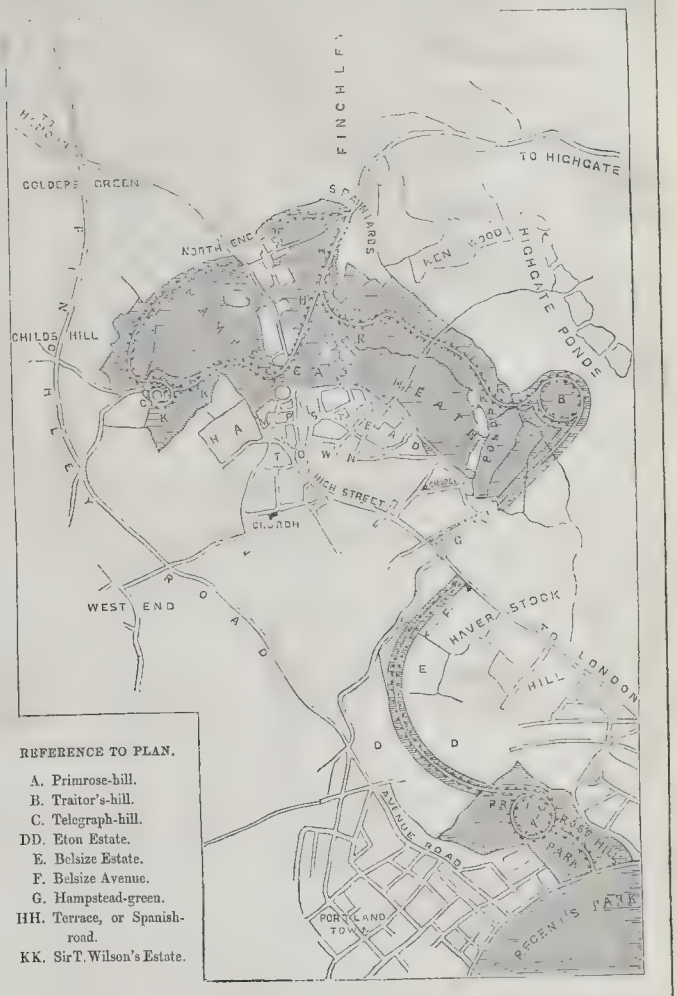
If we make a circuit around the rapidly increased suburbs of the metropolis, we can find no spot concentrating so many advantages for a public park as Hampstead Heath; indeed, it is unique, and may challenge the great cities of the world for a parallel suburb. Its height—no less than 425 feet above the Thames—commands views extending over the vast metropolis from east to west, to Shooters Hill on the one side, and on the other to the Surrey and Berkshire Hills, embracing Windsor Castle and an intervening country of surpassing beauty and variety, and proverbially healthy. Its sandy soil, of vast importance in our humid climate, insures at all times a dry and healthy recreation-ground; and in accessibility to all classes from all parts of London, it is unrivalled already, and the projected lines of rail from the east of London will render it still more convenient. It has long been the school for landscape artists: it is to London what Fontainbleau is to Paris, and the extent to which its picturesque beauties, undulations, and the wildness of the Heath, are enjoyed by the humbler classes on Sundays and holidays is refreshing to behold.

It is with the most unfeigned regret that we have seen this admired locality threatened by enclosure from surrounding buildings. One of the most extensive and beautiful views to the south-west has been already blocked out by the erection of three "London" houses. We may judge from these what would be the effect of a grant by the Legislature to Sir T. M. Wilson (the Lord of the Manor, now seeking that right), of the power of building over *some thousands of feet of frontage* facing the Heath, now beautiful meadows, and constituting the essential charm of this remarkable scenery. The old prediction of Mother Red Cap, that Hamptead is to be the future centre of London, may then be in course of verification, and, however whimsical this prediction may appear, we cannot close our eyes to the grave assertion of the Census-office, that in thirty-eight years the actual population of London, 2,500,000, will, at the present rate of increase, be doubled.

Legislating for futurity as well as for the passing hour, our Statesmen and Commissioners of Woods and Forests ought deeply to feel the responsibility of providing open ground ere it be swallowed up in this invasion of ordinary buildings.

Such an opportunity still presents itself at Hampstead, and we heartly rejoice at a plan, by Professor Cockerell, which we now present

PUBLIC PARK, HAMPSTEAD-HEATH.



to our readers for forming a park there, proposed to be connected with Primrose-hill and the Regent's-park by a boulevard or road, 300 feet in width, passing through part of the Eton-college and Belsize estates, *now actually laid out for building, and partly let*, and which, at this time next year, may be unattainable except at an enormous sacrifice.

Taking our course from the Regent's-park, the road proposes to pass over the commanding height of Primrose-hill, and thence to ascend gracefully by a magnificent park-ride and avenue, or boulevard,—reminding us of the most enchanting continental arrangement,—till it enters the Hampstead-road, by the existing beautiful avenue of Belsize-park, improving the surrounding building land by situations for the most desirable villas and gardened habitations.

The course thence is by Hampstead-green, passing over another commanding eminence known as Traitor's-hill, from which an admirable view of London and surrounding scenery presents itself, through land now desired to be built over, and which, if so appropriated, would for ever deface the beautiful locality. From this ground the road mounts to the Royal-terrace across the Heath, appreciated alike by the monarch and the mechanic, and continues to the well-known firs, from whence is enjoyed a lovely view of Harrow and the western country, unsurpassed by the imaginings of Claude and Turner. In the enjoyment of this beautiful scenery we descend the Heath to a hamlet designated North-end, and proceed around its western verge to a third commanding height called Telegraph-hill, which, as its name implies, is a land-mark through the country, and again displays to us a new and enchanting panorama. Here we arrive at a further portion of the ground desired to be appropriated for building, but which this project would secure as a necessary adjunct to the enjoyment of the Heath: passing through this land, the road would return to the upper terrace.

The extent of open ground would in all be about 300 acres. We have taken it for granted that this remarkable suburb is known to our readers; if not, let them take the trouble to survey it from the heights we have cited, in this pleasant season, and we need add no further argument to convince every beholder and lover of this metropolis of the vast importance of securing, once for all, this unrivalled pleasure-ground for our overgrowing Babylon. Parks, we have, it is true, but none to compare with what this would be. Nature has formed it for the purpose, and art would seek in vain to improve it.

In point of cost, we believe it to be now attainable on terms absolutely moderate in comparison with its value, and which ought not to form the subject of jealousy to others, or justify hesitation on the part of a Government charged with the duty of providing for the moral and physical well-being of a working and overcrowded population. May we soon hear that the Government are engaged in securing such manifold advantages to the public, and that the scheme of which we have obtained the accompanying outline may have the fullest success.

It is remarkable enough that a similar project was entertained in the year 1778, as we learn from Park's "History of Hampstead." Portman-square at that time formed the northern limit of London: the beauties of Hampstead seemed even then attainable by the inhabitants of the metropolis, and the scheme became popular. How much more it should be so now, we need not say.

"What lovelier home could gentle fancy choose?"

AUSTRIAN WORKMEN.—Several thousand workmen have recently been discharged from the manufactories at Vienna in consequence of stagnation in business.

ON THE ARCHITECTURE OF THE HONEY BEE.*

THE processes of nature are so beautiful and so interesting, that they are a becoming study for all, and for no class of students more so than for those who congregate within the walls of this Institute. Nature is the instructrix of art, and those who desire to excel in the latter should accustom their minds to the study of the laws which regulate the former. I feel sure, therefore, that I need not apologise for requesting the attention of this meeting for a few minutes to the labours of a class of architects whose productions, although not included in the usual *curriculum* of professional education, are by no means undeserving of our most careful attention. I allude to the delicate and fastidiously correct architecture of the honey bees.

From at least the fourth century B.C. down to the present day—from Aristotle to Lord Brougham—philosophers and naturalists have laboriously examined and written upon these wonderful animals and their ways. Divines have made them the theme of profitable instruction; poets of every language and climate have found in them an abundant source of imagery and illustration; and geometricians have brought the resources of mathematical science to bear upon their extraordinary works: but I do not know that their habitations have ever been looked at very closely by the eye and with the practical knowledge of an architect. In the present paper I do not profess to supply this deficiency, although I would urge others to that task, whose leisure and information better fit them for it than myself; but I will endeavour (without pretending, however, to any novelty of discovery) to lay before you a few strictly technical observations on the subject. Allow me to premise, that whilst, for convenience, I may speak of these insects as reasoning beings, I must not be supposed to labour under the error of referring their ingenious devices and sagacious ways to anything but an instinct or natural impulse, planted in them by that Hand which has shaped all things, and has established the laws by which the blade of grass grows under our feet, and countless worlds are taught to revolve over our heads.

A hive is a town of some thousands of inhabitants: the combs are the islands (*insulæ*), or groups of contiguous houses: the intervals between the combs are the streets: the cells are the separate habitations of individuals. Let us take up a comb, and we shall find that it consists of two ranges of houses, vertically separated, and having their accesses from the thoroughfares on the opposite sides of the comb. Let us examine a single house or cell, and we shall find it a hexagonal prism, open at one end and curiously terminated at the other in a manner to be hereafter adverted to. Now, what is the course of reasoning, or of impulse, that has led to this system of construction? Were one of these little creatures endowed, in addition to its ordinary powers, with the faculty of speech, and asked to explain the principles on which its buildings were constructed, I apprehend that it would deliver itself in some such way as this:—"It is laid down for us by our great Master that the three main, co-ordinate, and dominant principles which should guide us in our construction are—*convenience*, *strength*, *economy*. We trouble ourselves but little about *ornament*, which those giants, men, have so much at heart: we are a mere drudging, practical, little people, well satisfied with what beauty may happen to result from order, symmetry, and simplicity. The two first great principles, viz. *convenience* and *strength*, need no comment, their necessity is self-evident; but the third principle, *economy*, requires some explanation: it is one of the most strongly marked characteristics of our race. The material we build with is very expensive: we have first to collect it from far and wide, only at certain periods of the year; nor can we collect it in a useable state. We have to digest it by a tedious and irksome process, and we have then to elaborate it with much physical pains before we can apply it to our buildings. The expensiveness of our material, therefore, imposes on us a *severe economy*, and test us as you will, you will find that this is a ruling principle which w never lose sight of."*

Let us now proceed to apply the test. Th problem which the little statistician has to wor out is, "How to turn to the best possibl account the least possible quantity of wax." I showing you how it proceeds to do so. I wil abstain, as much as possible, from all reference to matters not bearing directly on the point although every collateral circumstance is highly interesting.

The working community is divided into two gangs,—the wax-making gang and the wax-working gang. In commencing a hive the first-mentioned labourers deposit a cubical tablet, or wall, of wax at the summit of the cavity within which they work. As soon as this is advanced far enough, an individual from the latter gang walks up to it at once, and after scooping out a slight circular concavity, describes upon the face of it a hexagon. As this important act determines the plan of the whole structure, we must stop to search into the motives for adopting that particular form. The hexagon is one of nature's most favourite geometrical figures—perhaps the *most* favourite, after the circle: we find it on the shell of the echinus, and in various madrepores; on the scaly surface of many reptiles; on the hides of many pachydermata; and the eyes of the very insect before us consist, it is said, of thousands of hexagonal lenses. The hexagon is the characteristic form of many crystals; the basaltic columns of the Giant's Causeway are hexagonal; so are the bubbles in a basin of soap-suds. But in no case is this form the result of caprice or accident: it is in all cases determined through the agency of natural laws. In the three last-named cases, especially, and perhaps in them all, a force expanding equally on all sides from various equidistant points necessarily describes hexagons at all their planes of junction. No such law of necessity, however, influences the bee when she describes the hexagon above referred to. It was her ruling passion, *economy*, which led to its adoption.

A cell is built for the two-fold purpose of containing the larvæ, and, subsequently, the honey: it is to be both the nursery and the larder. What would be the figure best adapted for these purposes, and capable, at the same time, of being repeated contiguously over a large surface without waste of space or material? On a little reflection we shall at once see that the choice is confined to the triangle, parallelogram, and hexagon. Put together any other geometrical figure, and you will find that there would be perpetually recurring waste spaces. Of these three forms, the triangle is inadmissible; for it is altogether unconformable with the body of the bee, whether in its larva or its perfect state, and the acute angles would be most inconvenient for the deposit of honey. The square is better, but in all respects inferior to the only remaining figure, the hexagon, for the following reasons:—1st, the angles of a hexagon are more obtuse, and, therefore, more accessible than those of a square, being as 120° to 90°; 2ndly, the sides of a square are wider than those of a hexagon of a given area, and would therefore require to be made stronger, consequently, thicker; 3rdly, given the quantity of wax, the hexagon will hold more honey than the square, for the side of a hexagon whose area is 1· measures, nearly, ·620403, which multiplied by 6 makes 3·722418; whilst the side of a square whose area is 1· measures, of course 1· which multiplied by 4 is equal to 4·000000; therefore, the areas being the same, there is $\frac{1}{277}$, or almost $\frac{1}{276}$ more surface of walling required to contain a square cell than a hexagon.

Let me next request your attention to the ends of the cells where they abut upon each other. If *we* were to build a double row of storehouses, or nurseries, back to back, we

* Read by Mr. Sydney Smirke at the Ordinary General Meeting of the Royal Institute of British Architects, June 13th.

* In one remarkable case the bees fail in their fidelity to this principle. In the construction of the royal cells they seem to merge all their ordinary feelings in a paramount anxiety to do homage to their queen. Reckless of space, they will sacrifice 100 cells in the formation of the palace, and the wax is piled on without regard to expense. Even their style of architecture loses its severity; for the surface of this excrescence is sculptured over with hexagons in bas relief, so shallow as to be of no possible utility. There may, however, be some traces of their natural thrift lurking beneath this sculptural profusion; for the wax scooped out from the shallow hexagons may not be altogether unacceptable in replenishing their exhausted stores.

should probably separate them by a longitudinal party-wall, running square and upright from end to end and from top to bottom. Not so the bee. We should also, no doubt, run our cross-walls right through, for it would be so much simpler, and save so much trouble to do so in building. Not so the bee, who thinks nothing a trouble if she can save wax.

Instead of placing her cells end to end, she *breaks joint*, as it were, making the end of each cell abut upon portions of three other cells, not with a square upright separation, but by dove-tailing the cells into each other, and terminating them with three p'anes, so placed as to form obtuse triangular pyramids. By this means, without diminishing the length of the cells, their sides are made shorter, and, consequently, stronger, and material is thereby economized. Every architect will, moreover, perceive that this series of diagonal planes, or braces, running through the centre of the whole comb, gives great stiffness to the structure; somewhat like a course of herring-bone inter-ties in a timber floor. This object of stability is still further promoted by working all these rhomboidal plates of much thicker films of wax than the sides of the cell. According to the measurements of a most distinguished observer (Lord Brougham), their thickness is to that of the rest of the cell never less than as 3 to 2.

But this is by no means all. These obtuse pyramidal ends are formed by three lozenge-shaped or rhomboidal plates, of which the angles are found by measurement to be respectively 109° 28″ and 70° 32″. Reaumur, one of the most eminent among the observers of bees, finding these angles to be uniformly and invariably adhered to, suspected that there must be some hidden reason for their adoption. He accordingly proposed to a distinguished mathematician (Kœnig), unacquainted with the above measurements, the following abstract question:—What ought to be the angle of a hexagonal cell with a pyramidal end formed of three similar and equal rhomboidal planes, so that the least possible material might enter into its construction? For the solution of this problem Kœnig had recourse to the infinitesimal calculus, and found that the angles of the three rhombs should be 109° 26″ and 70° 34″; showing a difference from the actual measurement of only two minutes; which difference, indeed, has since been shown to be owing to an error on the part of the mathematician, not of the bee. Certainly this is a very remarkable evidence of the light that may be thrown by abstract science upon the economy of these wonderful creatures.

I may here mention that my friend, the Rev. W. Mitchell, than whom few can have paid more minute attention to this subject, has discovered that the base of the cell is a portion of a true rhomboidal dodecahedron, like the crystal of garnet; and, moreover, that the whole cell may be built up of equilateral tetrahedrons, each side of which is exactly half one of the rhombs which form the base or end of the cell.

There is further evidence of mechanical ingenuity at the open or entrance end of the cells. On the outer edge is observable a thickening of the substance, forming a sort of lip or rim, and, of course, giving great additional rigidity to the work, exactly like the flange at top and bottom of a cast-iron beam; thus wax is saved by rendering it practicable to diminish the substance of the partitions. This rim is, moreover, of essential use in forming the foot-path, or *trottoir*, along which the bees are perpetually running. The excessive tenuity of the cell partitions is such that the constant traffic on these thoroughfares would speedily break them down, even were it possible for the bee to find foothold upon them.

I may here add that, when the bees find it necessary, owing to the accumulation of their stores, to increase the length of their cells, which is often the case, so scrupulously nice are they in their workmanship that they carefully remove this rim before they commence elongating the partitions, never failing, however, to add it again when the extension is completed; thus clearly illustrating the difference between industry and haste. Were they merely in a hurry, they would *make it do*, without troubling themselves to remove the thickening piece.

There is another nicety extremely worthy of observation. Although to a casual observer the two series of cells appear to be parallel to each other, they are found, in fact, never to be so; they are invariably built with a slight dip downwards towards each other, and, usually, I think, a little curved. To attend to this nicety, without derangement of the plan, must greatly augment the trouble of execution; but the reason for it is obvious. The contents of these cells are fluid; this dip assists in preventing the escape of the fluid at the open end (although they have other more effective means of obviating this inconvenience); and, moreover, by these opposite dips the pressure of the fluid in the two abutting cells counteracts itself, and so to a certain trifling extent relieves, by the law of the resolution of forces, the bottoms of the cells from the vertical weight of the honey. Indeed, it may be strictly said, that throughout the comb the weight of the fluid contents in no case bears upon any horizontal surface; both at the sides and ends of each cell the weight is received upon the inclined planes which form it.

There are many other structural peculiarities to which I might invite your attention, such as the fact that the combs are invariably commenced with the small sized cells, the combs being thereby made stronger, where strength is most needed, at their place of attachment to the soffite of the hive; just as we make a cantilever thickest at the insertion in the wall. Then the lenticular section of the combs is remarkable as being another device for obtaining strength without profusion of material. As the comb thins off at the edge, the cells necessarily become shallower, and thus rigidity is given to the outline of the comb. But I hardly feel justified on the present occasion in dwelling any longer on these details, although their very minuteness and delicacy appear to me to give them additional interest. It is not only upon a few broad, obvious principles that these insects work; nothing seems beneath their notice—no consideration too small for their regard, provided only it be calculated to promote the objects they have in view. I have repeatedly asserted that, besides the fitness and propriety of their habitations, one of their great objects is economy of material. Having shown you a variety of contrivances by which they endeavour to attain that end, it may be interesting to test their success by the general result. I applied for information to the proprietor of one of the largest cooperages in London, and I ascertained that the weight of an Irish butter firkin is usually about 14 lbs. and that, when full, the contents weigh 2 qrs. 16 lbs. or 72 lbs.; therefore, the weight of the butter is to that of the cask as 72 to 14, or 36 to 7. An experienced apiarist of my acquaintance—a sound and competent witness—informs me that, by repeated experiment, he has found that on an average hives furnish 60 lbs. of honey to 1 lb. of wax; therefore, in *this* case, the contents are to the cask as 420 to 7; and it becomes clear that the dexterity or efficiency of the workmanship of the bee is to that of the Irish cooper as 420 to 36; or, in other words, the one does his work about twelve times better than the other.

Whilst thus dwelling on the workmanship of the bee, it behoves me to add that it is at least equalled by the material. Nothing can exceed the admirable fitness of the substance, *wax*, of which her works chiefly consist. It is not one of the least marvels of this marvellous subject that the bee should, after swallowing some subtle dust which she finds in the depths of certain blossoms, be able in a few hours to secrete into pockets, ready for use, a substance which may be designated as the most imperishable and indestructible of all the plastic substances of nature. Air, light, cold, and moisture affect it not; it resists all the most corrosive acids, and the action of caustic alkaline solutions; nor will ether, which so readily dissolves resins and oils, touch it. The all-destroying and vivifying influence of heat alone seems to overcome its stubborn nature.

This leads me to a remark which, at the risk of a charge of prolixity, I cannot refrain from adding. For the easy manipulation of this singular substance a considerable amount of heat is necessary within the hive; and on that account, as well, perhaps, as on account of the necessity of warmth for the due nurturing of their young, there are few objects which the bee takes more sedulous precautions to attain than this, by selecting a sheltered locality for her residence, and by excluding the external air at all crevices with a natural cement (propolis), one of the special productions of that potent alembic, the bowels of the bee. But in close and sultry weather these precautions produce, naturally enough, some inconvenience. What steps, under these circumstances, do they take? Do they call in a Reid? No! they are far too well versed in practical science themselves to need any assistance. On this point I will take the liberty to quote the words somewhat condensed, of Kirby and Spence:—"During the summer a certain number of workers may always be seen vibrating their wings before the entrance of the hive, whilst a still greater number are engaged within it in the same employment. They stand in tiles: those that are without turn their heads to the entrance, while those within turn their back to it. The time that these ventilators devote to their function varies according to circumstances: some have been observed to continue their vibrations nearly half an hour without resting. Thus a constant current of air is established into and out of the hive. To satisfy himself that such an effect is produced, Huber (who was the first to observe the fact), having fixed a screen before the hive door, suspended within the screen from a thread small pieces of paper, feathers, &c.; they were immediately put in motion, being alternately repelled and attracted to and from the aperture."

We of the present day are glorifying ourselves greatly in the discovery that ventilation is needful for our well-being; but here has been an effective system of artificial ventilation—a sort of fan-blast—in regular practice among bees ever since God created them. Nor is this the only lesson of humility that these insects teach us. For ages we have been in the constant habit, when a man dies, of scratching up the surface of the soil immediately under our parlour and bedroom windows, and leaving his body to decompose there: thus the living and the dead jointly occupy every large and crowded town, the one exhaling and the other inhaling the gases generated by decomposed animal matter. What do the bees do? No dead animal is allowed for a moment to remain within the precincts of the hive. Even whilst dying the carcass is dragged out and ejected. The whole interior, indeed, is kept scrupulously clean. Should the carcass of an intruder be found too heavy for these tiny scavengers, aware of the poisonous gases that will be generated, and with an instinct that one would scarcely consider credible if it were not attested by unquestionable witnesses, they proceed at once to hermetically seal, or *embalm* the body, by enveloping it in a coating of propolis, the resinous cement which they apply to so many useful purposes; thus rendering perfectly innocuous that which their feeble physical power prevents them from removing.

After all, perhaps, no part of the wonderful piece of architecture before us is better calculated to strike *us*, as draught-men, with astonishment, than the precision and truth with which the honey-comb is drawn and executed: the nice accuracy of the mitres, the exact coincidence of the angles; and the perfect regularity of all the forms. The nine planes which form the sides and end of a cell form also corresponding planes of nine other contiguous cells: it is obvious that a single blunder would throw all into disorder: yet all is never-failing order. "Where is the architect" (asks Kirby, in his "Mongraphia Apium"), "who can carry impressed upon the tablet of his memory the entire idea of the edifice he means to erect, and without rule, square, plumb-line, or compass, can cut out all his materials to their exact dimensions, without making a single mistake or a single false stroke? Yet this is what these little animals invariably do, and thus teach us how much more wonderful and certain instinct is than all the efforts of our boasted wisdom, which, after many painful processes, interrupted by numerous errors and failures, and by a long train of deductions, cannot arrive at that expertness and certainty which these creatures manifest spontaneously, working at all times with unerring precision."

Such a comparison between the results of human reason and the instincts of these small

creatures seems almost to justify the bitter sarcasm of the poet—

"Il est vrai que la raison de tout temps fut son lot,
Mais c'est de là je conclue que l'homme est le plus sot."

Although this subject cannot fail to inspire an interest in every ingenious mind, yet I entertain some doubt whether my theme has not been carried somewhat beyond its due limit. I, therefore, beg to offer as an apology my desire to do justice to the beautiful subject which I have endeavoured, as a practical architect, to illustrate; and also to heighten the admiration with which every careful observer must contemplate the works of an insect in all ages regarded as the very type and symbol of virtuous industry.

ADDITION TO TRINITY COLLEGE, DUBLIN.

THE building about to be added to Trinity College, Dublin, will be 160 feet long, 90 feet wide, and 50 feet in height to the eaves. It will contain ten lecture-rooms, most of them about 38 feet by 30 feet. In the upper story there will be two lofty museums, 84 feet by 38 feet, and a drawing-school 72 feet by 25 feet. The hall and staircase will display in their columns and fittings the marbles of the country. The exterior will be of Portland Stone.

The style which has been adopted by the architects, Messrs. Deane and Woodward, is the Venetian Cinque Cento. The design is founded, to a certain extent, on the front of the *Palazzo Dario*, on the Grand Canal, Venice, given in our ninth volume, p. 202, and that of the *Casa Visetti*, in the same volume, p. 433. It will be a novelty with us.

DRAINAGE, DISEASE, AND DEATH AT CROYDON.

IN carrying out all future sanitary improvements, the case at Croydon is likely to serve as a precautionary and an instructive one. That the disease and death there associated with the new drainage ought to constitute a check to such improvements, or a warning against them, cannot for a moment be admitted, even in the face of a deliberate engineering and medical report to Government that the drainage has done it all. Hasty thinkers may be very apt to conclude that since Croydon was healthy without sanitary improvement, and since sanitary improvement has brought disease and death to its doors, we ought to let well alone, and set our faces against sanitary improvement. But, on the contrary, though compelled to admit the mischief done and the errors committed, in the case of Croydon, the tremendous and rapid power of filth for evil, though denied by many, has been so unequivocally manifested, that we ought to be only all the more convinced of its perils, and all the more determined to conquer in the good cause of sanitary reform. That the sullage of towns is a source of danger not to be tampered with, is now but too evident, if evidence were wanted to assure us of its danger. And again we say, that the case at Croydon will be likely to be an instructive, though precautionary one, and of important advantage in the future promotion of sanitary improvement in towns.

For the information of those who may not know or recollect the nature of the case at Croydon referred to, we may here observe, that since the execution of new works, intended to improve the sanitary condition of the town, an epidemic of a new description has occurred there, so that in a population of about 16,000 persons, there have been about 1,800 cases of fever since August last, with a mortality of about sixty, besides very numerous cases of diarrhœa and dysentery, with a mortality of about ten.

There are numerous springs at Croydon, which suddenly accumulate from different parts of the town and neighbourhood, to form at once the considerable stream of the Wandle. One of these springs, called the Bourne, is of rather capricious habits: disappearing sometimes for ten years at a time, and then all of a sudden overflowing its old and grass-covered, flower-wreathed *bed*—if we can call that *its* bed on which it only temporarily rests at such long intervals,—and, swelling to a torrent, it continues to flow for two or three months, and then as suddenly vanishes. It is little wonder, therefore, that amongst the community at large in Croydon there are old superstitions indelibly associated with "the Bourne." One of these is to the effect that pestilence assuredly comes with the Bourne, and with it disappears. Now, it is rather a curious circumstance that the Bourne did run lately for nearly three months, and that as it has again vanished, so has the epidemic!*

We have another purpose, however, in alluding to these streamlets than merely to narrate one of those "curious coincidences" associated with, it may be, an idle superstition. It is believed to have been the water from these springs, in the first place, and that from the Bourne in particular, which has actually led to most of the mischief done by the new drainage at Croydon. These springs are said to have overflowed the pipe sewers and checked the drainage; hence the epidemic. But before we enter farther into particulars on the subject now in hand, we have a few preliminary explanations to give in order to show the authority on which we base our remarks.

A representation having been addressed by the chairman of the General Board of Health to our excellent Home Secretary, Lord Palmerston, to the effect that fever had sprung up and spread itself extensively in Croydon since the establishment of new works for draining and supplying water to that locality,—that it had been suggested that these works were influential in producing the disease,—and that an inquiry therefore ought to be instituted; his lordship forthwith instructed Dr. Neil Arnott and Mr. Thomas Page, C.E. to investigate and report. These gentlemen have done so, and their joint and separate reports have just been printed together, and presented to both Houses of Parliament by her Majesty's command. Our purpose in this article is to give our readers some idea of the contents of these reports. They comprise a brief general report by Dr. Arnott and Mr. Page jointly; a medical report by Dr. Arnott, including a summary or general view, both engineering and medical, followed by a practical and valuable supplementary memorandum on the origin and nature of fevers and epidemics; and finally, an elaborate engineering report by Mr. Page upon the proceedings, the plan for sewerage, and its engineering features. Appended is an abstract of the evidence taken in short-hand at Croydon.

The general report in the outset thus concludes:—

"We regret to state that the result of our investigations is a conviction that the operations of the plan for the sewerage have been influential in producing the disease, and that the absence of proper provisions in that plan for some of the general requirements in town drainage, and the especial requirements of Croydon, has been productive of misfortune to the inhabitants; but that as the causes of such a result are evident, there will be no difficulty in rendering Croydon as desirable for its salubrity as it is for the beauty of its site and its proximity to the metropolis."

The especial requirements of Croydon, we may here remark, relate mainly to the springs, of which we have already spoken. The reporters state that while introducing a new system of drainage with small stoneware pipes, exhibiting a contrast to ordinary drains, inasmuch as it has been deemed a merit that they were only large enough to carry away the house and rain water, and were intended to be impermeable, with water and even air tight joints,—sufficient provision ought to have been made for the safe conduct of the water from the local springs, whereas such waters had to find their way to the river by what remained of the old faulty drains rendered now more unfit from being cut and interfered with by the new drains, or by overflow; and the stoneware pipes, instead of being impermeable, appear to have freely admitted this spring water, which "filled the small pipes so as to produce not only serious obstruction to the onward passage of the sullage water, but total obstruction to the passage along the pipes of all foul air from sinks and closets, so that the ventilation of these in the direction of the water current as intended in the plan was rendered impossible. "As to that foul air, one of the reporters remarks that its breaking forth after being confined, "indicates great part, it is to be feared, of the evil resulting from the Croydon drainage." The permeability of the pipes appears to be so far explained (at least it seems to us to be so) by the statement of the engineering reporter, that they were not sufficiently burnt, and that they were too thin; for if not sufficiently burnt they might absorb water, freely at all points, if steeped in it, as they seem to have been. Moreover, this defective formation and thickness are said to have rendered them more frangible after being in the ground for some time, and in many places, indeed, they were found broken, either from the mere superincumbent weight of earth, or from the passage of waggons, &c. over them. As to the thickness of the pipes, Mr. Page says,—

"The thickness of one of the 12-inch pipes used at Croydon was ⅝-inch full; the thickness of the 16-inch by 12-inch pipes used at Manchester is 1¼, and that of the 12-inch pipe approved by the Metropolitan Commissioners of Sewers is 1¼ inch; these last-named are therefore twice the strength of the Croydon pipes, the thickness of which does not appear to have been specified

It seems extraordinary that when 100 yards of pipe in one place were found broken at Croydon, and a half brick arch was turned over 100 yards of new pipe, no attempt should have been made to obtain pipes of a sufficient strength to resist the pressure, and thus to have improved the manufacture of the article, instead of adopting an expedient calculated to bring much discredit on the pipe system."

In contrast with this state of matters in regard to the *new* system of pipe sewerage, let us see, by the way, how the old Roman, and the still older Assyrian, pottery-pipe drainage was managed. We have only to quote the passage which follows in the same report:—

"The references by the General Board of Health to the Roman and Assyrian work in which pottery-pipes were used, possess great interest not only as affording illustrations of extraordinary adaptation of the means to the end, but in adding another example to the numbers existing in the case of the Romans, of the excellence of their workmanship. It is a matter of surprise that the example afforded by the Roman pipes near Zurich, their continuous bed on broken pottery in mortar, their joints surrounded by concrete, should not have been followed at Croydon, instead of the expedients above described: such a course would have avoided many of the evils which have resulted from imperfections, especially in the temporary method of forming the joints.

In the Roman and the Assyrian works there is, however, ample evidence that in those days competition contracts were unknown."

We select the following passages from the reports, abridging one or two of them somewhat, as containing the gist of the whole so far as it can be given in moderate compass.

In his general view or summary of the facts, partly medical, partly engineering, Dr. Arnott says:—

"Besides the now apparent unsuitableness of small pipes to the peculiar state of Croydon during the last season,* the Croydon experience has given evidence of other accidents causing diffusion of hurtful malaria, to which the pipe drains are liable merely because of their fragile nature and smallness. Very different and favourable results are described as being obtained in other places, as Tottenham, Rugby, &c. but both kinds of occurrences have to be considered in judging of the new plan. In a book kept at the town-hall of Croydon upwards of fifty stoppages of main-pipe sewers were recorded during the early months of their existence, while a still larger number of stoppages, not recorded, are known to have happened in the smaller or private house drains, occasioning altogether great annoyance, malarial nuisance, and expense. The causes of the obstructions were very various, for instance, breakages of pipes from weight of incumbent earth, or from heavy carriages passing on the road over them, subsidence or bending of portions of the drain in yielding ground, arrest of bulky solids accidentally or maliciously introduced into the narrow channels, fibrous substances like hay, human hair, thread, pieces of cloth, &c. sticking together with other sullage matter, and gradually growing to the condition of complete plugs. . . . . It is true also

* Camden alludes to the superstition regarding the Bourne at Croydon as existing even in his time. The breaking forth of the Bourne he says, was looked on then as "presagin: dearth of corn, or pestilence, and that the events some time ensuing hath procured it credit."

* And it ought here, in fairness to pipe drainage, to have been added, to the want of efficient separate drainage for the springs.

that still in other localities failures and disappointments like those at Croyden have occurred, leading in some cases to the removal of the pipes and the re-adoption of the brick structures. In Leeds and Manchester, the combination of impermeable tubular drains for single buildings or small areas with larger channels of stronger construction and suitable inclination for main sewers, is said to unite the advantages expected from the tube system with the security against accidents which belongs to the brick channels. The assertion will not be disputed that the impurities of a town should not be drawn to one point until plans are completely matured for disposing of them, so that no new grievance shall arise. Yet at Croydon the existence of the general filter-house so near the town, the arrangements at that house, the emission of the foul residual water from it into the Wandle, and the daily irrigation with much unfiltered sullage of Waterman's Meadow, also near the town and near good houses of the suburb, are faults in this respect. In conclusion, then, with regard to Croydon, it appears that the works required there are not yet complete, but there cannot be a doubt that with a system of drainage suited to its peculiarities, accompanied by other subordinate arrangements, Croydon will be one of the most healthy, as it is already by its position and other natural advantages one of the most convenient and generally desirable residences near the great metropolis."

In his conclusions on the merits of the scheme, Mr. Page says :—

"If the plan be judged by the principle of *arranging the sewerage according to the requirements of the population, so that its working shall leave nothing to be desired for their convenience and health*, then it must be accounted a *mistake*—not in using pipe-sewers, but in using them to an extreme in length and in diameter, and of insufficient strength—in not providing openings for examination at frequent intervals—in neglecting any means of ventilation—in interfering objectionably with private property and domestic comfort, by adopting the system of back drainage—in not arranging the inclinations with regular gradations, and in avoiding brick-sewers where these would have been advantageous. In the disposal of the sullage, which ought to have been based on its ultimate utility, the plan is objectionable in establishing a disgusting process for the separation of the solids near enough to the town to create a nuisance—in discharging the sullage into the river, which all other operations of the plan were calculated to free from impurity—in establishing irrigation by sullage water too near the town, and in not providing sufficient land drainage. Although engineers may be expected to pay more attention to the utilitarian than the artistic, there are few who would not in this case have scrupled to insult the "genius loci," by burying the springs of the Wandle and the Bourne in culverts and pipes, and polluting them with foul water when they appeared above ground."

The following passage may be instructive :—

"Amongst the substances found in the drains as causes of stoppage, Mr. Cox, as well as Mr. Austin, enumerates 'flannels, hay, shavings, paper, hair, pieces of stick, kittens, a nightcap, a dead cat, pigs' entrails, a bullock's heart,' &c.; and Mr. Cuthbert Johnson complained that from the slaughter-houses paunches and hearts were sent into the sewers. There can be no doubt that all these matters should have been carefully prevented from entering the sewers, especially pipe-sewers; reference, however, to the 'Elementary Maxims to be kept in view in the drainage and cleansing of towns, printed by the General Board of Health, for the use of Local Boards and their officers,' will show that the latter are enjoined to provide that 'blood, semi-fluid offal, garbage, and refuse of every description which may be capable of safe removal in the drains by suspension in water, from slaughter-houses, markets, shambles, stables, cow-houses, or manufactories, be conveyed into the drains on the principle of the soil-pan apparatus, taking care that such refuse be led as directly as possible into those main pipes which have the largest, quickest, and most constant flow.' It is evident that a maxim so comprehensive in its application as this, must invite a system of forcing into the sewers of every kind of rubbish 'capable of removal by suspension in water,' without observing the General Board's condition of its passing through the soil-pan, and must doubtless have led to frequent stoppages in the pipes: it is happily contrary to all good practice to allow matter of this description to pass even into brick sewers of large dimensions, and it might be concluded of much greater consequence to prevent such substances entering pipes of such contracted dimensions as those which have been used at Croydon, where the stoppages complained of have in many cases resulted from the introduction into the sewers of the very substances recommended by the General Board of Health to be passed through their channels, but without the precautions enjoined by the Board.

On the question of responsibility, the following quotation will show generally the opinion of the engineering reporter :—

"The history of the proceedings at Croydon shows that the General Board required, previous to their sanction being given to the plan, &c. that an engineer, appointed by them, should report upon it, and that in consequence, the engineer they appointed became the engineer of the Local Board,—that he made alterations in the details of the plan adopted by the Local Board with a view to improve it,—and having then reported in its favour, the General Board gave their sanction to the project, stipulating, however, that no expense should be incurred without the approval of their superintending engineer, whose certificate should be necessary previous to any outlay; by which conditions it would appear the General Board assumed great responsibility.

The plan proposed by the Local Board was free from many objections to the plan approved by the General Board. The pipe sewers were of larger dimensions; land drainage and the clearance of all nuisances are stated to have formed the first features; the use of the sullage for agricultural purposes, either by irrigation or otherwise, was contemplated; there was no screening-house, no direct discharge of filth into the Wandle; and if the least perfect disposal of the sullage, indicated by the plan and report, had been finally adopted, viz. the irrigation of land, it might have been effected at a greater distance from the town than Waterman's Meadow, where the refuse from 766 houses, or about 4,500 inhabitants, is daily discharged upon 17 acres of land.

The plan approved by the General Board of Health contained nearly 1¼ mile of 4-inch pipes in lieu of 6-inch, 7 miles of 6-inch pipes in lieu of 8-inch and 9-inch pipes, and so on in proportion.

It has been shown that this change in the sizes of the pipes produced serious evil; but beyond that, the General Board, in approving the plan, sanctioned the establishment of a disgusting and probably pestiferous nuisance close to the town, in the case of the filter-house; countenanced the pollution of the water of the Wandle by making it the outfall for the sullage, when the other operations of the plan completely freed it from impurity, and were not apparently cognizant of the absence of proper provision for such land drainage as the geological position of Croydon, and its connection with the Bourne water, imperatively required. No sections of strata were obtained; no sections of the lines of pipes provided. The working of the plan has been given in detail: the lower main sewers were filled with the Bourne water, which flooded the filter-house and stopped its operation—the whole mass of the filth was thrown direct into the river—the smaller sewers and the house drains were choked—the sullage was forced back into the houses; there being no provision for ventilation, except in the direction of the outfall, the noxious gases escaped into the dwellings; an unprecedented amount of disease (attributable in great part to these results of the sanitary arrangements) spread in the town, and yet the responsibility of the failure of the plan, of the destruction of health and life, and of the injury done to the interests of the inhabitants would rest, according to the "general conclusions" of the General Board of Health, with the Local Board.

Should the proceedings with reference to the sewerage of Croydon be repeated in other places where sanitary improvements are carried out under the Public Health Act, it is evident that evils may arise from the want of a right understanding as to the party responsible for the principles, details, and working of the plan, and it may result that, independently of the injurious consequences to the inhabitants in expenses, nuisances, and disease, where failure may occur there will be a disposition on their part to charge the General Board of Health with responsibility which ought not to attach to them, viz. the grave responsibility of consulting engineers.

It may here be remarked that the responsibilities of Local Boards of Health are considerably increased, their efficiency limited, and the expense to the inhabitants in all improvements much augmented by the want of compulsory powers of purchase in the Public Health Act. There are objections to this power being given, but if it could be arranged under reference to the General Board of Health, and, if requisite, to some legal authority to prevent its being abused, it would conduce materially to the economy and perfection of sanitary improvements."

On the whole subject, Dr. Arnott remarks, at the close of his report, that,—

"Although in Croydon now, things for the time may appear to be going on well, since the rains and the overflow of the Bourne have ceased, and there are no longer cesspools in the houses or gardens (this, however, at some cost as yet to parties living near the filter-house or on the banks of the river), and there is everywhere an abundant supply of good water, and most of the cases of defect or faulty placing of the drain-pipes may have been detected and mended,—changes which during favourable weather will secure a great improvement on the former state of the town,—still there should not be delay in proceeding with works which shall remove radically or for ever the evils that have recently existed."

In conclusion, we may remark that the engineer's report contains much valuable information as to the details and results of the scheme of small-pipe drainage and sewerage as carried out, either partially or wholly, in various places, as at Manchester, Tottenham, Leeds, and London.

ST. GILES' AND BLOOMSBURY BATHS AND WASHHOUSES.

THE Baths and Washhouses built in Endell-street, under the superintendence of Messrs. Baly and George Pownall, were opened on the 30th ult. The institution comprises two swimming-baths, seventy-three private baths, and fifty-six washing-places, with all the approved mechanical arrangements adapted to the comfort and convenience of the persons for whose especial use the institution is designed. Each swimming-bath contains about 25,000 gallons of tepid water, constantly flowing through the bath. The private hot and cold baths are of various materials,—porcelain, enamelled iron, and zinc. Each bath contains nearly fifty gallons of water, and is in a separate room.

Each washing-place has a boiling-tub, supplied with hot-water or steam, and a trough supplied with as much hot and cold water as the washer requires, and a separate compartment in a hot closet for drying.

We shall give plans and other illustrations of the building in an early number.

SIGHTS AND SCENERY.

The Royal Italian Opera-House.—Crowded houses every night attest the appreciation by the public of the powerful corps and band engaged at this theatre. For M. Berlioz's opera, "Benvenuto Cellini," the scenery would appear not to be new, with the exception, perhaps, of a charming moonlight for the carnival. In this the management were wise, for though an able production, full of science, the opera is not likely to be popular. It ends with the casting (on the stage) of Cellini's statue of Perseus. For an elegant little ballet, "Fleurette," Mr. Beverley has painted some effective architecture of Titanic masses, and a fairy landscape, weaker in the design of the lower part than is usual with him, but still very nice.

Theatre Royal, Adelphi.—Mr. Webster, up to this time, has scarcely manœuvred the powerful company now under his command in the Strand, so effectively as Lord Seaton does his at Chobham,—having contented himself mainly with the repetition of well-known movements; of which the public must have had nearly enough. The other night, however, he brought them altogether into a combined attack on public favour, and carried his point with flying colours, as well he might when he himself, Madame Celeste, Mrs. Keeley, Miss Woolgar, Keeley, Leigh Murray, O. Smith, Paul Bedford, and Alfred Wigan, fought in the ranks, and did their best to win. Leaving the tent for the stage, "Geneviève, or the Reign of Terror," the title of the new piece, is a genuine Adelphi drama, full of action and strong effects. Without otherwise particularizing, Wigan, who is one of the finest actors of this or any other time, renders his part a series of pictures of remarkable power. The scenery is all characteristic, and some of it very effective, although the "Court of the Temple" is not correct architecturally. The groupings are very spirited and artistical.

Surrey Theatre.—Meyerbeer's opera, "Robert the Devil," is being played here to immense crowds, and not discreditably in a musical point of view; but the scenery is perfectly disgraceful. It would not occasion any great wonder, perhaps, to find at a theatre of this grade that none of the scenery was quite correct, but to see the action of a piece professing to represent

the people and manners of the eleventh century carried on in a *Louis Quatorze* room of most ferocious design, is a reproach of ignorance to the management which they should forthwith remove.

DANGERS AND DISASTERS.

A WOODEN girder of Pothouse-bridge, Bilston, broke lately while an engine boiler of 16 tons weight was crossing the bridge. The boiler was nearly pitched into the canal below.

Part of an old building at Preston, belonging to the Local Board of Health, fell on Saturday week, while "two horses and a man," as our authority describes them, were within it, but escaped without injury.——While a plumber was lately engaged in putting some lead on the roof of a house near All Saints' Church, Preston, one of the coping stones at the edge of the roof gave way. He fell on the pavement beneath, alighting on his head, and was so much injured that he died in course of the same day.

A house at Silkstone, Barnsley, fell lately, after giving barely sufficient warning for the family to escape.

A young man employed at one of the quarries for the Holyhead Harbour works has been shockingly wounded by the handle of a crane, which, by some mischance or carelessness, was allowed to overpower those who were heaving.

Damage to the extent of 1,000*l.* has been done to Skipton Church by the shattering of a pinnacle to pieces, and other mischief done, by a thunder-bolt, which is described as afterwards "coming down the outside of the flue like a large ball of fire, and dividing or exploding in the middle of the church with frightful noise [while the congregation were within] and passing through the church in several different directions, making holes through the masonry and windows in its passage out," and shattering pews. Strange to say the only damage done to any one of the congregation consisted in the burning of part of a lady's dress. The church was filled with soot and dust, and great alarm was felt, yet, to the credit of the congregation, there seems to have been no general rush to the door, as so often leads to farther mischief in church panics. Had the lightning not expended its force previously on the pinnacle, the congregation might not have escaped so harmlessly. It is really criminal in those who have authority over such edifices not to use every exertion to procure a lightning-conductor for the spire or tower of the church. There was no such "way for the lightning," of course, in the present instance, although it is said that the building had been before struck by lightning. Here, we may add, seems to be another and new danger in church flues: where there is no lightning-conductor, they act as most dangerous conductors themselves.

ARCHITECTURAL COMPETITION.

I SHOULD feel obliged if you would insert another phase in the competition pestilence, looking on the other side of the picture to what your correspondent, "An Architect," did in your last number but one. I take the letter as directly thrown at myself without any just cause from the author. I have been in the profession fourteen years, and have an engagement in the office of "Messrs ——," which I have held for some years; and it is true your correspondent did engage a younger brother of mine a few days ago; and it is also very true that we were the successful competitors in obtaining the 5*l.* competition to which he so steadily alludes, when thirty-five other designs were submitted. Surely these could not all have emanated from clerks or gentlemen under engagements. I could show that the step he has taken amounts almost to a breach of confidence; and as this attack has been made with a view to put down clerks trying to practise for themselves, I shall endeavour to put up a building that will bear the strictest scrutiny by him or any other member of the profession. And I would suggest to all architects in future taking articled pupils at the small premium of from 300*l.* to 500*l.* to have it specified in their articles that they are never to enter the profession on their own account until they have sufficient business or capital to fall back upon without being driven to clerkships. But should this fail, the only alternative left is to remunerate clerks sufficiently, so that competition may not be worth their while, until they are in a position to demand a patron. AN ARCHITECT'S CLERK.



IRON HOUSE FOR CHAGRES, MADE BY WALKER.

IRON HOUSES.

THE Royal Mail Steam Packet Company are about to establish a permanent and efficient staff at Chagres, and have taken the initiative by ordering the construction of an iron house for their superintendent and other officers at that port. The annexed drawing (which might be more correct in perspective) represents the edifice, which is composed almost entirely of galvanized sheet iron, and has been constructed at the factory of Mr. Walker, at Mill Wall, Poplar. It consists of two spacious floors, with four large rooms on each, and is surrounded by a veranda, and there are out offices as well. When it arrives at its destination it is to be fixed upon iron pillars about 4 feet from the ground, and is to be placed on a pier at which the company's steamers will touch Chagres. Although it is, of course, to be taken to pieces in order to be embarked, and will weigh about 40 tons, yet when erected, as it now stands in Mr. Walker's factory, it will present to the eye the appearance of a perfect, permanently built private residence, within and without, in all the details of paper, paint, &c. The floors, staircases, door, and window-frames, are all of wood, but the sashes of the latter are of iron, and the glass for them is ready cut and fitted, and will be sent out with the other fixtures. There is also to be sent with it an iron safe or "treasury," also of Mr. Walker's construction, for the purpose of depositing the mails, &c. for safety on arrival. This is a large square room, constructed of corrugated iron, 21 feet by 15, and 12 feet high, and both buildings will be secured from accident by fire as far as possible by a lining, a few inches from the iron walls, of patent felt.

At the present moment Mr. Walker's factory presents rather a busy scene, for, in addition to the above, he has in course of construction thirty-six iron houses for the residences of emigrants sent out by Government to Australia. The factory itself occupies a space of about three acres, on which over 400 men are continually employed at a weekly expenditure of about 800*l.*

MEASURING LONDON FOR ITS CABS.—The metropolitan police commissioners have issued orders for a measurement of all the leading thoroughfares and principal streets in London, as the new Hackney Carriage Act comes into operation this month. The results will be embodied in tables at the cab stands.

NEW GATEWAY IN ST. JAMES'S PARK.—It would be a great desideratum if a new gate were made at the north-east point of the railings in St. James's Park, opposite the Duke of York's Column: the public might then, in passing to and from Birdcage-walk, walk inside the Inclosure, which would be more pleasant and private than the outside; and it would be especially convenient to pedestrians coming from, or going towards, Buckingham Palace.—J. D.

THE LABOUR MOVEMENT.

SINCE our last, the following correspondence has passed between the Committee of Carpenters and the Secretary of the Builders' Society:—

"In answer to yours of 21th instant, the Committee of the Carpenters' movement having throughout strenuously exerted themselves to prevent strikes, deeply regret that their endeavours have been so slightly appreciated by the employers, who seem to hold the executive amenable for the actions of those over whom they had no control.

They further state that what has been misconstrued into a threat was never, on our part, intended as such, particularly if the employers consider it as intimating a strike.

Had the Committee decided upon adopting such a course, the policy of intimating such hastily to the employers would have been questionable; even if such had been the case, extenuating circumstances might have been pleaded, from the fact of a not over conciliatory intimation from the employers relative to the closing their shops appearing in that evening's *Builder*.

In concluding the correspondence, the Committee, feeling the responsibility attached to their position at the present crisis, cannot suggest any other means of effecting an amicable adjustment of differences, only by deputation, which they hope the employers will receive. On behalf of the Committee,

(Signed) J. CALLAGHAN."

In acknowledging it (on 28th), the Secretary said:—

"I am at loss to understand the meaning of the closing sentence in your letter of 18th,* if it does not mean a threat. The Committee of delegates profess anxiety to discountenance strikes, and yet the chairman of the meeting on 13th instant, avowed that he had subscribed to support the men out on strike. It is very difficult to understand how this latter *act* can be justified with the previous profession."

On Thursday evening (30th), a meeting of the Builders' Society was held at the Freemasons' Tavern, but no further formal step was taken, or resolution come to. The meeting seemed to consider that Mr. Callaghan's letter might be allowed to close the question of strike—at all events, that it was not expedient to fret the subject by further correspondence. Messrs. Brass, we understand, have obtained new men, and a portion of Messrs. Lucas's have offered to return on Monday, at the old wages.†

CAN you afford me space in your columns for the expression of an opinion or two on the present struggle between the carpenters of the metropolis and their employers?

I am one of your readers who has worked with them, and suffered with them, and who knows from better experience where the shoe pinches; and I fully

* Page 402 ante.

† "A London Builder" urges that a public meeting of master builders should be held forthwith.

believe that the time has come when a more equitable adjustment of the wages question *must* be established.

The movement is one of vast importance to all; it is not confined to a few nor to this branch of trade alone, but is daily gaining ground among operatives of all classes throughout the country, and were it not for this and the fact that I have not yet seen, either from the men of the different firms "now out on strike," or from the association of delegates, any proposition practically good in itself, or likely to be permanently beneficial to the interest of the working men, I should not have ventured to address you.

I would ask of my fellow-workmen, are not the interests of the employer and employed identical? If one cannot exist without the other, any infringement of the rights of either must be prejudicial to both. It matters but little to the employer whether he pays 6s. or 7s. per day so that he gets his profit. If the rate of wages is increased, the cost of material necessarily rises in a like proportion, so also must the ultimate cost to the consumer increase—the result of which will be, that the capitalist will seek other investments, and the working man be the loser after all.

Hence arises the necessity for a better understanding between master and man. As to the ridiculously absurd notion concerning partial strikes, recently advocated at a public meeting, I rejoice to find that in the present movement, in the majority of cases, all such notions, together with the sickening cant phrases of "tyranny of employers" and "cruel combinations," have been cast to the winds, and a disposition evinced to be guided by reason and justice. I hope the result may prove the truth of it.

I do not address you as the apologist of employers nor as an opponent to the privileges of the working-man, but as an earnest advocate of the principle of paying every one according to his merits; and I fully believe that the remedy for the present evil does not lay so much with the employer as with the employed. I entreat my fellow-workmen to set aside for the present all old prejudices, and to think for themselves, individually, and not to let the clamour of the mob or the fear of combinations among themselves intimidate them from acting as the dictates of reason and justice suggest.

Let them seriously put to themselves the question, "How shall we be better?" without endangering the interests of the trade. This, sir, is the question of greatest importance; and the more the present time is wasted in useless deputations, or frittered away in worse than useless speeches and resolutions, the more certain will be the failure of our objects and the ruin of those of our warm-hearted but misguided brethren who have thought fit to leave their employers. What have partial strikes and all such misunderstandings brought us to at present? Were there such things as sawing-mills, planing-mills, moulding machines, morticing and sash-making machines, thirty years ago? And if we, the working men enforce it, in a few years will there be much left but a little fixing for the carpenter to do?

With the adoption of the piecework system better us, even supposing it could be universally carried out? Would it not lead to a slavish competition between man and man, between animal strength and intelligence? Quantity and not quality would be the rule; and the result would be less beneficial morally and physically to the operative than to the employer.

Will the demand for the extra sixpence per day, which is being gradually acceded to, permanently benefit us? I deny that it ever will; for it is based upon injustice: the principle is inconsistent, and equally as prejudicial to the interests of the intelligent workman as to the employers. Are there not good and bad workmen, quick and slow, steady and unsteady ones? and I will ask any skilful, intelligent, and persevering journeymen, do you feel that justice is done you when, after years of practice and experience, and with, perhaps, the additional responsibility of a wife and family, you are only placed on the same scale of remuneration with your bench-mate, who has, perhaps, only just emerged from an unsatisfactory apprenticeship; or with the "slow coach," who, perhaps, with considerable difficulty, and your own generous assistance, can manage to get though nearly two-thirds as much work as yourself in the ten hours: or with that Boaster,—that pest of trade societies, whose prodigies of labour have never existed, save at the bar of the public-house? Do not these cases suggest to you that some one must be the loser; that either that class of workmen cannot be worth the wages, or that if so, you must be worth more: that it can matter but little to the employer if he makes the good pay for the bad? His interests are secure while you, my friends, are clamouring for the support of the idle, the worthless, and inefficient, to the prejudice of your own interests, and the expense of your own pockets. It is this, as well as the "Public-house" Trade Society system that has deluged the trade with hundreds who assume to be, but never will be, carpenters, but who pass on in the crowd by the interest of a friend. It is this system that has furnished us with foremen selected, not for superior intelligence or moral worth, but for their bullying and "sweating" capabilities; it is this system that deadens the energies and destroys the spirit of emulation in the younger ones, since it holds out no inducement to excel but the everlasting 5s. or 5s. 6d. per day, be he good, bad, or indifferent.

I would wish, Sir, to see a thorough organization throughout not only this branch of trade, but in all others, and more especially a complete annihilation of the hateful "Public-house Society" system. In our trade alone the amount thus daily, and almost hourly, uselessly squandered, would suffice in a year to erect a building worthy of the carpenters and joiners of the metropolis, where the business of the different societies might be carried on, and where those of its members out of employ might refresh their minds and increase their usefulness by means of a library of works on matters connected with the trade, and where the younger branches might, by lectures or classes, receive that theoretical acquaintance with their business rarely to be obtained elsewhere; where a perpetual register should be kept for workmen and employers, and where should be obtained, from a body of eminent and *thoroughly qualified practical men*, after the necessary examination, a certificate of the qualifications of its members, and upon which certificate alone *the rate of wages should be based*.

John Langstaffe.

COLUMN, AMMERDOWN-PARK, SOMERSETSHIRE.

In reply to some inquiries concerning the column which is being erected on the highlands of Ammerdown-park, in Somersetshire, in memory of the late T. S. Joliffe, esq. we are asked to state that intimation will be given when the work is sufficiently advanced to merit examination. The subjoined inscription, placed in a recess of the plinth, will in some degree explain the design and object of the structure.

Hæc Columna
Quà conservetur memoria
T. S. JOLIFFE, Armigeri,
E Stirpe Regum Plantagenetarum;
Hùjusce Centuriæ KILMERSDONLÆ primarium,—
itidemque VELLOVLÆ,—Præsidis Dominique;
Viri
Ingenio, vi animæ, virtutum indole,
Et omnium artium
Quæ ad humanitatem pertinent disciplina
Præclari;
Qui
In cunctis vitæ rationibus,
Comis, excultus, integer;
In Senatu—in Tribunali—
Ubi quid fortiter ac strenuè agendum esset,
Cùm muneribus fungendis,
Tùm potestate opulenti possessoris exercenda,
Sibi et amorem et observantiam
Latè intelligentiquæ vicinitatis conciliavit,—
Posita est.
ILLI,
Qui agros circumjacentes
Ab aspera et dura conditione ad bonas fruges perduxit,
Qui viriditatem herbescentem ex semine elicuit,
Et terram indomitam fertilitate lætu vestivit,
Qui denique "*Vicina coegit*
Ut quamvis avido parerent arva Colono;—
Filius ejus, natu major,—et hæres,—
Hoc—grati animi ergo—monimentum
Dat, dicat, dedicat!

Ammerdoniæ
In memore domestico,—prope Bathonienses,
In agro Somersetensi.
VIII. Id. Jun. A.D. CIↃIↃCCCLIII.

THE FEJÉRVÁRY COLLECTION OF ANTIQUITIES.

The collection of antiquities now exhibited in the rooms of the Archæological Institute, Suffolk-street, was made by a Hungarian gentleman, Mr. Gabriel Fejérváry, and presents a completeness very rarely met with in the museum of a private individual.

The chief treasures of this collection are its *gems*, its *bronzes*, and its *ivories*.

Amongst the gems, we find Assyrian, Babylonian, and Persian cylinders and seals; several first-rate Greek cameos, and some excellent intaglios. Dioscorides, Allion or Allionos, and Alexa, are the names recorded on some Greek gems. Dioscorides, renowned in the beginning of the Roman empire, marked his name on the full-face representation of a Muse (No. 179), admirable by the expression of naïveté; Allion on that of a triumphant Cupid (No. 187); and Alexa on a cameo (No. 189), representing a sea-dragon.

The Roman gems, though not rivalling the Greek gems in the charm of features or the grace of movement, are superior in the representation of individuality. The Onyx-cameo, with the head of Emperor Trajan (No. 316), in this collection, is thought by some to be one of the best portraits ever made.

The collection of bronzes begins with an Egyptian Pharaoh (No. 1), and contains specimens from the eighteenth dynasty down to the Egyptian style of the Ptolemaic and Roman period. Amongst the Etruscan bronzes, which show the beginning, the progress, and the decline of that art in a very striking manner, there is a figure of Turan or Venus (No. 93). The Greek bronze representing a male and female figure on horseback (No. 211) is one of the oldest Greek bronzes known, and connects the Greek art both with that of Egypt and that of Assyria and Etruria. We get nearer to the time of the first Athenian school by the representation of a Medusa (No. 212), and meet it in the Oinohoe (No. 213) brought from Greece by the Venetian Admiral Grimani.

The most valuable Roman bronzes are a statue of Emperor Hadrian (No. 582); two signs of an antique Zodiac (No. 580), of the time of Emperor Trajan; the figure of Cybele (No. 583); an excellent Æsculapius (No. 553); Mercury (No. 546), &c. Among the specimens of mediæval bronzes—four in number—are, a figure by Peter Vischer (No. 445), the contemporary of Durer; a relief by Verocchio (No. 442), the master of Leonardo Da Vinci; and a Virgin (No. 440), with the child, of the time of the Pisanis, besides an embossed shield with the date of 1552, and the name of Georg. Sigmann Aurifex Augustanus.

The series of ivories begins with one of a remote Etruscan date, and is very interesting and valuable.

Mr. Pulszky has given six of his course of lectures on Antiquities; the seventh will be given on the 2nd July, and will treat of Gems, Terra Cottas, Vases, and Ivories.

THE INSTITUTE OF ARCHITECTS.

Now that this session is over, allow me to mention what no doubt many will think with me calls for improvement,—I refer to the manner in which the members are obliged to cramp and screw themselves about to sit down during, at times, a tedious evening. It is really not creditable in the case of a society allied with Royalty to have such a meeting-room, and so furnished. A number of cane-bottom bed-room chairs are tied close together by their legs, and kept in rank and file with pieces of wood running just underneath the seats, so that it is impossible to move the one without the whole; and these are so close together, that there is but just room enough for each person's hips; but according to nature the shoulders are much broader than the hips, and it is quite amusing to watch these poor shoulders, belonging to individual architects, diving and driving into all manner of shapes for ease, never giving a thought that their neighbour might have some feeling in his back. And as to room for legs, God bless the man with long ones, say I, especially when he is so *fortunate* as to get the middle seat of a line. Even the lectures at times are not so interesting as to make you forget your situation. Pray do, Mr. Editor, raise your voice for the comfort of those who attend the meetings; and no doubt there are many who stay away rather than undergo the two hours' martyrdom. Release the chairs by cutting the string that binds them by the legs, and let them take up a position in a room where they would seem more at home—I mean the bed-room—and have proper stuffed forms with backs. Look at the Society of Arts, and above all, the Institute of Civil Engineers: it is a pleasure to go there even if the discourse should be worse than at Grosvenor-street, for you *can* sit comfortably. If I hear right, Mr. Editor, you have long legs yourself, and if you have happened to sit behind, you will not refrain from putting this before the council.

A Visitor.

*** More commodious premises are very much needed by the Institute, and the council are fully alive to the fact. They have now several sites before them, but are of course anxious, when they *do* move, to get unexceptionable quarters, so as to render another change unnecessary. It would not be too much to expect that Government should provide a fitting meeting-place for the Institute.

The Crystal Palace.—In consequence of an accident to some scaffolding at the building (which, we are told, was happily attended with no injury to life or limb), the raising of the first rib of the central transept, mentioned last week, will be postponed for a time.

IRISH CORRESPONDENCE.

THE foundation-stone of a new Wesleyan church has been laid at the Falls-road, opposite Alexander's flour-mills, at the western end of Ardmoulin-place, Belfast. Mr. Lanyon is the architect; and the contract has been given to Mr. James Carlisle.

On the Killarney Junction line the works have been brought nearly to a completion,—29 miles from Mallow to Freemount have been opened for traffic, and the 8 miles next Killarney are ready. The only unfinished works of any importance are the rock cutting (at which 300 men are engaged night and day) and the Quagmire viaduct. The stations are (we are informed) nearly completed, and the large hotel at Killarney, which was noticed in the *Builder* some time since, is in progress. Mr. W. R. Lefanu, C.E. Mr. Dargan, contractor.

A Presbyterian church has just been built at Waringstown; and a schoolhouse for males and females, with suitable apartments for teachers, has been lately added.

The subscription-list for the proposed masonic hall at Armagh is daily increasing.

A new town-hall (with mechanics' institute, reading-room, and library) is proposed to be built at Cavan.

A new Wesleyan methodist chapel has been commenced at Coleraine, and the foundation-stone has been laid in presence of a large assemblage, and with the usual formalities, by John Cromie, Esq. D.L., J.P.

We are told that the contract for building a new club-house at Queenstown, Cork, has been disposed of to Mr. Cassidy, and that the works are progressing.

HAND-WROUGHT IRON GATE IN THE TOWN HALL OF LUNEBURGH, HANOVER.

IN presenting this well-designed and freely-executed design in wrought-iron, it may not be out of place to string together a few random notes respecting the ancient and useful art by which it was produced. We will not at present enter into a planned and regular history of working in iron, and yet cannot well refrain from commencing these remarks at a remote period.

It is noticed that but few specimens of iron-work are met with amongst the remains of the ancient Egyptians; this circumstance, however, has by some been ascribed to the nitrous nature of the soil having caused the more rapid decay of iron than of other metals. In the sacred writings the uses and manufactures are mentioned in numerous passages.

Tubal Cain is the *first-mentioned* smith or forger of every instrument of iron (Gen. 4, xxii.). From that time we meet with manufactures in iron of the utmost variety (*some* articles of which seem to be anticipations of what are commonly supposed to be modern inventions; as iron weapons or instruments (Numb. xxxv. 16, "If he smite him with an instrument of *iron*, so that he die, he is a murderer;" also Job xx. 24); *an iron bedstead* (Deut. iii. 11, "For only Og king of Bashan remained of the race of giants; his *bedstead of iron* is shown, which is in Rabbath of the children of Ammon, being 9 cubits long and 4 broad, after the measure of a man's hand"); chariots of iron (Josh. xvii. 16, and elsewhere); iron weights—shekels (1 Sam. xvii. 7); harrows of iron (2 Sam. xii. 31); iron armour (2 Sam. xxiii. 7); tools (1 Kings vi. 7; 2 Kings vi. 5); horns (1 Kings xxii. 11); nails, hinges (1 Chron xxii. 3); fetters (Ps. cv. 18); bars (Ps. cvii. 16); iron bars used in the fortifying the gates of towns (Ps. cvii. 16; Isa. xlv. 2); *a pen of iron* (Job xix. 24; a pillar (Jer. i. 18); yokes (Jer. xxviii. 13); pan (Ezek. iv. 3); trees bound with iron (Dan. iv. 15); gods of iron (Dan. v. 4); thrashing instruments (Amos i. 3); and in later times an iron gate (Acts xii. 10); the actual cautery (1 Tim. iv. 2); breast-plates (Rev. ix. 9).

The art of the smith is one of the essentials of civilization, and so requisite was the trade of a smith in ancient warfare, that the conquerors removed these artisans from a vanquished nation in order the more effectually to disable it. Thus the Philistines deprived the Hebrews of their smiths (1 Sam. xiii. 19); and other passages of the sacred and other ancient writings might be mentioned to show the great estimation in which the craft of a smith was held in remote times.

Iron was prepared in abundance by David for the building of the temple (1 Chron. xxii. 3): in 1 Chron. xxix. 7, he says, and they gave for the works of the house of the Lord, of gold, 5,000 talents, and 10,000 solid silver, 10,000 talents, and of brass 18,000 talents, and of iron 100,000 talents;—an enormous quantity, whichever opinion be right as to the weight of the talent.

While glancing at these notes of ancient iron-workers, who must have been numerous at the far-famed Temple of Solomon, it may not be uninstructive to mention the qualifications considered necessary for one of the directors of that great work, a list of which he gives in his embassy to the King of Tyre, as follows:—"Send me, therefore," says he, "a skilful man, that knoweth how to work in gold and in silver, and in brass, and in iron, and in purple, in scarlet and in blue, and that hath skill in engraving, with the artificers which I have with me in Judea and Jerusalem whom David, my father, provided."

The King of Tyre, on the receipt of Solomon's message, and after congratulating the latter on his appointment to build so glorious a work as the temple, says, "I therefore have sent thee, my father, Hiram, a wise and most skilful man, the son of a woman of the daughters of Dan, whose father was a Tyrian, who knoweth how to work in gold, in silver, in brass, and in iron, and in marble, and in timber, in purple also, and violet, and silk, and scarlet, and who knoweth to grave all sorts of graving, and to devise ingeniously all that may be need of in works of thy artificers; and with the artificers of my lord David, thy father."

For ages even before the dawn of British civilization, this country has been famous for its large production, not only of iron, but the other materials requisite for its manufacture. We will not endeavour to penetrate the gloomy mist of old traditions which bring people of various and now extinct nations to our shores in search of this valued mineral: the traces, however, of the Roman workmen are distinctly visible at the present day in the Forest of Dean, in Gloucestershire, and many other parts of England. It is but reasonable to suppose that the then barbarous natives of these islands should by the teaching of the strangers speedily acquire skill and knowledge in the uses and appliances of iron, and we accordingly find, as early as the twelfth century, iron-work for both domestic and warlike purposes was extensively manufactured in England. The Anglo-Saxons had previously been noted for their work in silver and other metals.

Stowe says, "I find a complaint about the year 1300, of the *Ferones* (that is, of such as dealt in iron), made to Elia Russel, Maior, and the Aldermen, for that the *Smiths of the Wealds*, and other merchants, bringing down irons for wheels for carts to the city of London; they were much shorter than antiently was accustomed,—to the great loss and scandal of the whole trade of ironmongers, and requiring remedy upon this; whereupon an inquisition was made of lawful and honest men, who presented these iron-rods of the just and antiently-used length of the *Styrtes*, and also of the length and breadth of the *Gropes* belonging to the wheels of the carts; which rods were sealed with the seal of the chamber of Guild-hall, London, whereof one remains in the said chamber, and another rod was delivered on the Monday before the Purification of the Virgin Mary, A.D. 29, Ed. I. to *John Dode and Robert de Padington*, Ironmongers to the Market; and the third was delivered the same Monday to *John de Wymondham*, Ironmonger to the Bridge, all of which, from day to day, warned all merchants bringing those iron-works to the City of London, as well from the *Wealds* as elsewhere, that they should not henceforward bring such irons, unless of the length and breadth aforesaid, upon forfeiture of the said iron-works that should be found against the assize aforesaid."

The above passage is curious in showing at that period the extensive use of agents in London for the sale of manufactures. Various craftsmen in iron, &c. however soon after settled in London, and became famous for the excellence of their goods.

It is difficult to fix the date of the formation of the various workers in metals into substantial companies, but the time of their incorporation, and other interesting particulars may be gathered from Stowe and other London historians.

The Society or Company of Armourers have been a brotherhood of ancient date, and became incorporated in the beginning of the reign of Henry VI. the king being pleased to style himself a brother of the company.

"The Cutlers' Company," says Stowe, "is of great antiquity, and was first incorporated in the beginning of the reign of Henry V. The importance of this company is shown by the confirmation of the charter by Henry VI. Henry VIII. King Philip and Queen Mary, Queen Elizabeth, and King James.

"Knives for hundreds of years (past all memory) were made in this kingdom,—but coarse and uncomely. But in James the 1st, his time, the best and finest knives in the world were made in London. Richard Matthew, at Fleet-bridge, was the first Englishman that attained the skill of making fine knives and knife-hafts, and, 5 Elizabeth, he obtained a prohibition against all strangers and others from bringing any knives into England from beyond the seas, which until that time were brought in by ship-loads from Flanders and other places."

Of other workers in iron the Fletchers and those engaged in the various portions of the manufacture of the old English bows and arrows were in time superseded by the introduction of more deadly weapons.

In 1570 they style themselves the "Decayed Company of Bowyers, Flitchers, Stainyers, and Arrow-head Makers, as well of the City of London as elsewhere," and petition the Queen concerning their decayed condition; the exertions of the government of that time, although anxious to afford relief, failed in their intention.

The Company of Smiths or Blacksmiths was not incorporated until the twentieth year of the reign of Queen Elizabeth.

The pewterers were, in the olden time, an important body, and so excellent was their alloy of metal that it was sent from London in a manufactured state and otherwise to many parts abroad; but amongst all these crafts the ironsmith and goldsmith were distinguished, and in many instances these arts were practised together.

The trade of a goldsmith in Edinburgh appears classed with that of the hammermen or common smiths. In the charter of that corporation, granted 2nd May, 1483, the goldsmiths are included, and the whole received certain regulations and immunities by which they were enabled to appear as a public company. At what time the goldsmiths were separated from the hammermen is uncertain. Their first charter of incorporation is probably that granted by the town council, August 20, 1581, in which they received many privileges, amounting in the fullest manner to a monopoly of their trade. This combination of art so essential, not only to the decoration of a court, but other purposes, was confirmed in its rights by a charter from James VI. 1586, the same year that the benevolent and famous jeweller, George Heriot, commenced business.

The style of working in iron for architectural purposes has naturally become assimilated with the taste and order of the prevailing buildings, and one of the great uses of a national museum in this country ought to be the facility of examining these varied works of art,—for undoubtedly the art of working fine designs in iron is an art of a very high description, and an inspection of the few works at present remaining in England still appended to the best of the architecture of the Middle Ages shows a delicacy and refinement which only could have been produced by an educated and artistic eye and skilful hand. It is, however, the fact, that few portions of old architectural decoration have suffered more severely than the ironwork, and considering the beauty of the few existing examples, this loss is to be deplored.

The iron keys engraved are of French manufacture, and date from about the time of Henry VII. to the reign of Elizabeth.

WROUGHT-IRON GATE, LUNEBURGH TOWN-HALL.





"THE GRAVE-YARD FEVER."

ST. JAMES'S CHURCHYARD, HAMPSTEAD-ROAD.

Last Wednesday week, Mr. Wakley held an inquest in Somers Town, on John Ware, aged two months, the son of a porter, who, according to the evidence, was poisoned by the putrid exhalations from St. James's Chapel Churchyard, Hampstead-road. Mary Ware, deceased's mother, stated that the house where she lived was close to the churchyard, the smell from which poisoned the atmosphere. Witness attributed deceased's death, her own bad health, and that of her family to the stench from the churchyard. Mr. Day, surgeon, when called on to see deceased, found him dying, and within a very short period he died. Witness performed the autopsy, which proved that death arose from exhaustion, the result of debility brought on by the foul air generated by the adjoining churchyard, where, under three acres, lie thousands of human bodies in different stages of putrefaction, and many of them within a few inches of the surface. Hence typhus, and various other fatal diseases, constantly raged throughout the neighbourhood. A short time since he attended the beadle's family, who lived in a house in the churchyard. They were all attacked with fever, of which the father died, and his son was rapidly sinking from consumption. The very walls of the house were covered with a black coating, produced by the exudations from the surrounding graves. The disease that then afflicted the neighbourhood was designated "the grave-yard fever." Coroner: "It should be called the grave-yard feeder." After some further evidence, the coroner summed up, and expressed a strong hope that all intramural burial-places would be for ever closed, as they were so many prolific sources of every species of disease. The learned coroner further expressed his conviction that a proper representation upon the subject by the jury would meet prompt attention from the authorities. The jury returned the following verdict:—"Deceased died from exhaustion, produced by disease consequent upon the poisoned state of the atmosphere in which he lived."

PROVINCIAL NEWS.

Colchester.—The following tenders for the erection of the new church in St. Mary Magdalene's parish, were lately examined by the Committee, and the lowest accepted:—

Mr. Balderston, Ipswich	£2,298
Messrs. Lufkin and Shepherd, Colchester	2,286
Mr. Saunders, Dedham	2 220
Mr. Luff, Ipswich	1,925

Aston.—Preparations are being made, according to the *Herts Mercury*, for the construction of a bridge over the river Beane, at Aston Ford.

Woolwich.—Mr. Edmund Smith, the contractor for various government works, and for the defences of the Isle of Wight, has entered into a contract with the Woolwich Local Board of Health, we hear, to thoroughly sewer the town for about 8,000*l.*

Bridgewater.—From a report of a vestry meeting as to St. Mary's Church, in the local *Times*, it appears that Mr. Carver, architect, has reported on the state of the tower and spire, and the means advisable for its repair. It is said to be rent almost from top to bottom in several places, and, if retained, to require a complete system of iron-bracing and cementing, the cost of which is said to have been estimated at nearly the same as the sum estimated by Mr. Brakspear for its re-erection. A committee has been appointed to further consider the subject and report thereon, and also as to a new vestry and other contemplated improvements.

Sheffield.—A marble bust, by Mr. Edwin Smith, sculptor, of the late vicar, Dr. Sutton, has just been erected to his memory, in the left-hand compartment of the "sedilia" of the chancel of the parish church. It forms part of a monument in the Early English style, measuring 8 feet in height, and is executed in Caen stone, with a statuary marble back ground, from which projects a bracket, supporting the bust, which is life-sized, carved in statuary marble. The model was executed by Mr. Smith from sittings some twelve years ago, when Dr. Sutton was in comparative health and vigour. Mr. Smith informs us that for some time past he has been occupied in devising an instrument for the use of sculptors for the purpose of "pointing" busts, figures, &c. and that he has at length succeeded in producing a "pointing instrument" of undeviating accuracy, and so simple that it may be used by any person of ordinary intelligence, and will accomplish its work in one fourth the time required by the ordinary "pointing instrument" in use amongst sculptors. The bust of the late vicar of Sheffield was executed by the instrument in question. ——The ground for the proposed Wicker Congregational Church, according to the local *Independent*, has been secured, and the architects, Messrs. Weightman and Hadfield, are engaged in working out the plans and estimates, the general design having been approved. The site is a triangular piece of ground, the property of the Duke of Norfolk, at the junction of the Burngreave and Grimesthorpe roads. The chapel is proposed to seat 1,000 persons, having also school-rooms, with class-rooms and other conveniences. The style is ecclesiastical, but adapted to congregational worship. It will consist of nave and transept, and will be surmounted by a tower.

East Retford.—A committee has been appointed to consider as to the repair and restoration of the parish church. The cost of intended improvements is estimated at upwards of 2,000*l.* upwards of one-half of which has already been promised.

Nailstone (*Leicestershire*).—The church of Nailstone was re-opened on 9th ult. It has been partly rebuilt, and completely restored, under the direction of Mr. Ewan Christian, of London, architect; the contractors being Messrs. Broadbent and Hawley, of Leicester. The style is Decorated. The sittings are all open, and made of stained pine-wood. Earl Howe contributed considerably more than 1,000*l.* The whole cost of the restorations, &c. including the value of the old materials, is about 1,700*l.*

Nottingham.—The ceremony of laying the foundation-stone of two new churches in this town, dedicated to St. Matthew and St. Mark, took place on Wednesday in last week. Towards carrying out the object more than 8,000*l.* have been already subscribed. The style of St. Matthew's is Early English; it is calculated to seat about 1,000 persons, greater part free. The cost of the edifice will be about 4,000*l.* This church will be erected in Upper Talbot-street, an increasing neighbourhood north of the town. St. Mark's is in the Tudor style. In this church there are 1,000 sittings, the major part free, if not, as well as those of the other edifice, wholly so. The cost will be about the same as St. Matthew's. It is situate on the Back Common, in the vicinity of a densely populated district, where a great number of Irish are located. The architect of St. Matthew's is Mr. H. Roberts; that of St. Mark's, Mr. R. Jalland, of Nottingham. The parchment containing the inscription deposited in the foundation-stone of St. Mark's, according to the *Nottingham Guardian*, was first thoroughly dried, and placed in a bottle, which was then raised to a high temperature, in order to expel as much atmospheric air as possible. The stopper, having been previously dipped in melted bees'-wax, was then fixed in its place. The bottle thus prepared was placed in a leaden case and melted pitch poured in up to the neck of the bottle. It was allowed to cool, and on it being ascertained that the stopper had not been disturbed by the hot pitch, the case was filled up and securely soldered down. Documents preserved on this principle (being in a partial vacuum), if no accident should occur to the case, must endure for ages.——The chief stone of the Artizans' Library was laid last week.——A mechanic of this thriving town made an application for advice lately to one of the magistrates, under the following novel circumstances:—He had been ejected from the house he occupied, and could not procure the shelter of a roof, for there was not a single house to let in the whole town.

Galashiels.—The foundations for a new Episcopal Chapel are being excavated in a park belonging to this celebrated manufactory of tartan wrappers. It is intended that the chapel shall be larger than that at Melrose, and be more ecclesiastical in its character.

Notices of Books.

Industrial Instruction: the Report of the Committee appointed by the Council of the Society of Arts to inquire into this Subject. London: Longman and Co. 1853.

The committee appointed by the Society of Arts, in January last, on this subject, consisted of the Rev. Dr. Booth, Mr. John Bell, Mr. Le Neve Foster, and Mr. Twining. They were appointed to take into consideration and to report "how far and in what manner the Society of Arts may aid in the promotion of such an education of the people as shall lead to a more general and systematic cultivation of arts, manufactures, and commerce," and though they do not appear to have given any precise recommendation on that head, they have collected a large number of valuable opinions on the subject of elementary education, and have published a volume which will aid its progress.

The deplorable want of education throughout the country is made evident in various ways. The educational qualification required for the admission of seamen's sons to the Greenwich Royal Hospital Schools is the same now that it *was fifty years ago;* but so low is the state of elementary education in the country, that it is found impossible to enforce this condition. The evidence as to the result of the improved system adopted in these schools is very encouraging.

The principal step urged is the establishment of a central body charged with the improvement of instruction; to admit into union with it colleges, mechanics' institutions, schools, and even private seminaries; which requirement is, to a certain extent, met by the foundation of the Department of Science and Art in connection with the Board of Trade.

Notes on the Causes of Fires in Buildings, arising from Grates, Furnaces, Stoves, Water, and Gas. By Wyatt Papworth, Architect. London: Layton. 1853.

The object of this little pamphlet is to direct attention to the weak points in the various methods adopted for warming buildings, and it is well calculated to answer that purpose. The following paragraph from the chapter on "Open Fires" may be usefully quoted:—

"The bad setting of grates is alone, very frequently, the cause of serious damage. The original grates consisted merely of what may be called a box or basket with or without hobs, and, when set, were enclosed with brickwork which was frequently covered with plain or ornamental tiles, so that no accident could very well happen; but in these days, when grates are already *set* by being enclosed with iron backs, sides, and top, they are but too often clumsily placed in the chimney opening. This operation often leaves a space, larger or smaller, according to the size of the opening, between the back and sides of the grate and of the brickwork, into which the soot falls, and from the want of some means of access, it is never cleaned out. The grate being one day overheated, sets the soot on fire, spreading to the dado or woodwork adjoining, and, perhaps during the night, the inhabitants are aroused, sometimes hardly soon enough to escape from destruction. The security of the setting should be carefully provided during the insertion of the grate."

Miscellanea.

The New Hall in Buckingham Palace.—According to the newspapers, the ceiling has been painted in oil, and panelled with a great variety of geometrical forms, and adorned with shields of arms, heraldic badges, the insignia of the national orders of chivalry of the Three Kingdoms, the badge of the Prince of Wales, and the monogram of the Queen and Prince, with wreaths of flowers and the various mottoes interspersed. A large oval occupies the centre of the ceiling, in which are the shields of Her Majesty and His Royal Highness Prince Albert, surrounded by a wreath of flowers. On the one side is the golden harp of Ireland in a circle of deep blue, and on the other the lion of Scotland. The stars of the orders of the Garters and St. Andrew, with the rose, shamrock, and thistle, on squares of vermilion, are arranged so as to form the points of the geometrical forms into which the ceiling is panelled by colour. The architectural ornaments of the architrave, frieze, and cornice, are also picked out with vermilion and white, blue, gold and white, and green and white.

THE IRON TRADE.—New complications are being introduced into this trade in consequence of the determined stand for increased wages even in the midst of falling prices. The great strike at the Llynfi ironworks in Wales still continues, and there is no prospect of an amicable adjustment. Vast numbers are leaving the place in order to seek employment elsewhere; and soon it is expected that the whole body, numbering 3,000, with their families, will have left. In face of the feeling displayed in this strike, some of the iron-masters have promised an increase of wages,—especially, we observe, Lady Charlotte Guest. We have no doubt that wages might be increased even with falling prices, when we consider that the rapid strides recently made upwards with prices were by no means co-ordinately accompanied, to the full extent, at least, by equivalent rises of wages. The demand for a rise at present, however, will certainly tend to sustain prices, whatever ultimate damage that may do to the best interests of the trade, which would have been in a far more flourishing condition just now than it has ever been since the great railway mania, were it not that the foreign demand for iron was so seriously checked by the reckless and uncalled-for rise in prices. The preliminary meeting was to be held today (Thursday), and no doubt strenuous exertions have been used to prevent a fall, in nominal price at least, though already preceded by a *bonâ fide* fall in actual trade transactions. There is a talk of blowing out furnaces too, as a break to the anticipated fall.——Mr. Blackwell, an ironmaster of Dudley, has stated that the make of iron in that district had risen from 600,000 tons per annum in 1825, to 7,000,000 in 1852.——The *Mining Journal* contains the following statistics as to steel:—In Sheffield there are sixty-two establishments, with fifty-six furnaces, for converting iron into steel, and seventy-four steam-engines, with 1,353 horse power. Three sorts of steel are manufactured—blistered, shear, and cast. Last year the quantity of such "unwrought" steel sent from Sheffield to Liverpool for shipment, chiefly to the United States, but also to the Mediterranean and East Indies, amounted to 80,000 bundles of 1¼ cwt. and 22,000 long narrow cases, averaging 5 cwt. each, being altogether 10,500 tons in weight, and 425,000*l.* in value. Besides these, 4,000 casks of files, weighing 2,000 tons, worth 230,000*l.* were forwarded from Sheffield, through Liverpool, principally for shipment. The manufacture of steel in Sheffield is now said to be 2,000 tons monthly, with every prospect of an increase of 25 per cent.: the bulk is for exportation through Liverpool.

THE PROPOSED PARK FOR FINSBURY.—On Tuesday night a very crowded meeting of the inhabitants of Finsbury was held in Sadler's Wells Theatre, to consider the best means of securing the proposed Albert Park. Lord Robert Grosvenor, who occupied the chair, said he much regretted their repeated disappointments. Three successive administrations had acquiesced in the project, but all had gone out of office ere it could be realized. The present Government also admitted the necessity for the proposed park, but had not promised to do anything to it yet. Mr. Duncombe moved the first resolution, deprecating the delay, and suggested that the chairman should propose, in the House of Commons, an address to the Queen, praying that her Majesty would direct her ministers to form a park for the benefit of her liege subjects of the borough of Finsbury and the City. Mr. Woodward, F.R.S. seconded the resolution, which was then carried without a dissentient voice. The Lord Mayor moved the next resolution, which affirmed the great importance of at once carrying out their object. There ought, he said, to be as little further delay as possible; for what would now cost 200,000*l.* would next year cost perhaps 400,000*l.* The resolution was also unanimously carried. The chair was then taken by Mr. Woodward, the chairman requiring to attend the baptism of the young Prince Leopold, and some further business having been disposed of, the meeting separated.

THE SCHOOL OF ART FOR WOLVERHAMPTON.—The foundation-stone of the Wolverhampton and South Staffordshire School of Practical Art was laid on Tuesday, in last week, by Lord Hatherton. Upwards of 300 ladies and gentlemen afterwards partook of luncheon, at the Exchange, under the presidency of the Mayor. Amongst those who took part in the proceedings were Lord Hatherton, Lord Lewisham, Sir Robert Peel (who gave a donation of 50*l.*), Dr. Playfair, Mr. Thornely, M.P. the Rev. J. B. Owen, and Mr. George Dawson. Dr. Playfair, as secretary for science in the Department of Practical Art, dwelt upon the importance of extending the plans of the school, so as to include science as well as art. The building, which is to be "classical" in its elevation, will be erected in Darlington-street.

STAMPED LETTER PAPER.—A correspondent, under the signature "Themistius," urges that stamped postage letter paper should be issued, and gives some valid reasons in support of the proposition.

METROPOLITAN ASSOCIATION FOR IMPROVING DWELLINGS OF INDUSTRIOUS CLASSES.—The annual general meeting of this society was held on Thursday in last week, at the London Tavern, Sir Ralph Howard, bart. M.P. in the chair, supported by Lord Robert Grosvenor, M.P. Viscount Ebrington, M.P. Admiral Lord Radstock, W. A. Wilkinson, esq. M.P. Dr. Southwood Smith, &c. The ninth report stated, in reference to the piece of land in Nelson-street (formerly Guy-street), Southwark, that a plan has been prepared for accommodation, for 108 families, in twelve sets of four rooms, sixty-six sets of three rooms, and thirty sets of two rooms, with scullery to each; and that tenders for the erection of this building were sent in by thirteen contractors, from which, in consequence, it was presumed, of the present high price of building materials and labour, the directors calculated that these dwellings would cost 215*l.* a set, exclusive of land, while similar dwellings in the Old Pancras-road and Albert-street cost 160*l.* a set; making a difference on the 108 sets of 5,940*l.* They, therefore, recommended that the new dwellings be deferred. The report went on to state, that the total cost of the society's dwellings for families was 33,155*l.* 2s. and the receipts 1,596*l.* 2s. 2d. showing a net per-centage of nearly 5*l.* The superintendent of the Soho Chambers had left, with about forty of the tenants, and gone into an establishment opened by him, but since relinquished. Various improvements had since been made in these chambers. The chairman, in moving that the report be adopted, expressed his regret that the directors were enabled to declare a dividend of only 1½ per cent. But they had now a larger capital on which to declare a dividend. They had not expended that capital in building, therefore it had been almost unproductive. Many rooms in Albert-street, Spitalfields, were still unlet, only 140 rooms out of 230 being let; and in the Soho Chambers several rooms were not let, principally owing to the inferior description of the apartments. They could not, however, account for the Albert-street rooms not being all let, and assuredly that circumstance had thrown the directors out in their calculations. He understood that if they were let, the sum they now had, and a small sum in addition, it would make a difference in respect to the accommodation for families of 1 per cent. and so also in the case of houses for single men another 1 per cent. which would thus bring the interest up to 4 per cent. supposing they had a capital of 100,000*l.* In the society in which the Earl of Shaftesbury took a deep interest, it appeared that in one house they cleared 12 per cent. but that fact was owing to its being a single house. Dr. Southwood Smith said this association would not achieve its object until it made a return of 5 per cent. on the capital embarked; though he was far from being of opinion that the money success was the only consideration with the society. The object of the institution was to show the great moral and physical influence of the house upon the individual; and the exertions of this association completely established the point in respect to the rate of mortality in their several establishments.

PLYMOUTH MARKET COMPETITION.—Fifteen designs were received for the re-arrangement of the Market-place, and the committee have awarded the first premium of one hundred guineas to the design furnished by Mr. Christopher Eales, architect, of London, and the second premium of twenty-five guineas to Mr. R. B. Grantham, of London. Many of the designs presented architectural elevations of considerable merit, but the principal object of the competition, we are told, was to secure good arrangements in preference to architects' effect. A correspondent says, none of the local architects supplied drawings (with the exception of one from Devonport), and the only reason that can be assigned for their absence may be attributed to a clause in the conditions which prevented the successful architect from claiming the superintendence of the work—a course injurious to the architect and prejudicial to the profession.

BRITISH ARCHÆOLOGICAL ASSOCIATION AND LONDON.—The British Archæological Association propose to make a third visit to the City Antiquities on Thursday, the 7th inst. The order of proceedings will be to assemble at Crosby Hall, Bishopsgate-street, at half-past one o'clock, where the Rev. Mr. Hugo will read a paper on the Hall, its history, architecture, &c. Thence the association will proceed to inspect the churches of St. Helen's, St. Andrew Undershaft, and St. Botolph, Bishopsgate-street, on which some observations will be offered.

WHERE SHALL WE GO?—I would suggest the practicability of advertising by means of placards at the various railway stations, telegraph offices, and at other suitable places through London the state of the weather at the different towns of England and at the many haunts of excursionists: this, I am under the impression, would be a great public convenience, for we then should know when the weather here (London) was unfavourable, that we have only to go a few miles out or so, where perhaps a fine summer-day is charming its inhabitants. The expense incurred in the above by the several companies would be well refunded by the great increase of passengers in unpleasant weather; for could we but know that a dry spot and a clear sky availed us elsewhere, there are thousands who would gladly avail themselves of the opportunity of taking a little pleasure.—J. R.

METALLIC NAME AND NUMBER PLATES, LETTERS, &c. FOR STREETS OR HOUSES.—Mr. Thomas Motley has specified a patent for casting and forming in a cheap and ready manner tablets, letters, and figures, for indicating names, numbers, &c. He uses a frame of wood, with separate letter patterns, hollow and otherwise, to be set up in it like types, and forming moulds in sand or composition as described, to be run in with metal, so as to cast a tablet in which the letter will be either hollow or projecting.

THE SUBMARINE TELEGRAPHIC UNION BETWEEN BRITAIN AND BELGIUM.—The Duke de Brabant, the heir apparent of the throne of Belgium, has opened the telegraphic communication between Brussels and the British Parliament Houses, where Lord de Mauley, the Duke of Hamilton, and various other noblemen and gentlemen, including Sir William Cubitt, Mr. Wollaston, some of the foreign ambassadors, &c. were in attendance, and transmitted the Duke of Cambridge's apologies for non-attendance. A question was put by Lord Howard de Walden in Brussels to his friend Lord Cadogan at Westminster, and replied to by the latter, all in thirty-eight seconds of time! What "lying wonder" of ancient magic or witchcraft was ever more astonishing—more apparently miraculous—than this real and true wonder of modern science?

CAB HORSES.—A correspondent says it would be a great boon to the feelings of every true Englishman if the cowardly way of flogging horses over the eyes was not allowed: nearly half the cab and omnibus horses are blind from this disgraceful system.

TENDERS

For the sewerage of the Askew estate, Hammersmith. Mr. A. C. Bean, architect:—

Eldred	£1,499	0	0
Lockwood	1,357	10	0
Emmins and Huxley	979	18	8
Chamberlen (accepted)	968	10	0

For pulling down a cottage and erecting a villa residence at Strand-on-the-Green, under the same architect:—

		Deduct for old Materials.
Chamberlen	£1,046	— £86
Hurst	1,008	— 80
Bray	968	— 30
Beaver (accepted)	862	— 50

For almshouses for the Clothworkers' Company, to be erected near Frog-lane, Islington. Mr. Samuel Angell, architect:—

Pritchard	£2,084
Hopkins and Roberts	1,985
Jay	1,945
Rowland and Evans	1,920
Hebb	1,695

TO CORRESPONDENTS.

"*Tiles.*"—"J. D." asks for "a recipe for burning tiles *blue*. The earth, after being burnt in its natural state, is a light red."

"F. B." (we are not in a position to offer an opinion) "J. R." "J. K." "Camp Hotel," "G. P." "Mr. P." "J. C." (thanks). "Mr. T." "R. H. P." "A." New Buildings (we cannot refer). "Rouse them." "Your Weekly Reader." "J. L." "H. C." "C. and G." "P. W." "X. L." (will see in "Buildings Act" the conditions under which a district-surveyor may so act), "F. R." "O. A." "I. B." "G. J. R." (the necessary details are not nice). "G. G. S."

NOTE.—"The Plea for the Revival of True Principles of Architecture in the Buildings of Oxford," given in our last, was published (by J. A. Parker) as a pamphlet, with illustrations, a few weeks ago.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

NOTICE.—Whereas her Majesty's Solicitor-General, after hearing the matter this day, did allow a grant of LETTERS PATENT for the new invention of CHAPPUIS'S MYRIASTRATIC REFLECTOR, for the better diffusion of daylight: this is to give notice, that any parties infringing the said invention will be proceeded against under the Act 15 & 16 Vic. cap 83.—Dated this 8th day of June, 1853.

BARLOW and CO. Agents for the Patentee.

Office for Patents, 33, Chancery-lane.

TO STONE MERCHANTS AND PAVIORS.

THE Advertiser is willing to treat for a MOIETY or other PART of a good and old-established BUSINESS in LONDON.—Address, Z.O. Office of "The Builder," stating real name and locality.

PARTNERSHIP.—An Architect experienced in designing Public Buildings, and who is practising in London, desires to unite his practice and enter into PARTNERSHIP with an established practitioner who may require the aid of a competent and assiduous associate.—Address, CREDENDA 73, Farringdon-street, City.

TO SURVEYORS AND OTHERS.

THE Tunstall Commissioners are in want of a competent person to fill the several offices of SURVEYOR of HIGHWAYS of the township, COLLECTOR of RATES, INSPECTOR of MARKET, and NUISANCES. The party applying must be well acquainted with road making, surveying, and building; will have to devote his whole time to the several duties which will devolve upon him; and must be prepared to enter into a bond, with sufficient surety, duly to account for all moneys which may come into his hands. Persons desirous of applying for the above appointment must send in to me testimonials, with the amount of the salary they will require, under seal, addressed "Tender for surveyor," on or before 1st day of AUGUST next. Any further information may be had on applying to

THOMAS LLEWELLYN, Clerk to the Commissioners.

Tunstall, Staffordshire, 23rd June, 1853.

ENGINEERING PUPIL.—The Town Surveyor of Bangor has a VACANCY for an ARTICLED PUPIL.—For further information address to The Town Surveyor, Bangor, North Wales.

THERE is a VACANCY for a PUPIL in the Office of an Architect (in one of the first provincial cities), which offers unusual advantages to a well-educated Youth. Premium, 150*l.*—Address, T. H. M. Office of "The Builder," 1, York-street, Covent-garden. June 21, 1853

AN IN-DOOR APPRENTICE WANTED, to the HOUSE-DECORATING in general, where he will be treated as one of the family.—Address, Wm. BULLEY, Decorator and House Agent, Western Villas, Ealing, Middlesex.

AN ARCHITECT in London desires to receive a Young Gentleman as an ARTICLED PUPIL, either in or out of the house.—Letters addressed to W. T. care of Mr. Lloyd, 62 Chancery-lane, will be forwarded.

FOREMAN CARPENTER WANTED.

THE Melbourne and Colonial House Investment Company require the immediate services of an active and intelligent FOREMAN CARPENTER, accustomed to the construction of houses for export, and with a knowledge of drawing.—Application to be made by letter only, with references, at the Offices of the Company, 13, Gresham-street.

1st July, 1853. A. KINTEA, Managing Director.

WANTED, an experienced Man as CLERK and general SUPERINTENDENT of WORKS, personal with the wing and measuring. -Apply, by letter, addressed W. S. Peake's Coffee-house, Fleet-street.

WANTED, a Man to WORK a SAW-BENCH. One that has been used to a timber-frame would be preferred.—Apply to J. WILLSON, Builder, 130, Great Suffolk-street, Southwark.

WANTED, by a Builder in the county of Middlesex, eight miles from London, a CLERK, who understands book-keeping, estimating, taking out quantities, and making working drawings.—Address, stating terms, where last engaged, to J. W. Builder, Post-office, Edmonton.

TO PAINTERS AND GLAZIERS.

WANTED, Twelve Miles from Town, an active, steady, respectable Man as PAINTER, GLAZIER, and GRAINER, who thoroughly understands his business; if satisfaction is given the situation would be permanent.—Apply to Mr. JOHNSON, Carpenter, &c. Surbiton Hill, near Kingston, Surrey.

MANCHESTER MARBLE WORKS

WANTED, several experienced MARBLE MASONS.—Apply at 133, Piccadilly, Manchester.

WANTED, a respectable Man, that is capable of erecting Four-roomed Cottages, and Superintending the whole of the Building, from the foundation to the completion, keep the books, pay and receive money, measure and square work. To save trouble on both sides, none need apply who cannot deposit security for the men's wages passing through their hands.—Apply, by letter only, to Messrs. HARRIS and SHERLOVE, General Contractors, Long Ditton, Surrey.

WANTED, by a Builder in the Country, a CLERK, who thoroughly understands superintending and measuring up work, and is a good draughtsman. To a suitable person the situation would be permanent.—Address, stating terms and where last employed, to A. O. 71, Fleet-street, London.

TO PARENTS AND GUARDIANS.

WANTED, in a Builder's Office, a respectable and well-educated YOUTH. To save time, no premium required. No salary first six months. No Agents need apply.—Address "BUILDER," Post-office, Brick-lane, Spitalfields.

WANTED, an OUT-DOOR APPRENTICE to the CARPENTRY and JOINERY business, situate in the City.—Apply to Mr. C. GEARY, Farmley Iron Company's Wharf, Limehouse. A small premium required.

WANTED, two first-rate ARCHITECTURAL DRAUGHTSMEN.—Apply, with specimens of drawings and references, at No. 104, Southwark-bridge-road, between the hours of TEN and TWELVE, on MONDAY, the 4th July

WANTED, an ARCHITECTURAL DRAUGHTSMAN, fully competent to get up working and other drawings.—Apply, by letter, stating age, terms, and last engagement, to Mr. COOPER, Stationer, &c. Union-street, Birmingham.

TO ARCHITECTS.

WANTED, a SITUATION as CLERK of the WORKS. The Advertiser is fully competent in the practical knowledge required in construction; also well acquainted with detail and other drawings. The necessary references given on application.—Address, A. B. Z. Post-office, Derby.

TO BUILDERS AND OTHERS.

WANTED, by a respectable Man, as FOREMAN, who well understands paper-hanging, glazing, painting, and the general business of the trade. The town or country. No objection to a country job.—Address to DELTA, Traditional Coffee-house, 1, Little Turnstile, Holborn

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WANTED, to place a well-educated Youth as an IN-DOOR APPRENTICE. A premium will be given.—Address, stating particulars, Mr. GARDNER, Bookseller, Ingatestone.

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WANTED, an ENGAGEMENT by a Gentleman who has lately completed his articles. He has been accustomed to make fair and working drawings, and to attend to the general routine of office work. London preferred.—Address, G. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS.

WANTED, by a Practical Joiner, a SITUATION as SHOP or GENERAL FOREMAN. Unexceptionable References from the situation he is about to leave.—Address "G. H." 5, Princes-terrace, Hyde-park, London.

TO PLUMBERS AND BUILDERS

WANTED, by a Young Man, a SITUATION as PLUMBER; competent in all its branches, also in the fixing of baths. Satisfactory reference can be given as to ability. No objection to fill up his time in painting or glazing. No objection to the country.—Address to Mr. BRITTON, No. 20, Caroline street, Arlington-street, Camden-town.

TO ARCHITECTS AND SURVEYORS

WANTED, by the Advertiser, a Situation in a London Office; is a good draughtsman, with a knowledge of perspective, and conversant with the requirements of an architect's office. Salary moderate.—Addrs s, B. B. B. Office of "The Builder," 1, York-street, Covent-garden.

A YOUNG MAN from the country, about 20, wishes to engage himself as an IMPROVER to a PLASTERER. He is just out of his apprenticeship, and can have a good character.—For particulars apply to "G. Y." No. 27, Russell-street, Hastings, Sussex

TO BUILDERS, PAINTERS, &c.

A YOUNG MAN, accustomed entirely to London work, is open to an ENGAGEMENT (either in town or country) as GRAINER. Can make himself generally useful in the other branches of House Painting, and Write if required.—Address, prepaid, "R. W." Post-office, Greek-street, Soho.

TO ARCHITECTS.

AN ARCHITECT'S ASSISTANT, accustomed to prepare finished and working drawings, and a good colourist, is desirous of an ENGAGEMENT. References, &c. given.—Address "S." 23, Chenies-street, Bedford-square.

TO NOBLEMEN AND GENTLEMEN.

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JOSEPH SOUL, Secretary.

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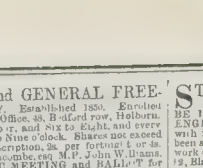
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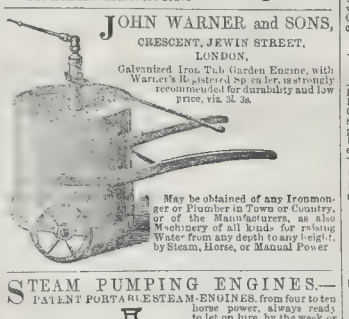
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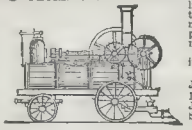


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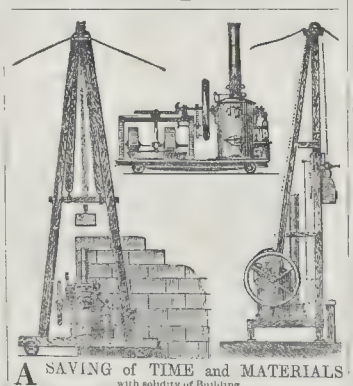
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W. R. FRY and SON can also offer every advantage to purchasers of timber and deals of any description; the extensive mills afford convenience to purchasers for immediate conversion of their goods, on the most mod rate terms. All sawn and prepared goods delivered free to any part of London, or carefully packed and delivered at any of the Railway Stations. Lists of prices forwarded, post-free, on application.

N.B.—Sawing and planing for the trade.

THE LIBRARY of ART and MANUFACTURES of the Department of Science and Art, at Marlborough-house, Pall-mall, containing Books, Prints, and Drawings in relation to all kinds of Ornamental Work, is NOW OPEN daily from TEN in the morning until NINE at night, except on Saturdays, when it closes at SIX.—Admission to the week, 6d.; for the month, 1s. 6d.; for the year, 10s. 6d.—For further information, application should be made to the Librarian.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

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THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture :—

PACKED IN 100 FEET BOXES, THIRDS QUALITY.

Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.
6	by	4		12	by	10		16½	by	12½		18	by	13		18	by	14	
6½	,,	4½		12½	,,	10½		17	,,	12		18½	,,	13½		18½	,,	14½	
7	,,	5		13	,,	10		17½	,,	12½		19	,,	13		19	,,	14	
7½	,,	5½		13½	,,	10½		18	,,	12		19½	,,	13½		19½	,,	14½	
8	,,	6		14	,,	10		18½	,,	12½		20	,,	13		20	,,	14	
8½	,,	6½		14½	,,	10½		19	,,	12		20½	,,	13½		20½	,,	14½	
9	,,	7		15	,,	10	19s.	19	,,	12½	19s.	21	,,	13	19s.	21	,,	14	19s.
9½	,,	7½		15½	,,	10½		19½	,,	12½		21½	,,	13½		21½	,,	14½	
10	,,	8		16	,,	10		20	,,	12		22	,,	13		22	,,	14	
10½	,,	8½		16½	,,	10½		20½	,,	12½		22½	,,	13½		22½	,,	14½	
11	,,	9		17	,,	10		21	,,	12		23	,,	13		23	,,	14	
11½	,,	9½		17½	,,	10½		21½	,,	12½		23½	,,	13½		23½	,,	14½	
12	,,	9		18	,,	11		22	,,	12		24	,,	13		24	,,	14	
12½	,,	9½		18½	,,	11½		22½	,,	12½									

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In Cases, 200 feet ..... £1 16 6 } In sizes 40 by 30.
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BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 8 inches and up wards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

TO ARCHITECTS AND BUILDERS.

FOR SALE, PLATE-GLASS for SHOP-WINDOWS.—The Thames Plate-glass Company have now ready several large plates of suitable size and strength, to form an entire shop window with one plate only. Sizes: 2 1 inches by 114 in. lbs., 200 inches by 114 inches, 132 inches by 100 inches 185 inches by 100 inches, 175 inches by 100 inches, 141 inches by 100 inches, 118 inches by 90 inches. They have also made arrangements for supplying promptly well annealed Light Colour Rough Plate Glass, of various thicknesses and of any reasonable dimensions.—Apply to the Secretary, Savoy Wharf, Strand.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broadstreet, Birmingham; established 1807. Richly cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for houses or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD-STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 26, SOHO SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

PATENT and BRITISH PLATE GLASS. JAMES HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff of Prices for the above will be sent on application; they will also, on receipt of particulars, furnish estimates for any description of Glass now manufactured.—Patent Plate, Sheet, Crown, and Ornamental Window Glass Warehouse, 35, Soho-square, London.

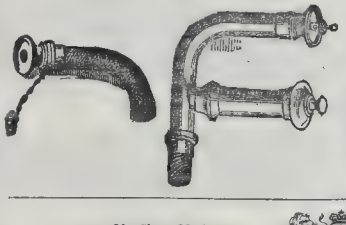
TARPAULINS for COVERING ROOFS during Repairs, SCAFFOLD CORD and every description of ROPE used by Builders upon the most moderate terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore-street City, Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in Railways, to the important advantages to be derived from the use of their Patented Inventions, not only in the saving effected in first cost and maintenance, but also in the durability of the roads so constructed, and the ADDITIONAL SAFETY ensured by their adoption beyond any other known systems.

The Permanent Way Company's various Patents are now adopted to an extent of nearly 800 miles on railways in this country and abroad; the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to an extent of 300 miles, resulting from a close investigation of its merits recently made by some eminent French Engineers.

The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.

Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 26, Great George-street, Westminster, where every information as to the cost of constructing the different systems may be obtained, on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN Secretary.



WHISHAW'S REGISTERED
IMPROVED TELEKOUPHONON
FOR SPEAKING-PIPES.

By means of this invention speaking-pipes may be rendered more generally available for Public Buildings, Club Houses, Noblemen's Mansions, City Warehouses, Offices, &c. &c. It consists of a whistle-mouthpiece of ivory, wood, or metal, with an indicator attached, by means of which, in case of two or more speaking-tubes being carried into one room, the mouthpiece from which a whistle proceeds is readily ascertained.

The newly-registered invention also embraces a plan (as shown in the right-hand figure annexed) to supersede the necessity of blowing into a speaking-pipe when the whistle at the further end is required to be sounded.

Manufactured solely by
KEPP and COMPANY, 40, 41, and 42, Chandos-street, Charing-cross;
And to be had retail of all respectable ironmongers.

By Her Majesty's Royal Letters Patent

BRICKS MANUFACTURED BY
BEART'S PATENT BRICK COMPANY,
CAN NOW BE PURCHASED AT THEIR
LONDON DEPOT,
GREAT NORTHERN RAILWAY GOODS STATION, KING'S-CROSS,
EITHER DELIVERED INTO CARTS OR BOATS, AT
THIRTY SHILLINGS PER THOUSAND.

BEART'S PATENT BRICK COMPANY invite the attention of ARCHITECTS, BUILDERS, and others interested in the building trade, to an inspection of these very superior Bricks. Among the advantages they possess over the ordinary make, the following may be enumerated :—

The form of the Brick and the quality of clay used ensure great strength and durability.

The perforations enable a uniform drying in the clay, ensure an efficient and thorough burning, and cause them to bed with extraordinary firmness in either mortar or cement.

Being lighter, the cost of carriage is lessened.

Their slightly absorbent property especially recommends them where DRY walls are required, and being of a

BRILLIANT WHITE COLOUR

they may be used as well for EXTERNAL FACINGS as inside work.

Samples may be obtained and Specimens of work seen by applying as above.

N.B. Delivered without additional charge at any Station on the Great Northern Railway between London and Hitchin, in quantities of not less than 3,000.

WORKS: ARLSEY, BEDFORDSHIRE.

London, 1st July, 1853.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.

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Contracts for the supply of large establishments.

SURVEYING, ARCHITECTURAL, and ENGINEERING ESTABLISHMENT, for preparing Gentlemen for Surveyors, Architects, Engineers, Levellers, Draughtsmen, Measurers, Valuers, &c. and for giving EVENING INSTRUCTION, in Architecture, Civil Engineering and Mechanical Drawing, Colouring, Perspective, Mathematics, Mechanics, Writing Specifications, Taking out Quantities, Preparing Estimates, &c. &c. Terms, one guinea per quarter.—For prospectuses, &c. apply at the Offices, 24, Guildford-street, Russell-square.

HEAL and SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post. It contains designs and prices of upwards of ONE HUNDRED different bedsteads; also of every description of bedding, blankets, and quilts. And their new ware-rooms contain an extensive assortment of bed-room furniture, furniture chintzes, damasks, and dimities, so as to render their establishment complete for the general furnishing of bed-rooms.

HEAL and SON, Bedstead and Bedding Manufacturers, 196, Tottenham-court-road.

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices :—

Steel Drawing Pens, with ivory handles	4s. 0d.
do. do. brass-jointed do.....	4s. 0d.
do. do. German silver do.	4s. 6d.

And every other instrument of the best workmanship equally low.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Hale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,

12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

TESTIMONIALS.

"Brighton, Croydon, and Dover Railways,
Locomotive Department, New Cross, Sept. 25, 1845

"SIR,—In reply to yours respecting the 'Patent Protoxide Paint,' have much pleasure in stating that what has been used in this establishment has been highly approved of, and I consider it the best description of paint yet used, particularly for iron-work, for which purpose I can strongly recommend it.

"I am, Sir, your obedient servant,
"BENJ. CUBITT."

"Regent's Canal Iron Works, Eagle-wharf-road, Dec. 5, 1845

"SIR,—As it is always my wish to render justice to every one, as far as it is in my power to do, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint,' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will, moreover, use it for all my own work, and wish I had known it somewhat earlier.

"I am, Sir, yours respectfully,
"HENRY GRISSELL,
"Pro H. and M. D. Grissell.

"P.S.—It must be good for Boilers."

"St. Day, near Redruth, Cornwall, 7th April, 1848.

"SIR,—We have used your 'Patent Metallic Protoxide Paint extensively about various parts of machinery with great advantage. We find it prevents oxidation, and stands any ordinary heat without being the least blistered or injured. About two years since we painted with it the interior and exterior of some steam-boilers and steam-tubes, and they still remain in the most perfect state, and we consider it of great value for all iron-work.

"HOCKIN and LOAM, Engineers."

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company
No. 16 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, destroying all growth vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 15s. and 21s. each.

DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 10s., and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price, only 8s. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 28s. per cwt. or 4s. per stone.

G. BELL and CO. Steam Mills, 2, Wellington street, Goswell-street, London.

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.

HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom.

Now supply this innocuous substitute for White Lead, either in Powder or Paint, of genuine purity (Warranted-sale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).

In 1lb. Kegs, and upwards, from the Depôts of their respective Agents:—

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T. R SUMNER and CO. Lord-street.
IPSWICH. RIDLEY and GRIMWADE.
IRELAND.—P. REILLY and SONS, 15, Cope-street, Dublin.

ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent men, its superior properties for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard-street, London.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the mineral primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark in Roll by Messrs. BLUNDELL, SPENCE, and CO., when ground and ready by Messrs. T. B MORRELL and CO.; and by the Company's Grinding Agents. In London, Messrs. CHARLES DEVAUX and CO., with depôts at 6, King William-street, City. Mr. CHARLES JACK, wholesale at 4 retail agent, 8, Tottenham-court, New-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO. of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, previously confined by its cost to the use of the artist, is now, by Hubbuck's Patent, reduced to a less price than White Lead.

The principal characteristics of HUBBUCK'S ZINC PAINT are Economy, Health, Beauty, and Durability.

Builders and Contractors find Hubbuck's Paint the only one adapted to all their purposes; possessing the great desideratum of economy, combined with its high excellence as a paint, it ranks alone. Contractors effect a saving of 25 per cent. by using HUBBUCK'S ZINC PAINT.

HUBBUCK and SON feel it necessary a caution should be entered against imitations of their Paint. These manufactures, containing frequently pernicious ingredients, are baneful to health and worthless in use, whilst the inexperience of these imitators in the production of pigments is evidenced, not alone by the coarse grain appearance, but also by the deficiency of that body in their produce, which is known to the painter to be all-essential. That an imposition be not practised, therefore, notice that the cask is marked with the name of the original manufacturer, thus—

HUBBUCK—LONDON—PATENT.

If not so marked, the reason may be inferred.

Every information in the circular to be had of THOMAS HUBBUCK and SON, Paint and Varnish Manufacturers, Upper East Smithfield opposite the London Docks, London.

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE,
Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and from that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxychloride Paint will cover as much surface as 100 lbs. of the best White Lead, the skinning of coat being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames-street.
	Mr. Richd. Cooke, 7, Size-lane.
LIVERPOOL	Messrs. Ransom and McGowan.
MANCHESTER	Mr. James Douglas
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
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ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster; and Seel-street, Liverpool.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well known hard stuccoes dry quickly, and can be painted upon within a few days.—Made only by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ROMAN and OTHER CEMENTS. Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, from the 1797 first patent, and PARKER'S ROMAN CEMENT, also Tarras and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots, Trusses, &c.

Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS at Millwall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Stangate-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

ARTIFICIAL HYDRAULIC or PORT- LAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in three essential properties; that it is not affected by frost, and can be used in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements read at the Institute of Civil Engineers, to be obtained from the makers JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin) much improved the quality of this cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, MR. HENRY ROBINSON, 31, King-street, Liverpool.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same in 1838, together with the most perfect uniformity in colour, will ensure to them a continuance of that patronage with which they have so long been favoured. Orders received at the Works, and at Great Scotland yard, Whitehall.

PORTLAND CEMENT.—6, South Wharf, Paddington. CHARLES RICHARDSON has the greatest confidence in introducing for sale the above superior CEMENT, being of uniform colour and quality (a deideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat and is more durable than any other Cement; does not vesciate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for use where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be and contrary to the statements put forth by those who have no supply. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND-BRIDGE; and at Thornhill Wharf, Cal donian Bridge; and No. 8, Wharf, Paddington.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime of this mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

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ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

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WARWICKSHIRE BLUE LIAS LIME. —CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c and for concrete foundations, will no doubt secure a recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOB, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

PERMANENT STUCCO WALL, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other.—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One gallon will cover two square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at their Warehouse, 28, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.

The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

The Builder.

SATURDAY, JULY 9, 1853.

TURNING over Mr. Clutton's new work illustrative of the Domestic Architecture of France has revived in us a whole host of recollections of early rambles in search of the beautiful,—recollections which never die, and afford a large return on the amount of time and money expended in the search. The book before us * contains sixteen plates in lithography and a variety of woodcuts, illustrating principally Tours, Blois, Bourges, Dijon, and Beaune,—a district lying at a short distance to the south of Paris, both east and west. The author confines himself to buildings of the fifteenth century, in which France is rich; and he claims for them praise, not as the best development of the domestic architecture of the middle ages, but, first, for the distinct and individual expression which is given to every member of a building, and, secondly, for the great beauty and energy which the details display, in which peculiarity he finds the class to be "far superior to our own domestic art of the Tudor period,"—a later development, by the way. He says,—

"To recommend at the present day the erection of houses such as those in Burgundy and on the banks of the Loire, would be to recommend almost an impossibility, inasmuch as they belong more particularly to stone-producing countries, and their execution would be found to require both greater skill in our workmen, and a larger expenditure, than the present practice of architecture admits of. Nevertheless, it is quite possible to obtain many useful and valuable suggestions from a careful study of the composition of these buildings, and of their details. Thus, we may learn to employ fewer and bolder mouldings, and to avoid making them all of one size (as is too often the case). We may not be able to enrich the exteriors of our staircases with sculpture and heraldry, but we can follow the example of using sculptured foliage only where it is perfectly appreciated, and of making one broad leaf perform the duty of half-a-dozen small ones; and there can be alleged, we think, no very valid reasons why high roofs, large dormer windows, and *girouettes*, with their beautiful accompaniments of skill in metal-work, are not as applicable at the present time as in the fifteenth century."

The letter-press which precedes the views is discursive, but in the second part he discusses, with more connection, the several parts of a building,—windows, doors, gateways, staircases, roofs, and metal-work. The *tourelle* containing the staircase was wisely made the chief feature in the domestic structures of that period, rising above the rest of the building and terminating in a roof of its own. In some cases the staircases in the larger houses are open, and display striking effects of light and shade, with clever adaptations to circumstances and victories over difficulties,—always gratifying to the mind, as they give evidence of thought and power. The staircase in the Palace at Blois shows a large circular newell, very highly enriched with shafts. The imitation of the twisted columns of Italy in this specimen, and other peculiarities in the details, show that Italian art was then overcoming that of the middle ages.

The advantages of a staircase in a fire-proof enclosure of its own ought not to be lost sight of in our own day.

To illustrate some brief remarks on knockers Mr. Clutton gives two, for one of which we will find room. It is from the Hôtel Dieu, at Beaune, and has been re-made, but "is equal to any ancient work."



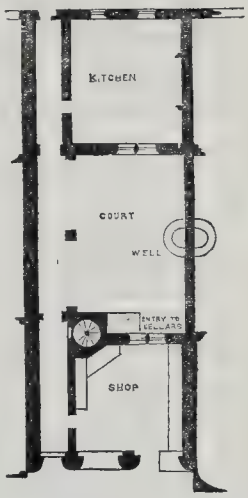
The example he gives of a fifteenth-century shop, built of stone (many of that period were of wood) is from Amboise, on the Loire; and here



it is, back and front, with the plan, which will serve to show that the building consists of *two parts*, connected by an open gallery, made of wood. The openings in the shop for the display of goods have no windows, but are protected by a pent-house. The wooden galiery



is two stories in height, and the water-well, it will be observed, is made to serve two houses.



In another example, a house at Chinon, the buildings, instead of being connected by a gallery, form three sides of a square, and are enclosed on the fourth by a wall, in which is the gate of entrance:—

"In design and composition this building has points of considerable value, as in the treatment of the irregular-sized gables and their connecting wall, in the position and form of the *tourelle* containing the staircase, which assist to give bulk to the narrower gable, and thus to restore its equilibrium with the larger one; then in the delicately enriched door of entrance to the *tourelle*, protected by the enclosed court; whilst the simple decoration to the archway next the street is quite in character with its liability to injury."

A view of this house we have given on page 436.

* "Remarks, with Illustrations, on the Domestic Architecture of France, from the Accession of Charles VI. to the Demise of Louis XII." By Henry Clutton, Architect. London: Day and Son, Gate-street, Lincoln's-inn-fields. 1853.

Those who read our recent notice of Parker's "Domestic Architecture of the Middle Ages" will remember that the custom of turning the gable end of the house towards the street began to be introduced in France in the fourteenth century. Previous to that time the façade was terminated square, the eaves of the roof often projecting boldly and casting a shadow on the front. The gable continued to prevail during the fifteenth and sixteenth centuries, and was abandoned in the seventeenth.

The Palace at Blois, which affords examples of various styles from the twelfth century to the period of the Renaissance, has three illustrations: of these that of the staircase, to which we have already referred, is more particularly interesting.

The court of the Hôtel de la Chaussée, at Bourges (represented in plate 5), is an elaborate specimen of the architecture of the period, with its towers, panellings, large dormer windows, crestings, and metal *épis*. The *Sainte Chapelle* at Riom (plate 9), is a charming little structure; and for an admirable piece of wooden construction, the Court of the Hôtel Dieu, at Beaune (plate 11), may be pointed to. The foliage decorations which enrich the buildings of the period under notice are exceedingly well executed, and show no decline: they were used more sparingly, however, than in the preceding age:—

"The leaves are found to be used very much as natural ones would be,—that is to say, rather flat on the surface,—and the due amount of vigour obtained by the firmness of the outline. They were always very much undercut, often detached, and the edges kept very thin and fine. The surface, also, of the leaf is kept in pure light, whilst all openings and markings upon it are drawn in shadow.

The principal types were the endive, the vine, and the thistle. This last is the most common, and, inasmuch as the openings in the leaves form a sort of architectual elongated trefoil, the effect produced is that union between architectural and natural forms which is so pleasing in the best works of art."

There is a house in the *Rue des Trois Pucelles* to which most travellers who visit Tours go, because it is called that of Tristan l'Hermite, well known in connection with Louis XI. as set forth by Scott in "Quentin Durward." A cord, with knot, sculptured on the front of the house, just above the base moulding and over the entrance-door, or moulded in terra cotta, has helped to maintain this tradition, if it did not lead to it; but it has been pointed out that there is a small figure of an archer in the groining at the entry to the staircase, the costume of which indicates the time of Louis XII.

"Taking this fact in connection with the presence of the *cordelière*, which it is well known was sculptured on every building erected by Anne of Brittany,—as in the Oratory at Loches, on the tombs of her parents and children at Nantes and at Tours, as well as at the Castle at Blois,—it is much more probable that the house was built by some Breton gentleman of her corps of archers, or was even built by Anne herself, to lodge those gentlemen archers of her guard who could not find accommodation in the palace at Tours during the many visits which the king, Louis XII. and herself were in the habit of making to "their good city" for the holding of the *Etats*."

The house has a narrow frontage, with great depth in the rear, which occasions the formation of a small court, with two separate piles of building connected on one side by galleries (like the house at Amboise), but which in this instance are closed. The first plate in Mr. Clutton's book shows the court of this house, with its staircase-tower, and well.

Louis XI. erected a château just outside the walls, called *Plessis les Tours*, and it was a tradition, when we were there, that the king had the means of telegraphic communication with this house, called of Tristan. How strange is the influence of a name. Wandering beyond the town, over the hills, the way was lost, and we fell into trouble. A worthy pork-merchant (such he said he was) lifted us out of the difficulty, and was our convoy through divers straits. His knowledge of the history of his country seemed singularly extensive, and he discoursed fluently upon it. The Château of Louis XI. lay in our way, and as we passed the sunk wall, the scene of some cruelties, night lending a mystery to the place, he dropped his voice almost to a whisper, while describing the vices and weaknesses of the king; as if the spirit of despotism which would have made it dangerous so to speak at the time to which he was referring, still awed him.

There are many interesting buildings in Tours;—the cathedral, with some stained glass of good colour; the upper part of the tower a strange compound of styles;—the remains of St. Martin's Church, mixed circular and pointed work, said to have had five towers originally; St. Jullien's, then a riding-school, the tower of bold semi-circular work; and many ancient houses.

A curious effect is produced on the Loire, on which the town stands, by flotillas of boats fastened together in a straight line to the number of eight or nine, which navigate it; the largest first, the rest gradually smaller. At the period of our visit, now about ten years ago, the facilities for communication were much less than they are now. The Diligence which passed through the various towns once in the day, coming from a more distant place, was often full, so that progress was sometimes difficult. The remembrance comes back of starting for Anjou, under such circumstances, at eleven o'clock one night, in a miserable one-horse "cuckoo," with a French officer and a country-woman. The disasters would fill a page. At one moment we were all asleep, including the horse, and might have remained in the road till next day but for a lucky wake-up. About two o'clock in the morning we all got out to relieve the horse, excepting the woman. The carriage had but two wheels, the upper part was heavily laden, and the consequence was, when the horse was taken out, that *Madame* and the carriage were turned over on end, fortunately without injury; but the luggage had to be unpacked, and we were compelled to adjourn to a charcoal-burner's miserable hut, where the appearance of the inmates coming in and out from their work was not such as to inspire confidence. Probably, however, there was little to fear.

At the time of which we are speaking, the people out of the towns were less sophisticated than they are now. On one occasion, when it was pouring with rain, we found shelter in a hut where a woman was making lace. It was a rude place, with floor of earth, the bed in one corner, and the owner could earn by her employment only sixpence a day; yet when she was asked if she had an umbrella she could lend or sell, she replied, with grace and a touch of sadness not inelegant, "No, *Monsieur*, I have never reached that happiness."

Gossiping thus on the road we have let Mr. Clutton's book pass by. Suffice it to say, that it is a very interesting addition to our stock of information concerning the domestic architecture of France, and deserves the attention as well of the man of taste generally as of the architect in particular. The author acknowledges his obligations to Mr. W. Burges for working out his sketches, and pays tribute very justly to the skill of Mr. Bedford as a lithographer.

USEFUL INVENTION.—A M. Berard, of Paris, by taking unburnt bricks from the field in layers, builds up a block of any required size, and then burns it like an ordinary brick, merely filling up crevices as the mass sinks in burning. For building bridges, docks, quays, &c. these blocks are particularly suitable, being indestructible by either sea or fresh water.

ACOUSTICS AND VENTILATION.

MAN has not been able to lay his hand upo our venerable friend Echo, and bid him kee within sylvan shades, grottoes, and mountain or come only when invited into domes and ga leries prepared for his reception. Echo come without invitation, and jokingly repeats th words of our command for his exclusion. H reigns like a king in our cathedrals, churche and chapels, our music-halls, theatres, and co cert-rooms, our Houses of Parliament, and ou halls of justice. In other rooms, where ech visits not, there is deadness, an oppression whic often baffles the speaker and the musician. Whe a good room for sound is obtained it is a happ chance, the builder himself confessing hi astonishment. We have yet to look for th man who can drive echo out of doors to his pro per sporting-place, the Lakes of Killarney or th Lurley, and destroy those reverberations an air-struggles which cob-web the mouth of speaker.

Long ago we expressed a conviction tha many churches and meeting-places might b improved by good ventilation, and the guidanc of the currents of air. This, it seems, is nov put into practice.

An architect of Canterbury, Mr. Marshall has patented a method "for the diffusion an conveyance of sound in churches and all build ings," which depends entirely, as it is explaine to us, on the regulated transmission and emissio of air. Air is brought in at the bottom and le away at the top into the tower, if there be one or a turret formed for the purpose if not.

Some churches are spoken of as having bee improved for hearing by partial application o the system. Faversham Church and that of St Mary, Bredin, at Canterbury, but we have no seen them: the patentee, however, is about t operate on St. Dunstan's in the West, and w shall then be able to test his system.

His plan rests mainly on what he calls hi "Phonette," the object of which is to preven a down-draught. This is a small box, open a both ends, but so contrived within as to give a easy passage to the air one way, and offer complete stoppage to it the other. Thus by pair of bellows applied to one end, a candle a the other may be easily extinguished. Bu when you reverse the two you cannot make th slightest impression upon the flame. This effec is obtained by the intersection of thin blades o wood within the box. This arrangement i one of great value. He applies his paten too, to the improvement of musical instrument If Mr. Marshall effect all he promises, th judges will be anxious, as his first reward, t send him to the *Old Bailey*, in which celebrate court, when any one is speaking, confusio worse confounded reigns.

THE LABOUR QUESTION.

THERE is still some commotion throughout th country on the score of wages; but with th movement in its present phase in the province we have less to do than heretofore, inasmuch a the operatives in the building trades have no pretty well settled their questions with th masters at a moment when differences onl begin to appear in the metropolis. Workme in the building trades, however, who have bee unsuccessful in their endeavours to obtain a increase of wages in the country, are looking t London, we find, as a more hopeful field, at a mo ment when, in more than one branch of the trad there are already too many mouths to fill there If Bristol workmen, for example, think they wi improve their prospects or better their conditio by throwing up their employment there, a 4s. 6d. a day, and migrating to the metropolis as some of them, we have occasion personally t know, meditate doing, to obtain 5s. a day, the will find themselves sadly mistaken, even thoug they were at once to obtain what they desir They will find, when too late, that 27s. a Bristol is quite as good as 30s. in London. Bu besides, the probability is, that they will not b able to procure work here at all; and althoug we doubt not it might be for the interest of th employers to have the metropolitan workme deluged by such an inroad from the country, w strongly advise every provincial operative t

pause before he leaves regular employment in his own quarter.

If strikes are to multiply, shops to be closed, contracts to be refused, and trade to be checked; or even if wages are to be increased so as, at a time when materials are already high in price, to render works still more expensive, and capitalists still more unwilling to enter into contracts with employers of workmen, the difficulties will increase. An ominous hint to this end appeared in our columns only last week, in a report of a recent meeting of one of the societies for erecting improved dwellings for the working classes themselves, and who were about to enter into a contract for a large building at Southwark, but in the present aspect of the trade, resolved not to do so. Moreover, in the present lowering aspect of political affairs, this is a most unpropitious time for workmen unsettling the established routine of trade, events on the Continent being but too likely of themselves most seriously to check that commercial prosperity by which all classes in this country have benefited ever since the subsidence of the revolutionary convulsion on the Continent in 1848.

On the question of a turn-out, although we are much inclined to think that there is such a feeling spreading amongst the more intelligent and far-seeing of the operatives in the metropolis, that they are not likely to allow any contingency to betray them into a step so suicidal, still the present crisis induces us to make a few more remarks on the subject, which we hope may not be considered irrelevant or ill-intended.

A pamphlet "to workmen," by one who addresses them as "fellow workmen," and is evidently no special friend of their masters, has just been published,* under the signature of "Vindex" on "the Strikes" in the building trades. In this address we are pleased to see that strikes are reprobated, although with some little apparent inconsistency, as where the writer seems to approve of strikes in Ireland, although it is well known that there, occasionally, strikes have assumed even a still more unreasonable and injurious aspect than elsewhere, as, for instance, where poor people who had been in a state of starvation were employed mainly for the purpose of benefiting themselves, but who were not more than a week at work when they struck for a rise of wages, and were in consequence deprived of even those they had. "Vindex," amongst other remarks on strikes, narrates an instance of one kind out of the host of mischiefs they entail, both on employer and employed, which is in harmony with what we have just said on the subject of the rise in wages themselves, and which it may be worth while here to quote:—

"We remember the case of a very large firm being fined 2,000*l.* in consequence of the men turning out, and thereby disabling them from fulfilling their contracts. Nor was this all; a large order was denied, in consequence of their confidence in their hands being broken. They accompanied it with the following explanation: 'It is out of our power to undertake your work; the time allowed is quite sufficient for the purpose, if we could depend upon our men, but we are completely in their power, and from their uncertain habits we cannot promise the work to be finished by the required time.' This order was not executed; the employers were deprived of the profits upon their capital, and the men lost the value of the labour which the order required from their hands."

And this is no mere isolated instance, but one of a class, and indicative of one of the various modes in which strikes injure workman and employer, as well as tend to destroy the trade or business by which both earn their livelihood.

The *Economist*, in speaking of strikes as impeding improvement, although often advancing mechanical inventions which enable the capitalists, for a time at least, to dispense with manual labour, says;—

"That the labourers should have a larger share of the combined production as it is increased in quantity or value, is proper, right, and just; but the only way of determining what share they ought to have is the higgling of the market, in which each and every individual is free to buy or sell. The services of labourers can no more be bought in masses than the services of retail tradesmen. They must be bought individually. Even the services of soldiers are so purchased. Strikes are combinations to sell labour in the mass, and gain by violence that which can only be righteously obtained by free exchange. They more resemble in principle border forays, or the mutinies of armies, than that free mutual exchange which, carried on by individuals, benefits all concerned, and civilises the world. They are hostile demonstrations, which, like the invasions of soldiers, destroy wealth, or impede its production, to the general injury. Strikes are now happily carried on, indeed, with less violence than formerly. The employers, too, wisely and calmly take the demands of the men into consideration, and in many cases have complied with them. There is neither the same rude arrogance in the one class, nor the same brutal violence in the other, that prevailed a few years ago. There is on this account good reason to hope that the spirit of moderation displayed on both sides may lead to a speedy accommodation of the many disputes that now prevail. While we must condemn all combinations to supersede free individual action, and substitute a joint resolve by masses for the higgling of the market, we have no intention to insinuate that the labouring classes should not individually seek, and do not deserve, higher payments."

While thus offering for the consideration of the workmen remarks which we earnestly hope may be of use to them in helping to strengthen their determination to avoid strikes, we do think that the employers have also much to amend in their modes of doing business, to the injury of their workmen as well as of themselves, and the disrepute and damage of their trade. Competition-contracts have become a bye-word of reproach, and their fruits a shame and disgrace to the age we live in. The interest of the workmen is deeply involved in this evil, and they are much at the mercy of their employers in respect to it. The writer, "Vindex," just quoted, though severe, speaks but the truth when he says,—

"Intense competition has already corroded the welfare and prosperity of both contractors and artisans; rack, infringement, and dissolution of principle, weekly and daily occur; the estimates of contractors themselves speak volumes in favour of the operative with the public. From such headlong risks and imprudent facts as these result incessant bankruptcies, and an overspreading contagion of fraud and dissembling; from such circumstances are created the various ill-conditions of the labourers; *they* are the victims of mad speculators; and while the false principles of the employers clash against each other, the subordinate is toiling with all the wrongs he is suffering locked in his own breast, till the time arrives when he demands justice, that spontaneous expression of defined determinations, that knowledge of the cause, and that expression of truth which exclaims, that nothing but a complete readjustment will ever raise him to a proper level."

Such a readjustment, we fear, constitutes one of the most difficult problems of the day. Yet it is imperative that some endeavour should be made to arrest the injury with which it threatens the building trades.

Nothing decisive in the question between the Metropolitan carpenters and joiners, and their employers, has occurred since our last, unless it be that the workmen's committee on Friday in last week, passed a resolution to the effect, that they still discountenance strikes. The chairman of that committee, Mr. Hooper, has written a letter to Mr. Wales, the Secretary of the Builders' Society, reiterating the assurance that there was no intention to threaten the employers in the announcement which was regarded as offensive, and explaining that the small contribution (2s. 6d.) which he personally made for behoof of Messrs. Brass's men, was an individual act, for which the committee were by no means responsible, and that he now admits it was an untoward act, though committed with a good intention,—that of assisting in the promotion of good feeling and reconciliation with those who had fallen into error.

In fairness to Mr. Hooper, we may ourselves here remark, that as he expressed much sympathy for Messrs. Brass's men, while earnestly condemning their strike at the meeting, the act objected to can only be regarded as an expression of that personal sympathy, however impolitic and untowardly significant under the circumstances.

Mr. Hooper concludes his letter with the expression of a hope that the masters may be induced, as requested, to meet a deputation of the workmen's committee on friendly terms; and this request we endorse.

We must add that on Monday night a public meeting of journeymen *bricklayers* took place at the National Hall, Holborn, to secure an advance of wages. A resolution was carried, claiming an advance of 6d. per day, and a deputation was appointed to confer with the masters upon the subject.

* Savill and Edwards, Chandos-street, Covent-garden.

ST. PAUL'S CATHEDRAL.

EXCELLENT SIR,—In the long list of officials attached to the court of an ancient Hindu monarch there were the somewhat remarkable ones of "chief investigator of all things" and "chief obviator of nuisances," and as a proof of the importance and respectability of these offices they took rank, the first named, immediately after the prime minister, and the second next to the commander-in-chief. What might have been the more specific duties assigned to these high officers it is not perhaps easy to say, but they must have been of a very comprehensive character, as the titles themselves will plainly show. We shall not, therefore, be very far from the truth if we include in the scheme of their supervision all matters connected with the sanitary condition and social well-being of the community, whatever else they might have had to attend to. I am not aware that we have anything here in England so nearly corresponding to the Hindu office as that of the editor of a journal such as the *Builder*, which has now been occupied for many years, and with progressing benefit, in investigating all matters bearing upon the improvement of society at large, and, as a prime step thereto, in specially obviating all manner of difficulties and nuisances. I make no apology, therefore, for addressing myself to you in respect of a twofold nuisance, *i. e.* both in the literal and figurative sense of the word. First, then, I am confounded at learning that the dean and chapter of St. Paul's contemplate the restoration, along with the paintings themselves, of that most absurd solecism of Sir J. Thornhill's brush, the converging arcade. Is it too late to obviate this monstrous difficulty, and remove what you and more than one of your correspondents have reprobated as a glaring architectural nuisance? So much for the figurative application of the word: now for the literal. You must know, Mr. Editor, that whenever I go to London it is always with the hope of being able to devote some portion of my time, however small, to an inspection of Sir Christopher's great work, and, if possible, my examination includes all the portions of that vast building that are usually accessible to strangers. The last time I indulged myself in this feast of mind I was greatly grieved to witness the condition of the Whispering Gallery, as it is called, as well as that of the stone gallery outside over the peristyle. The walls of the former were in a sad state, both from actual dirt, and, what is worse, from the myriads of vulgar names and legends scrawled thereon in every variety of character and position. As to the other gallery, my eyes were sorely annoyed at the dilapidations allowed to take place in the stonework, particularly the dentils of the cornices, some of which had fallen and were lying on the leads in various stages of dismtegration. I say nothing of the grievous want of pointing perceptible in the gaping joints of the masonry. But in addition to these eyesores there were others equally offensive to the nose as the eye, and I would suggest that the dean himself should take a walk some fine morning after prayers and personally examine the condition of the whole upper works of the dome. As a poet he would be shocked at the maltreatment of fine art, if not also indignant as a Christian at the desecration of holy places. A. B.

FIRE-ESCAPES SHOULD BE FIREPROOF.—In reference to the circumstance that at the fire in Hatton-garden last week, one of the ropes of the fire-escape in use there was destroyed by the flames from the windows, a correspondent, E. I. K. suggests that wire cord ought to be substituted: wire cord would also be somewhat lighter than ropes. For similar reasons wire netting should be substituted for the sheets or hammocks at present used, which must also be liable to be burnt. In fact everything connected with a fire-escape should clearly be fire-proof.



HOUSE AT CHINON.

[See p. 433, *ante*.]

ON THE SUPPLY OF WATER AT ST. HELENA.

THE whole of the island is of volcanic origin, and is little better than a series of hills and ravines. It is divided into two principal parts by a chain of lofty hills, which stretches irregularly across the centre of the island. In several places they reach to an elevation of nearly 2,700 feet; but from rising very abruptly, they seem really loftier than they are. They are mostly steep and precipitous, some covered with wood to the very summit, as in the central chain, while others are entirely void of verdure, being in part mere rocky peaks covered with a loose coating of sandy marls and stones. The central chain extends nearly from east to west, so that the general lay of the water channels is more or less to the north and south, as at Sandy Bay and James Town, two opposite points of the island.

There are only one or two small streams in the island, the principal and most continuous of which is that which passes through James Town to the sea. The others are often dry, but this one has water in it all the year round. It rises in the valleys and gorges at the foot of the central hills on their northern slopes, and finds its way almost imperceptibly to the lower valleys under Francis Plain, where it assumes the character of a rambling brook of considerable size and purity. From Francis Plain it reaches the James Town Valley by an abrupt and clear fall of upwards of 200 feet, where it often forms a beautiful feature in the rocky landscape. Here it falls into a ravine of great depth, and is flanked by the almost perpendicular face of High Knoll, which rises abruptly up to nearly 2,000 feet in height, with several other lofty peaks in its immediate neighbourhood. This is altogether a wild and romantic point, being made up, as it were, from the ruins of rocky hills, which lie tumbled about in great confusion. Some appear to have been completely overturned, for the strata of the various sands and marls bedded between the layers of lava, are disposed at all angles, and ruptured in a variety of ways, as if the solid lava and calcined rock in which they are placed had been riven to pieces by a sudden and violent convulsion of nature. Here the main stream is joined by a second, which comes into it from another valley, which opens out from the mass of rocks, and runs more to the eastward. It passes over several falls before it finally joins the first stream, and when thus united after a troubled course, it flows down a narrow channel now in the rock through the town, and finally reaches the sea in front of the town.

This water, however, is only supplied to the town and shipping in case of emergency. In the middle of the town a flood-gate has been thrown up, which dams the water back for the purpose of scouring the bed of the stream, especially during the hot season, when it becomes too languid to carry off all the filth poured into it from the houses. The houses and gardens at the upper end of the valley are, however, supplied from the stream by means of small open drains cut in a soft red stone found in the island. The great supply is obtained from springs which percolate through the fissures in the rocks at the head of the valley. These springs are not in the forms of wells. They oose out of the crannies of the rocks, which lie in long streaks, as if they had been horizontally laminated. They are, however, mere seams in the hard lava, to which the water finds its way by unknown channels in the body of the rocky mass of the mountains. Springs of this kind are very numerous hereabouts, and are sufficiently productive to supply the whole town, as well as all the shipping, with very excellent water. It is collected by a very primitive but really effective process. Under each crack or fissure is laid a strip of sheet lead, bent into the form of a gutter, about a foot in width. The water as it trickles from the fissures falls into the leaden receptacle, and from this finds its way to a little tank of stone of 4 or 5 feet square. There are several of these little tanks perched on the hill side, and they are all connected by 2-inch lead pipe. These gathering plates are of considerable length, and perhaps altogether extend to a length of 200 or 300 feet. There are a few made of slate, but most are lead plates, and have been there for many years past. The collected water runs from one tank to another till it reaches the largest, which may be about 12 feet long by 3 or 4 broad, and about 3 deep, which forms the head reservoir for supplying the whole town, small as its dimensions are.

These springs are of course flowing night and day, and seldom vary in their supply throughout the year. From this latter tank the water is led at the foot of the hills down the valley to the town, one branch running straight through it, and the other turning off along the rocks to reach the wharf, where it supplies several larger tanks for the shipping.

The main pipe for all this water is only 2 inches bore, made of old-fashioned lead-pipe, cast in short lengths, united by solder joints. Yet from the great fall, and consequent pressure, this 2-inch pipe is found ample for both the shipping and the town, with all its baths, besides the barracks, hospitals, and other buildings, and always yields a full supply,—that is, every house has its full allowance through the day. The houses, however, in the lower part of the town, have to be supplied in the early morning, for the demand is often so great in the middle of the town, that they sometimes fail during the middle of the day, when the houses above them are drawing their quantum. There are more than one hundred houses, all supplied from this 2-inch pipe, by means of 1-inch or ¾-inch junction pipes, so that when all the upper houses have their taps open, they for the time cut off the supply to those below them,—if these latter, however, run short it is their own neglect, for there is more than ample for all.

There is also a fire-tank in the town, always full and ready for use. On the wharf there are three large tanks, each holding 100 tons of water, always ready charged for the shipping. It is supplied to the ships by means of several little yachts or floating tanks, fitted up with hose and force-pumps, so as to put the water into the ships as they lie in the bay, without the trouble of sending their tubs, as in the old times, before these "Water-works!" were laid down. There is no place in the world where ships in any number are so quickly supplied with this necessary element as at St. Helena. The floating-tanks are generally filled by daylight in the morning, so that they are ready to sail at once to the first vessel that comes into the bay,—and will in fact meet them if they hoist a signal they want water; so that before she drops anchor the pumps are at work pouring a supply into her thirsty receptacles,—and all this is accomplished by means of a 2-inch pipe! Water is put on board ships in the bay at 7s. per ton. I have seen a war steamer watered here in a couple of hours,—a facility and despatch not equalled by any other out-station in the world. And what is of equal consequence, ships can get in and out at all seasons: there are no gales here, as at the Cape of Good Hope, to interrupt their proceedings.

Nothing can be more simple than these arrangements, yet they are effective and answer every purpose. A larger pipe for the main would be an improvement, but the emergency is not so great as to call for that expense at present. Sometimes there is a sudden and mysterious stop put to the whole supply, in consequence of a little bit of a root getting into the pipe, where it grows so rapidly that it effectually stops it up in a few days. It however, always gives warning of its intentions in this respect by gradually shortening the supply. The plumbers are then set to work, the position of the intruding root ascertained, taken out, and all made good again. The growth of these roots is very curious; they look like a long tassel of white whipcord, and, as a matter of course, assume the circular form of the pipe, and grow so numerous and matted together, as effectually to diminish, if not altogether stop the supply unless summarily ejected.

The quantity of water given out by this small main of *two inches bore*, is, of course, due to the great fall, which is about 500 feet in half a mile, or rather more than 1 foot in five. It is constantly flowing night and day without interruption, and yields an ample supply of excellent water for the whole town,—and the consumption of water is great in a tropical climate. James Town is the only place in the island where pipes are employed to collect and convey water, except at Longwood-house, the water to which is collected at the foot of Diana's Peak, and thence conveyed in pipes a mile or more round the hill-sides to Longwood. The barracks at Ladder-hill are supplied from a spring in Plantation-house, the Governor's residence, and thence conveyed in pipes to tanks. All other parts draw their supply from local springs, of which there are nearly 300 known and taken account of in the island.

JOSEPH LOCKWOOD.

THE ARCHITECTURE OF THE BEE.

AT the close of Mr. Sydney Smirke's interesting paper on this subject, printed in our last,

The Rev. Walter Mitchell, by whom the drawings and models used in the previous remarks had been made, being requested to give some further details, said,—He confessed that he was an enthusiast, but he thought our enthusiasm was never so rightly directed as when devoted to the works of an all-wise Creator. The more carefully and minutely we examined his works, the more we found to learn and admire, and not only so, but we were frequently rewarded with a knowledge which might become of value to our fellow-creatures. In the mineral kingdom, as well as in the products of the chemist's laboratory, we meet with objects of definite form, whose symmetry and sharply-defined faces and angles, while they delight the geometrician, defy the imitation of the most skilful artist. These forms are called crystals. One of the six systems under which these varied forms are arranged according to certain geometrical laws, is called the hexagonal or rhomboidal system; a striking feature of this system is the frequent occurrence of the hexagonal prism, often terminated by three planes, just as in the model of the Bee's cell which he held in his hand. There was one distinction, however, the angle of 109 deg. 28 min. which Mr. Smirke had shown them, so admirably solved the beautiful problem of obtaining the greatest possible amount of space with the least possible expenditure of material, was not to be found among the hundreds of different angles observed in the rhombs, terminating the hexagonal prism, in the many substances crystallizing in this system. Now, though this angle did not appear among the forms of the hexagonal, it did among those of the cubical or octahedral system, the most common forms of which were the cube, octahedron, and rhombic dodecahedron. It is somewhat curious that we here meet with three out of the five Platonic bodies, whose mathematical properties were so interesting to the ancient geometers, to which probably we were indebted for Euclid's Elements, the discussion of these bodies being the subject of the last book of that celebrated work. The rev. gentleman then described by models the manner of inscribing an octahedron in the cube, by joining together the centre of each face of the cube with each of the centres of the four adjacent faces. If, instead of doing this, he said, we supposed each opposite solid angle of the cube joined by lines, and points taken in them, equidistant from the centre of the cube where they met and the solid angle which terminated them, lines drawn from the centre of each face of the cube to the four adjacent points thus marked out on the diagonals of the cube, would describe the outline of a figure called the rhombic dodecahedron. This solid, though not one of the Platonic bodies, possessed many properties in common with them: it is bounded by twelve equal rhombs, the great angle of each being 109 deg. 28 min. The diamond and garnet frequently presented this form, and sometimes the rhombic dodecahedron was elongated by the continuation of four of its planes, while they still preserved their relative inclinations to each other. In this case these minerals presented us with a form identical with that we should obtain by using the bee's cell as a mould, and taking a cast from it. Most crystals possessed the property of being more readily cleaved or broken in some directions than others, the direction of cleavage remaining constant for the same substance, notwithstanding the varieties of forms its crystals might assume. The accidental discovery of this property enabled Haüy to arrange forms which previously seemed to bear no relation to one another, under one system, and thus to found the science of crystallography. Carbonate of lime, under the form of Iceland spar, afforded one of the most familiar examples of cleavage, and it was found that the finest dust into which marble could be levigated by any mechanical means, showed, under a powerful microscope, only a collection of rhomboids, as sharp, transparent, and well defined as the most beautiful specimens of Iceland spar. In the cubical system but three different cleavages had been discovered, parallel to the planes of the octahedron, cube, and rhombic dodecahedron. The last would furnish us with rhomboids which would build up the bee's cell with its hexagonal walls and terminating rhombs, accurately inclined to one another, and without any loss of space. Now, as many substances, analagous in chemical composition and properties to wax, such as stearine and spermaceti, were most undoubtedly crystalline, might we not, assuming that wax also, like most other bodies which pass from a fluid to a solid state, was crystalline, suppose that the delicate mandibles of the bee enabled her to cut the wax, in the direction of a cleavage plane, suitable for the wonderful architecture of her cell. This he would venture to throw out as a guess, suggested by the remarkable identity of the bee's cell with the planes of the rhombic dodecahedron, and in the absence of any theory which seemed to afford the slightest clue to the wonderful geometry of the bee.

KENSINGTON.

AN office, store-room, and shed are about to be built for the Commissioners of the Kensington Improvement Act, at their wharf, Kensington-basin. Mr. Broadbridge, surveyor. The following tenders have been received:—

Taylor	£255	0	0
Lockwood	250	0	0
Hemmens	230	0	0
Brown and Longhurst	225	0	0
Cowland	219	7	6
John Hunt	215	0	0

A CORRESPONDENT, who signs himself "Barnabas of Kensington," has sent us a long letter quizzing some of the proceedings of the Commissioners in the "royal village of Kensington." We can find room, however, only for the parts containing information. Speaking of the discussion which a proposed improvement of the parish pump has led to, he says:—"This pump, like all other parish pumps, is on the verge of the church-yard, and its pellucid waters are enriched by the juices of defunct humanity which filter through the soil. It holds a considerable quantity of 'animal matter' in what chemists call 'solution,'—the result of 'dissolution.'"

"There is great talk," he goes on to say, "of a cathedral church. The inhabitants see it 'looming in the future,'—but where is the money to come from? It is proposed to erect this cathedral in the gardens of Sheffield House, or thereabouts. This is the site of the ever-famous 'Kensington Gravel-pits,'—the only indication of their whereabouts, for all the rest have long since been covered over with fine contract houses. These the original pits are now doomed, the Philistines are upon them, the builders have got possession, and ere long a stately neighbourhood is expected to rise up like magic behind the spacious mansions of the Queen's-road. A new route, they say, is to be laid open, from the vicarage to the Bayswater-road. But this is not all,—barracks are to be erected on a patch of the old kitchen-garden, in Church-lane, much to the annoyance of the good people of the royal village. The barracks, however, would seem to be even more certain than the cathedral."

LIBRARY OF THE SECTION OF ART AT MARLBOROUGH HOUSE.

A TWOPENNY pamphlet, containing a prospectus of this library, by the librarian, Mr. R. Wornum, has just been printed for her Majesty's Stationery Office, and ought to be in the hands of almost all artisans and operative manufacturers engaged in or near the metropolis, as well as of students and the public in general, interested, or who ought to be interested in art.

An artisan whose knowledge of books may be limited to the ordinary periodicals of a mechanics' reading-room, may here at once, by simply stating his business after paying a small fee of 6d. for a week's reading, 1s. 6d. for a month's, or 10s. 6d. for a year's, have opportunities of studying some of the most costly works on his art in the world, collected from the remotest regions of the globe,—from Egypt, from China, or from Peru. The applicant has only to mention his business or his object in visiting the library, and the best of what it contains, relating to such business or object, will be placed before him. The attention of manufacturers and skilled workmen generally is particularly invited to it, as it is organized for their especial use as the immediate agent in developing a correct taste among the public.

The library already consists of about 2,000 volumes, portfolios of prints, drawings, &c., relating to decorative art and ornamental manufactures of every description, and is open daily, mornings and evenings from 10 a.m. to 9 p.m. except on Saturday evenings. So far as regards works on architectural ornament it is already rich, but it requires some future additions of works on general architecture: indeed, the intention is to greatly, though gradually, enlarge it, and so to render it a collection of a most comprehensive though special order.

PROVINCIAL NEWS.

Hastings and St. Leonards.—Building speculators are very active here, according to the local *News*. The stock of lodging-houses, it is said, has been doubled of late years, and the township of St. Leonard will soon be completely united with Hastings by a bond of cemented bricks. The *News* notes a decided improvement in glazing since glass was freed from duty.

Brighton.—In making an excavation for a lock on the Hove Ship Canal, near Brighton, a large quantity of shale, of a blackish colour, which was thrown out, has spontaneously ignited, and is burning like a limekiln. The process gives out vapours creating a deposit, it is said, resembling saltpetre in appearance and taste, and sulphur. More of the same stratum of shale has been thrown up from under the clay in a brick-ground near the Chalybeate, at Brighton, about three miles distant from the lock, and this has also ignited. The combustion is attributed to the presence of phosphorus, in some form, which ignites when it has reached a certain temperature and comes in contact with the oxygen of the atmosphere; but it is probably mainly connected with the formation of alum in the shale, for which it is noted, and which must render this deposit valuable as an article of commerce.

Grain Spit (Medway).—A contract has just been taken for a new and formidable battery to be built on Grain Spit, opposite the Garrison Point, at the entrance of the river Medway. The battery will command the fair-way ship track up Sea Reach, and, by cross-firing with the garrison batteries, will defend the mouth of the river.

Cardiff.—The docks are to be extended, in consequence of the rapidly-increasing shipping trade of this town. Sir John Rennie and Mr. Walker are consulting on the matter.

Nantwich.—Plans for proposed works of drainage and water supply for the district have been received by the Local Board of Health from Messrs. Lee and Stephenson, engineers, and a committee of the board are appointed to examine the plans and report of the engineers, with a view to their being submitted for the approval of the General Board of Health.

Nuneaton.—The church here is at present closed, and undergoing repair and enlargement. The chancel is to be extended eastwards some feet, and it is to be hoped that all the old wood lumber will give place to more suitable furniture. Among the works of interest in this church are some early mural tablets belonging to the Dugdale family, and a table tomb and recumbent effigy of Sir Marmaduke Constable, knight (1560), all of alabaster; the latter sadly mutilated; which works have been entrusted for repair to Mr. E. Richardson, the sculptor, by the respective proprietors.

Longton.—The new church "of the Resurrection" at Red Bank, in the ecclesiastical parish of Blurton, was consecrated on Thursday in week before last. The site for the erection is in the thriving suburb of Dresden. The church is in the Early English style, and is built of blue and red brick chequered, with an octagon chancel end terminating in an apse. A spiral bell-turret over the building forms a conspicuous object. The principal entrance to the edifice is at the western end. The church consists of a nave and north aisle, with octagon chancel, which latter has seven narrow lancet-shaped windows of stained glass. The walls of the altar portion, to the height of 5 feet, are lined with glazed tiles from the manufactory of Messrs Minton, the whole being surmounted with encaustic slabs. The chancel is also paved with tiles, the gift of Mr. Minton. The roof is of open timber work, stained and varnished, as are also the seats, which are open. The church will accommodate from 250 to 300 persons, and the cost of the erection, with the necessary fittings, &c will be about 1,100*l.* towards which sum something over 500*l.* would be forthcoming from societies formed for such objects, the remainder having to be raised by private subscriptions.

East Retford.—Mr Place, architect, Nottingham, has been requested to furnish the committee for the restoration of the parish church with a report, together with plans and estimates, in order that they may be enabled to form some accurate judgment as to what is really required to be done.

Runcorn.—A preliminary meeting has been held to consider the practicability of establishing waterworks for Runcorn and its vicinity. Plans and specifications were produced, and it was resolved that a joint-stock company should be formed.

Bradford.—A correspondent of the *Bradford Observer* complains of the mode in which improvements are carried out there. "Why," he says, "have worthless old buildings been taken down and replaced by substantial and valuable erections, vacant plots of ground purchased and built over in central and busy parts of the town, year after year, whilst no matured or well-considered plan for a general and systematic improvement of the town has ever been attempted? Perhaps, it may be answered that this state of things would have been remedied earlier, but for the failure of the late contractor for the survey and plan of the borough; but to whose fault may that failure be justly ascribed? Whose duty was it to provide against an occurrence so unfortunate—most unfortunate for the desired improvement in the convenience and appearance of our town?" The writer in conclusion recommends that at least one handsome central street should be planned out and formed according to plan.——Extensive alterations and improvements are contemplated in the parish church. At present it includes many inconveniences, some disfigurements, and is inadequate to the accommodation of the worshippers. It is proposed to remedy these inconveniences, to remove the disfigurements, and to provide additional accommodation for 450 persons. The floor now seats 630, the galleries 520: total, 1,200*l.* If the proposed alterations are effected, the floor will seat 1,020, and the galleries 630: total, 1,650. The east gallery, it is said, disfigures the whole interior. The north wall was long since reported to be in an unsafe condition. By the plans now projected, it will be pulled down, and carried out 6 feet; the whole floor beyond where the font now stands, will be seated; the east gallery entirely removed, and the other galleries considerably extended: the organ and choir brought into the chancel, a second vestry erected, and the oak roof exposed to view. The cost of the alterations is estimated at 2,500*l.* if carried out in the most economical way, but if the funds are forthcoming, it will be easy, it is said, to expend a larger sum advantageously. Hitherto, the necessary funds are not raised: the subscriptions amount to about 1,800*l.*

Burnley.—The committee for superintending the restoration of the parochial church have finally resolved to re-pew the whole of the body of the church; to remove the organ to the south-west gallery, by which the chancel window will be opened; to construct a double staircase in the tower for the galleries; to open the arch in the tower, and the painted Gothic window in the west of the tower; to construct a new vestry in the south-east end of the church; to raise the upper vestry and pew the same, so as to accord with the north-west gallery; to raise the floor of the church, and to warm the edifice with hot water.

Newcastle and Gateshead.—In the year 1853, says the *Gateshead Observer*, the daily supply of water to the inhabitants of Newcastle and Gateshead, by the then existing companies, amounted to 82,000 gallons. In 1853, one single customer of the Whittle Dean Water Company — the Felling Chemical Company, Gateshead—consumes as much daily as all Newcastle and Gateshead put together in the year of the Reform Bill!——We may here remark that in reference to a recent announcement by a Shields paper, that the construction of docks in Jarrow Slake, is about to be proceeded with by the York, Newcastle, and Berwick Railway Company,—the *Observer* states, as the possible explanation of the rumour, that the company and certain dock neighbours have had a "tiff," and the Jarrow dock scheme may simply be revived, for the moment, as a rod,—in pickle, we presume.

Edinburgh.—A memorial, by the working men of this city, has been presented to the Lord Provost and Council, as to the baths in Nicholson-square, which are still in debt, for which certain trustees are liable, but which was to be shortly cleared off by renewed subscriptions, which have not been realised. The memorialists solicit the corporation to take the baths under their trust and management, as they are now in excellent working condition, and are not only self-supporting, but have already a free annual surplus of upwards of 50*l.* which in less than twenty years would liquidate the debt, and leave the establishment free to the corporation. The establishment consists of twenty-five baths, viz.:—one vapour, charge, 1s. 6d.; five first class, 1s.; five second class, 6d.; fourteen third class, 3d. The number of baths taken each year is given as follows:—

	1st class.	2nd class.	3rd class.	Total.
1848	2,544	6,380	8,605	17,529
1849	3,154	7,520	8,791	19,465
1850	3,339	8,517	11,057	22,913
1851	3,886	8,950	11,986	24,822
1852	3,744	9,074	11,122	23,940
	16,667	40,441	51,561	108,669

The entire cost of the establishment was upwards of 3,200*l.*; and the amount of the debt at this date is about 1,300*l.*

Glasgow.—There is now a prospect of the long-delayed alterations and improvements in the choir of the Cathedral here being speedily carried into execution. The upper and modern portion of the present screen between the nave and the choir is to be taken down and rebuilt in conformity with the simple Gothic character of the other parts of the Cathedral, and to be glazed with plate-glass, so as to afford a view of the whole structure from west to east. The present galleries are to be wholly removed, and the sittings in the increased area are so to be arranged as to afford something like a similar amount of accommodation to that which the congregation now possesses. The present roofing of the side aisles is to be removed, reconstructed, and covered with lead.——Messrs. Tod and M'Gregor, the engineers and iron steam-ship builders here, have contracted to have their building-yard covered with glass and lighted with gas. In this structure Messrs. Tod and M'Gregor will be able to build several first-class ocean steam-ships at once, the men working full time, comfortably, in all sorts of weather, and if necessary, a second relay of men employed during the night. The cost of the erection will be about 12,000*l.*——An iron and glass bazaar or market-hall is about to be erected in Candleriggs-street; it will extend about 200 feet.

SMOKY CHIMNEYS.

I BEG leave humbly to trouble you with a few practical ideas on this most important subject, having had forty-five years' experience therein. I have for some years felt inclined to write to you on the subject, but from time to time have neglected it, thinking (I suppose) it would only be shelved, coming from a bricklayer. But now, feeling much disgusted at the gullibility of the public respecting the general opinion that a fan chimney-pot, or one with a screw and a cardinal's hat on, or a tall tube, 6 inches diameter, to fix into a flue 14 by 9, will cure a smoky chimney, I am induced to do so.

The plan now is to run the larger flue into the smaller one, when the directly opposite ought to be the case; not in any particular flue, but in all and every flue you can mention, which I beg leave to show. The flue should be smaller at the fire end, whether horizontal or perpendicular, and gradually expand to double the size, if possible, which will insure a good draught. I have made flues under ground, 14 by 12 inches, 250 feet in length, running into a shaft of 100 feet, 4 feet diameter on top, which drew so sharply that the flame did not touch the covering of the flue at all, to try which I covered a length of 10 feet with wood and let it remain a week during the firing; when taken up the wood was not charred at all. The register of a baker's oven is 5 inches by 6 inches, generally running into a flue 14 inches by 9 inches. Set a copper in the middle of a room, with a wheel flue 9 inches by 4 inches: continue the same size until it comes to the house flue, which is 14 inches by 9 inches,—you are aware how fiercely that will draw. Greenhouse flues, horizontally 6 inches by 12 inches, running into

a shaft half length in height, 14 inches by 14 inches, will draw furiously. Square or tubular steam boilers, brewers' coppers, double or single flue, all act on the same principle. For the sitting and bed rooms of houses the mantel of the fire-place should be but 2 feet 6 inches from the floor; the flue should commence as much in the form of a common register as possible, say 9 inches by 9 inches, gradually expanding the next story to 10 inches by 10 inches; the next 12 inches by 12 inches; and so on to 14 inches by 14 inches, allowing of no check; and every incline of not less than 60 degrees, build the chimney-stack 4 feet above the party-wall: each flue when finished being 14 inches by 14 inches, you will not want chimney-pots or a good draught, unless a high tree or higher house is next your chimneys. This way of expanding the flues requires the upper breasts to be built larger than usual. The great cause of cramping of flues is this, that the builders will not set out the breast large enough in the basement story, so that they corbel over and over, and that quickly to get their opening; consequently cramp the flue at every story: my way only admits of corbelling over 1 inch in front, every story.

Wm. Broomfield.

METROPOLITAN BARRACKS.

It does appear strange, that of all parts of the kingdom London is the worst provided in barracks for the accommodation of troops. The best of those we have are the worst placed, and nearly all are situated in the most populous districts,—unfavourable to discipline, and a plague to the residents of the vicinage, St. John's-wood barracks being the only exception.

Take the last built, on the Bird-cage-walk: what can be more unhappily chosen? The site near the lagune of water cannot be a wholesome quarter, and it is hemmed in on the Westminster side by the lowest and vilest tenements of the town. True, it is a position rather handy for housel old troops, or pretorian guards; but a captain's guard-house, adapted to the requirements of that contingent on duty, would amply suffice for the duties of the palace, and for the protection of royalty.

It would be absurd to suppose that our beloved Queen needs the propinquity of a regiment, or that the half-dozen of blue-jackets who parade the front court of Buckingham Palace would not be sufficient. In fact, the only requirement of the palace in this respect is for a guard of honour; and the mass of the Guards, both horse and foot, might as well be stationed some three miles for infantry and five miles for cavalry, distant from the royal abode.

Such a quarter, at a respectful distance from a free and loyal population, and in good air, would be more conducive to the health of the troops and the morals of the citizens.

In the districts of England the barracks are far better than in London. In Ireland they are incomparably so. Dublin, a city of,—say 140,000 inhabitants, has in the outskirts many noble military barracks of architectural pretensions, some of them capable of housing two or three regiments comfortably. Here, on the contrary, the quarters seem to have been taken up in haste, and planted on the most unfortunate localities. Charing-cross, for instance, takes 400 or 500 troops, housed in the most valuable centre, and trenching on the public accommodation. Portman Barracks occupy a stable mews, sunken between high rows of trading-houses, and this lodges as many more of the Guards. Kensington Horse Barrack occupies the side range,—the most beautiful position of the loveliest ramble now open to the pent-up denizens of the West-end: and this miserable hovel (a disgrace to the Government which tolerates it), is suffered to mar, in its tottering decay, the most fashionable and prized quarter of the town. The senseless guard-house and timber-yard, with the old cottage, lie-by, and the six-acre inclosure in Hyde-park remain monuments of the iron inflexibility of official patronage, and a blot on the *prado* of fashionable resort.

Could not some architectural correspondent of the *Builder* point out to the authorities how they might dispose of the materials of Knightsbridge, and the other antique monstrosities referred to, and show how good accommodation and healthful quarters could be obtained, at a fitting distance (if only by selling for suitable purposes some of the sites), for the reception of all the troops required in the metropolitan district?

The camp at Chobham may inure the Guards to marches extended beyond a mile, but what will induce stubborn officials to yield to the progress of improvement?

Built on the way-side, all the existing barracks want scope for parade. Naked and exposed at the windows of leading thoroughfares, the men have to perform their ablutions and pipeclaying in the view of a dense population. Knightsbridge and Kensington are evidences of *decorum* in this respect! In Hyde Park, the *free and easy* caserne, situate just on the traverse junction of all the paths, treats the public to similar exhibitions, and worries or solaces (as the case may be) all ambulant nurse-maids with their infant charges.

A barrack, on an extended scale, has been talked of for the open grounds at Brompton. If properly enclosed by circumjacent margins, say 20 feet of plantation, and *moderately* high wall, with iron railing on top (7 feet would be enough, for sake of air and light), no position could be more eligible; and whilst under estimate, some improvement might be introduced in the arrangement of dormitories, &c.; so that the more humanised principle of common lodging-houses, now so well understood, may supersede the antiquated, rude, and indecorous usage of piling beds (for *married and single*) *in tiers* one above the other, to the low ceiling! In camp, soldiers must rough it; in barrack, they ought to be treated like human beings.

No job is necessarily implied in the erection of a barrack; no colossal fortunes need be acquired, at the public expense, by architects and builders, as in some great structures which shall be nameless.

Quondam.

OUR STREETS.

The wood for our street pavements having nearly worn itself out, owing, in a great measure, to those monstrous railway vans, and the thousand-and-one omnibuses, and given way to the more noisy and durable granite, might it not be desirable to consider some means of continuing to us one certainly admirable quality which the wood afforded over the stone pavement, and for which it was chiefly recommended, viz. its noiselessness, so that persons reserved the wear and tear of their lungs till they reached the wood. So intolerable have our great leading thoroughfares become from the incessant din of wheels, *iron grating upon stone*, that tradespeople are compelled to close their doors in the hottest weather, and be stifled with the gas in the coldest, to hear or converse with their customers, or with one another. Now, without being in the least way interested with the noiseless wheel scheme, I cannot help thinking that some such means might be adopted; and, if so, ought to be enforced by legislative enactment, so far as our public conveyances are concerned; and could we but add a *circuit—not central*—railway to carry off the heaviest traffic, we might clear our streets of both noise and nuisance. And let me add one other suggestion, that all great thoroughfares at this full season of the year, at least, be kept clear of the empty equipages of the great, which should be turned off to the nearest side street, and there remain in waiting. In like manner with the public conveyances. The detention in Regent-street, in particular, calls for such a regulation.

E. Richardson.

New Cathedral for Hobart Town.—It has been proposed to erect a new cathedral in Hobart Town, in order to meet the increasing demand for church accommodation, caused by the influx of population attracted to this quarter of the world by the gold discovery. The plans, according to the *Tasmanian Church Chronicle*, are to be obtained in the colony; but in case they should not be satisfactory, Archdeacon Marriott, who proceeds to England by the *Derwentwater*, will be instructed to send out plans, which he has offered to obtain at his own cost. It is also proposed to lay the foundation, if possible, on 9th August, being the fiftieth anniversary of the formation of the colony. The edifice is to be a plain substantial church, adapted to cathedral purposes.

HYDE PARK.

I think the idea of your correspondent, "R. G." as to Albert Gate, is worth consideration, especially if it was connected with an alteration which has just been made in the horse ride. The additional (and, in my opinion, uncalled-for) width in the latter will encourage fast and dangerous riding, promote dust, and inconveniently separate the fashionables, many of whom are attracted to the park to gaze at each other. I would, therefore, suggest the newly-enclosed ground being arranged for carriages, and a footway or walk made between the new carriage-drive and Rotten-row, forming a promenade something like those in the Prater at Vienna and at Florence;—the *western* approach to the carriage-drive being opposite the Exhibition-gates, Kensington-gardens, and the *eastern* approach opposite the proposed new gate, or inclining towards the present Albert-gate: the latter, perhaps, would be most acceptable to Belgravians. The expense would be trifling, the pleasure and convenience great to promenaders and loungers of all denominations; and if the present Princes-gate were removed, in due time, to the centre of the *proposed* National Gallery, &c. where Gore House now stands, and the ground in the park which is now trenched up, planted to embrace and bring into favourable view the points indicated, the improvement would be complete.

Perambulator.

THE ISLINGTON DISTRICT SURVEYORSHIPS.

The election of three surveyors for the Islington districts is fixed to take place on Thursday next, the 14th. *Nineteen* architects presented themselves before the Committee of Justices last week to be admitted as candidates. We should be excused, probably, if we used our facilities to set forth the claims of one of the candidates, Mr. Godwin; *but*, under the circumstances, consider it better to leave the matter to the unbiassed consideration of the magistrates. The *Illustrated London News* and the *West London Guardian* spontaneously alluded to these claims, and have our hearty thanks for the kind feeling which prompted the act.

LONDON RAILWAY ACCOMMODATION.

If you will take a map of London, and draw a line in continuation of the river front of the new Houses of Parliament to a point opposite Whitehall-stairs, and thence, about N.N.E. to the S.S.W. corner of the Adelphi, you will see that it includes several acres of land, which may be reclaimed from the river without hurt.

If you will draw another line from the river up Northumberland-street to the Strand, thence along Charing-cross and Whitehall to Scotland-yard, and thence down to the river, you will see that it includes little property of much value, besides Northumberland House.

Those two pieces of ground might be made available for the purposes of a West End terminus.

On the other side of the river, draw a line from London-bridge to Nine Elms, at an average distance of 50 yards from the present wharf walls, and an ample space for a railway and wharfs is included.

Between Cannon-street and Upper Thames-street, nearly due north from Old Swan-stairs, a City terminus might be made, with an approach from the river at those stairs.

Connect the West-end terminus by a bridge a little to the southward of the Hungerford Suspension Bridge, and the City terminus by a bridge at Old Swan Stairs, with the railway on the southern bank of the river, and the distance from Charing-cross to the Royal Exchange would be a mere trifle longer than by a railway on the northern bank of the river.

A railway along the northern bank is out of the question. It would spoil too much property.

A railway along the southern bank would increase the value of the property adjoining it.

The south-bank railway would afford easy means of communication near London-bridge, with the South-eastern and Brighton lines, near King's Arms Stairs, and at Nine Elms with the

South-western line, and by a continuation to Battersea, with a branch easily to be made over "Punch's line," from the Great Western.

It may be objected that the lines over the bridges would join the South-bank Railway at right angles. Granted; but in these days of turning tables, a new turn-table, to avoid the inconveniences of such junctions, would be invented if it were needed. N. R.

THE JUNCTION OF RAILWAYS QUESTION.

A CORRESPONDENT, "Rouse them," draws our attention to a special and general meeting of the South-eastern Railway Company, at which a "Bill to effect the junction or approximation of the stations, at Reading, of the Reigate, Guildford, and Reading branch, and of the Great Western Railway," was considered, or rather was regarded as providing for so self-evident an improvement as not to require any "useless occupation of time, to do more than merely allude to" it, as remarked by Mr. Mc Gregor, M.P. the chairman. Now, "what comparison does the evil at Reading bear to that in London?" as our correspondent justly asks. The disconnected state of railways in the metropolis, as we have before observed, is contrary to common sense. We are glad to see that the railway companies appear to be opening their eyes to this view of the subject of railway disconnections, and although that immense *hiatus* the metropolitan disconnection in general, seems to be too vast a void to be appreciated all at once by corporate eyes, we hope to live to see the day when these will be as widely open to this great absurdity as they now are to the little one at Reading. Indeed, from the effort made some time back by the very company now engaged in this small advancement in the right direction, namely, in the shape of a West-end connection, it might have been thought that even by this time not a few threads of suburban railway connection might have strung together some few of the metropolitan railways, north and south, and east and west, leaving comparatively little to do in the completion of an entire ring round the metropolis. It would certainly have been a little more rational to have begun with these, and when the whole country, north, east, west, and south, was thus benefited, then to have gone to the merely local and partial connections in the country, such as that now projected.

BATHS FOR LAMBETH.

ON Saturday last the swimming-baths at the new establishment of baths and washhouses, at Lambeth, were opened to the public. The undertaking, under the powerful auspices of not only the principal men of the borough, but of some of the most respected philanthropists in London, was commenced but a short time ago. The exigencies of the densely populated neighbourhood, however, determined the directors to afford to the public these advantages as early as they could be given to them, and at a great sacrifice of convenience, and at a great cost, the two swimming-baths—the largest in the world, it is said—were opened at noon on Saturday. The building, which will shortly be completed, will comprehend fifty-five private baths, besides vapour and shower baths, and thirty-six washing compartments, and it is estimated that 8,500 bathers may be conveniently and efficiently accommodated in a day. There are several very novel arrangements in the design.

The first-class bath is covered with a roof of lattice construction similar in conception to the lattice bridges in America; but it has also counter trusses supporting purlins of lattice construction: these prevent the chance of lateral settlements in the roof, and by enabling the principals to be placed at larger intervals, contribute to the economy of its construction.

Another point has been carried out: the first-class private baths have been placed on an ornamented iron construction as a gallery over the gangways of the swimming-baths, thereby saving the expense of separate buildings. In the centre is a fountain, which continually affords a supply of pure water: an overflow-outlet constantly ensures its change and its purity. The washing department is as yet unfinished; but it will in every respect contain all the advantages derived from the late investigation. It also possesses a novel feature. The greatest and most valid of all objections to the present system has been this—it has been urged that no woman with a young family can leave her home with the chances of danger to the infants she leaves behind. The architects have designed an infant-school in connection with the washhouse, where the children may be left with safety and with advantage to themselves, while their mothers are engaged (in the next compartment only) in the domestic duties. Messrs. Ashpitel and Whichcord are the architects.

ARCHITECTURE AT UNIVERSITY COLLEGE.

THE distribution of the prizes for the session of 1852-3, at University College, took place on Friday, the 1st inst. Sir Roderic Murchison, F.G.S. presiding. The following are the awards in Professor Donaldson's Classes of Architecture and Construction:—

FIRST YEAR COURSE.—FINE ART.

Prize and 1st certificate	.....	C. W. Wilson.
,, 2nd ,,	.....	C. L. Luck.
,, 3rd ,,	.....	Thomas Sich.
,, 4th ,,	.....	Stanley C. M'Murdie.

SECOND YEAR COURSE.—FINE ART.

Prize and 1st certificate	.....	J. H. Stevens.
,, 2nd ,,	.....	Frederick Austin.
,, 4th ,,	.....	Thomas A. Britton.

FIRST YEAR COURSE.—CONSTRUCTION.

Prize and 1st certificate	.....	George Webb.
,, 2nd ,, (equal)	.....	Thomas A. Britton. / Isaac Wilkinson.
,, 3rd ,,	.....	Thomas Sich.

SECOND YEAR COURSE.—CONSTRUCTION.

Prize and 1st certificate	.....	Frederick Austin.
,, 2nd ,,	.....	Thomas A. Britton.
,, 3rd ,,	.....	Henry Hughes.

The prizes consisted of Batissier's "Histoire de l'Art Monumental," Sharpe's "Seven Periods," Sharpe's "Decorated Windows," and Gisor's "Palais du Luxembourg." The professor reported, that the classes had visited with him the Egyptian and Grecian Room, in the British Museum, on two several occasions; Westminster Abbey, St. Paul's Cathedral, Mr. Cook's large warehouse in St. Paul's Churchyard, and St. Bartholomew's Church, Smithfield; the pupils having given in written reports of these visits, including a description of the ingenious scaffolding employed by Mr. Parris for the restoration of the decorations in the dome of St. Paul's. Mr. Donaldson remarked, that these reports had been full of able remarks and clever sketches, and exhibited such an earnest spirit of observation and desire of improvement in the pupils, that he had felt himself called upon to distribute ten prizes of emulation among the classes during the past session.

IMPRISONMENT FOR BREACH OF CONTRACT.

The Queen v. *Moore and Others.—The Nelson Column.*—A few days ago Messrs. Moore and Tresange were prosecuted in the Queen's Bench for defrauding her Majesty's Commissioners of Woods and Forests, and with obtaining money under alleged false pretences, in a matter of contract for bas reliefs for Nelson's Column, Charing-cross.

The Attorney-General stated the case, from which it appeared that the Government of the late Sir Robert Peel had come to a resolution to ornament the base of the Nelson Column with bas reliefs, or bronze castings, representing four of the great sea battles and victories of the immortal hero. They accordingly advertised in the *Gazette* for tenders. The defendants, Messrs. Moore and Tresange, put in a tender and obtained the contract for three of the bas reliefs, representing the battles of Copenhagen, St. Vincent, and the Nile. The fourth bas relief, the "Battle of Trafalgar," Messrs. Christie, Adams, and Hill obtained the contract for. The defendants pleaded by letter that they had undertaken the execution of the works for 365*l.* each, provided the Government would find the metal; and 747*l.* 10s. each if they (the defendants) were to find it. The latter tender was agreed upon. Before the works, which were to be executed in bronze, were finished off, and in a state of readiness to be put up, the Board of Works received an anonymous letter, apprising them that the defendants were not executing the works entirely in bronze, according to their contract, but were backing, filling, and loading the casts with inferior metals, &c. The Board of Works, in consequence, despatched Mr. Fincham, Clerk of the Works, to the defendants' foundry, to investigate the matter. That gentleman, on arrival at the foundry, met the defendants, and proceeded to examine the casts, each of which was to contain, according to the specifications, three tons and a half weight of bronze. In his examination he discovered portions of plaster of Paris, and on cutting through it with his knife, he discovered portions of iron and of other metals. He found the weight of bronze of one of the battles not to exceed two tons eleven hundred, and one quarter weight. He remonstrated with the defendants, one of whom, Mr. John Moore, called him aside, and admitted that they had loaded the casts, as discovered, and stated that they could not have executed the work for the sum contracted for had they not had recourse to the expedient of loading the casts.

The jury found the defendants guilty, but recommended the younger Moore to mercy.

Lord Campbell sentenced the latter to one month's imprisonment, and the other two defendants to three months', in the Queen's Prison, to be confined in the compartment of the third class of misdemeanants.

RESPONSIBILITIES OF RAILWAY COMPANIES.

IN the Hitchin County Court, on June 21st, his Honour (Mr. Roe) read the decision in the case of Isaac and Robert Newton *v.* The Great Northern Railway Company, which was tried at the last County Court, being an action for the recovery of 2*l.* 1s. 6d. damages done to two boxes of glass in their transit from London to Hitchin.

His Honour, in delivering judgment, said:—Railway companies were subject to the same laws as common carriers; that where the goods were proved to have been properly packed and safely delivered into the custody of the parties, who undertook the conveyance of them, they became the insurers of those goods till they arrived at their destination; and if, as in this case, further proof was adduced that they were damaged when delivered to the consignees, the same being discovered by their being unpacked immediately, the company were liable for the loss sustained; consequently, the verdict would be for the plaintiffs, with costs.

CHURCH OF ENGLAND EDUCATIONAL INSTITUTION, BOLTON.

THE ground on which this building is erected is centrally situate, adjoining the parish churchyard, the principal frontage of 150 feet facing south. The accommodation on the ground-floor consists of lecture-room, 38 feet by 23 feet, with laboratory, &c.; class-rooms, lavatory, hat-room, and other accommodation; reading-room, library, with librarian's office, committee-room and porters' room. The principal entrance, with staircase, is central. The entrance for students and staircase to school-room, are in the tower; a corridor running the whole length of building and uniting the whole. Above is the school-room, 56 feet by 27 feet, with class-room, &c. and a museum 70 feet by 27 feet, one end of which is open to library, forming a gallery carried on framing of cases for books. The ventilation of the whole is effected by lantern in roof: the roofs of school-room and lecture-room are also lit and ventilated by glazed ventilators, and framed with curved braces, the whole of fir wrought, boarded and stained. The walls are built of "Hornclife parpoints," uncoursed, the dressings being of Huddersfield stone. The sum limited by the committee was 3,500*l.* but the contract was taken, we understand, at 3,170*l.* The work was being performed satisfactorily, but the builder, not fulfilling the terms of contract in other particulars, another contractor was found to complete it at his prices. Afterwards it was decided to improve the north side of the building towards the parish church, as also the open roofs, &c. and to adopt a system of warming by Mr. Price, of Westminster, accommodation for which is provided in the basement. The architect is Mr. R. H. Potter, of London.

The object of the promoters is to provide a sound classical and commercial education, so as either to fit the pupils for mercantile occupations, or for subsequently proceeding to the university. The advantages of the institution are open to all. The land and the whole of the establishment are provided by its promoters, except teachers and current expenses.

The design was selected in competition, and Mr. Gregan, of Manchester, was called in to aid the committee in coming to a decision.



CHURCH OF ENGLAND EDUCATIONAL INSTITUTION, BOLTON.—Mr. R. H. Potter, Architect.

THE IRON TRADE.

Notwithstanding the tendency of the recent demand for increased wages and the impossibility of reducing them, to sustain prices, a further reduction of 20s. on the nominal rates was agreed to at the preliminary meeting held on Thursday in last week. The declared prices are now,—for sheets and plates, 12*l.*; hoops, 10*l.*; and bars 9*l.* We need scarcely say that these nominal rates have for some time been considerably undersold; as also have the relative rates of 4*l.* 10s. for cold blast mine pigs, and 4*l.* for hot. One house, says the *Times*, which to our knowledge, some few weeks ago, gave 5*l.* 5s. for pigs, has within the last ten days, purchased 100 tons at 3*l.* 15s. The chief urgers and sustainers of the late rise seem to be exceedingly put out by the determined downward course now in progress. The last reduction, says one of these, "has been matter of surprise to some, as it was scarcely expected without an attempt to diminish the cost of production; and it is argued that if, as would now appear, iron can be profitably sold at the rates usually realised under a nominal declaration of 9*l.* per ton for bars, with colliers' wages at 5s. per day, and puddlers and furnace-men advanced from 30 to 40 per cent. it may reasonably be asked, *why have the consuming public so long been gulled?* The poor dupes who have latterly been paying their 10*l.* and 11*l.* per ton have *just cause of complaint*. The workmen also will not be backward in making a note for their future guidance, and the proprietors of mines will have a better idea of the royalties to be demanded hereafter." Another authority in the trade says, that "notwithstanding masters have thus again yielded to the demands of buyers, it is generally supposed to be far from certain that the tacit understanding of Thursday will tend to the restoring of confidence in the trade. Indeed, it is said by those of most experience that the effect will be quite the opposite,—that masters will not be a whit better off in the coming quarter than they have been in the past,—that they will not have brought to their forges scarcely an additional order, as buyers will continue to hold back unimmediate orders, looking and hoping for a still further reduction."

There is not much likelihood of any break in the anticipated fall therefore. Serious complaints prevail as to the shocking bad quality of the "speculators' pigs," made for sale and sight, but not for manufacture into a creditable article. An effort, it is said, was fruitlessly made at the late meeting to arrange for a general blowing out of a certain proportion of the pig-making furnaces.

CAUTION TO BUILDERS DIGGING FOUNDATIONS.

BROMPTON COUNTY COURT.—WILSON *v.* HURST.

Mr. Roberts, solicitor, stated that his clients were stationers, of Parson's-green, and sought to recover 11*l.* 16s. 1d. of defendant, who was a builder. The defendant was engaged in rearing an external wall, and through not properly shoring up his client's house, the plaintiff's wall fell in, and did damage to his stock in trade to the amount sued for. He would prove it arose from neglect and wilful negligence, and it was high time builders were taught that in taking contracts at the lowest remunerative figure, they were answerable for mischief created by their cutting down labour.

Mr. Roberts called Mr. Wilson, who stated, that adjoining his house the defendant was erecting another, and had dug a trench to build a party-wall. This caused his shop wall to fall into the trench, and damaged his stock to the amount claimed.

By Mr. Horne.—He did not tell plaintiff to rebuild his place, but let them do it of their own accord. There was no foundation to his wall.

Mr. Dixon said he was clerk and superintendent to Mr. Mc Shew, the owner of plaintiff's house. The defendant took an extensive contract of them to build new houses, and alter the plaintiff's and others. The architects instructed the defendant, but witness overlooked the works for Mr. Mc Shew.

By Mr. Horne.—The defendant conducted the work in a very proper manner, and as a very careful man. The wall of plaintiff's was a nine-inch wall, and twelve feet high, and had been built four years. Defendant excavated close to plaintiff's wall, and six inches below its foundation: it is unsafe to do so. If plaintiff's wall had been thicker it might have been more safe. The new wall formed part of defendant's contract. It was not necessary to rebuild plaintiff's wall, as the new wall sufficed and gave plaintiff's shop more space.

Mr. Horne, counsel, urged that there was no proof of negligence, and it was clearly an accident. Mr. Hurst was a builder of some experience. His client knew well enough it was his duty, as a builder, to prop up walls when there was a chance of their falling outwards and inwards, by supporting them on each side—here he could not prop up the inside on account of plaintiff's shop, and had he propped up the outside he would have forced the wall inside. He considered it prudent to let it alone. He urged upon the Court that if he showed the builder had not acted in the way described by plaintiff's advocate, the defendant was entitled to a verdict. He called

Mr. Hurst, who stated that he excavated according to plan of contract. He found that the plaintiff's wall stood upon a mouldy soil. The trench was dug eighteen inches, a proper depth. It was unusual to shore up walls like the plaintiff's, and had he done so it would have fallen in to the opposite side. Was very much surprised to find what had happened. Objected to the claim on the ground of expediency in contracting matters, and for its extension.

George Shuter, defendant's foreman, said he took every care. The plaintiff's wall had no foundation. He could not tell how the wall fell unless the mould slipped.

The Judge (Adolphus) said it appeared there was some negligence, and defendant was clearly liable for damages arising from it. He thought the damage overrated, and his judgment would be for the plaintiff—damages 9*l.* with costs of suit and attorney.

SURVEYORS' TENDERS FOR BOARD OF HEALTH.

I have often been at a loss to comprehend upon what data many surveyors make their estimates when tendering for the survey of a town or district under the Public Health Act, because from the great variation amongst them it appears that any calculation into the matter is of no moment. This foolish competition has been the cause of many surveys being made in a disreputable manner, causing ruin to the party and delay in carrying out sanitary works in many towns. You will see by a copy of a few tenders I shall give you, how far you can expect work so done to be correct; and these repeated failures are the reason why the General Board of Health inspectors so strongly recommend the ordnance survey to all local boards, thereby destroying the profession of the civil surveyor. Mr. Lee, one of the inspectors, at a late local meeting, stated, "that from the inaccuracy of much of the work that had come under his observation and that of others, and the evident failure of civil surveyors in undertaking large trigonometrical surveys, he should certainly recommend the ordnance surveyors to the board, as they possessed those means for carrying out such a work that civil surveyors did not. He had no doubt there were many competent men in the profession, and men upon whose work reliance could be placed, but judging from what he had seen he must give the ordnance the preference." There are many who will differ with Mr. Lee, and can tell him they can carry on a large trigonometrical survey as well as the ordnance. No one will doubt the efficiency of the ordnance staff and their *means* of carrying a work out, but to be told by one of the same profession that the civil surveyors cannot do it so well, argues badly for the standing of the profession. Into such little repute has the profession fallen, that it is rarely we see a surveyor required for any town whose salary exceeds from 100*l.* to 200*l.* a year. The profession may be over-stocked, but how are we to arrive at the cause of the surveyor's remuneration being now so low, when all other professions and trades appear to be rising? It is a rare case when an assistant surveyor, no matter what his experience and ability may be, can get as much pay as a journeyman joiner or bricklayer, and then be only employed for a few months in the year.

A surveyor formerly always used to be worth his half-guinea or guinea a day. How difficult indeed must it be for any set of gentlemen to judge of the value of a surveyor's work, when they have before them a pile of tenders like the following:—A large town, containing about 150,000 inhabitants, was to be let about a year and a half ago, when the tenders were as follow—A. 2,200*l.*; B. 2,000*l.*; C. 1,350*l.*; D. 1,310*l.*; E. 1,246*l.*; F. 1,049*l.*; G. 830*l.*; H. 634*l.*; I. 396*l.* 12s. The tender of G. was accepted. Of course this was to be a trigonometrical survey, over an area of nearly 3,000 acres. I need scarcely state, that the party who took the work, after having had innumerable men at from 1*l.* to 30s. a week, never completed it. Another set was for a town, with 18,000 population—A. 960*l.*; B. 620*l.*; C. 540*l.*; D. 400*l.*; E. 360*l.*; F. 300*l.*; G. 205*l.*; H. 184*l.*; I. 140*l.*; K. 77*l.* 10s. After the contractor working one year, this was relet. A town of 25,000 inhabitants ran thus—A. 850*l.*; B. 580*l.*; C. 420*l.*; D. 300*l.* 14s.; E. 170*l.*; G. 110*l.* Another, with 9,000 people, was estimated for by—A. 680*l.*; B. 530*l.*; C. 490*l.*; D. 314*l.*; E. 209*l.*; F. 166*l.*; G. 131*l.* G.'s tender was accepted. Now, sir, there must be some parties who wish to make money very quickly, or else others who have a new system, whereby they neither require meat nor drink. How can any board put a value upon any man's services when they have presented to them such tenders as these? I can give you the names of the towns and the parties. Hence the insults that are daily put upon the profession, in the shape of such advertisements as appear in your journal every week. Take, for instance, that fast go-ahead place, Newmarket, where they require a resident surveyor; and fancy a gentleman placing his son, at a great cost, for five or six years, to learn a profession, when, perhaps, with ten or twelve years' more experience, he may be offered 80*l.* a year, and for that give a bond of 400*l.* as at Newmarket, where there appears to be no end of his duties. "He is to be able to construct waterworks, prepare specifications, construct sewage of streets and house drainage, measure off work, make and manage roads, streets, pavements, &c. take levels, draw plans, inspect nuisances, superintend highways, collect rates, and carry out all works contemplated by the Public Health Act," &c. &c. &c. The above is a pretty good bill of fare, for which his remuneration will be about 30s. a week, and have bond for 400*l.* I wonder he has not the lamps to light and streets to sweep. All his time is to be devoted to the duties of the office: this might have been left out, for I fancy he will, in carrying out the above, find plenty to do.

Vindex.

Notices of Books.

A Practical Treatise on the Manufacture and Distribution of Coal Gas; its Introduction and Progressive Improvement. By Samuel Clegg, Jun. M. Inst. C.E. F.G.S. Second edition. Weale, High Holborn, 1853.

In this edition of Mr. Clegg's work, he has treated of the various improvements that have been made in the manufacture of gas since the first edition was issued in 1841. He has retained in it descriptions of many portions of apparatus that have ceased to be employed. This, he states, he has done simply that their history may be preserved, since it is often as useful to know what machinery is defective as to be acquainted with that which is more perfect. The work contains a chapter on the Chemistry of Coal-gas, by Dr. Frankland, and some information contributed by Dr. Lyon Playfair. There is an analysis of the various kinds of coal found in different parts of the world. The book is plentifully illustrated both with plates and woodcuts. It contains an interesting historical sketch of lighting by coal-gas, in which it will be seen that our antiquated fellow-men, the Chinese, were gas-consumers ages before the knowledge of gas-lighting was acquired by Europeans. True, they are not said to have manufactured it, but they did better wherever that was possible,—they bored into coal strata, and used the leviathan gas-jets thence evolved, conducting them away through bamboo tubes to salt-works, &c. for heat, to streets and houses for light, and to kitchens, &c. for heat as well. The tubes were terminated by burnt clay pipes or burners, and intense fires were thus produced from gas, which burnt through cauldrons in a very few months. But what great "modern" discovery is it that we do not find anticipated, at least in its essentials, by that wonderful and mysterious people, the antediluvian and stereotyped Chinese!

St. Alban's Architectural and Archæological Society.—The annual general meeting of this society took place in the Assembly Room of the Town Hall, St. Alban's, on Friday in last week—the Earl of Verulam, president. The walls of the room were decorated with the society's collection of rubbings, drawings, &c. and with some exhibited by Professor Donaldson, and used by him in illustrating his paper on the royal tombs in Westminster, which the Professor read to the meeting, after the Secretary had read the usual annual report. The Rev. Dr. Nicholson read a statement of what restoration had been effected in the Abbey Church during the past year. On the following day the room was open for the inspection of the public, and a considerable number of persons availed themselves of the opportunity of examining the drawings and specimens exhibited.

Miscellanea.

EQUESTRIAN STATUE OF GENERAL JACKSON.—We learn from the New York papers that the original of Mills's equestrian statue of General Jackson was to be exhibited in the vicinity of the Crystal Palace in a large hall, to open on 7th June. This statue is said to be in some respects a remarkable one. The artist was self taught. "It was not till after long and intense study that he ventured upon his great task. He bought one of the finest blood-horses in Virginia, and studied its attitudes with continual care. He dissected horses, and made himself master of the anatomy of the animal. His studies in the anatomy of the human frame were equally persevering." His likeness of Jackson is said to be remarkably faithful, and the costume correct—the sword and the minutiæ of saddle, holsters, bridle, and buckles all being declared to be "true to history." These minor merits, however, are said to be completely outshone by its higher artistic features. Amongst these latter is ranked the free and natural action of the horse, rearing, which is effected, like Steell's (lately inaugurated at Edinburgh), without any adjunct, such as the stump of a tree, to assist in carrying the weight. A Congress, "not remarkably generous nor much addicted to the fine arts," voted the sculptor a gratuity of 20,000 dollars, and 50,000 dollars for a statue of Washington to be executed by the same artist.

PERMANENT MURAL PAINTING.—The desire to possess some means of preserving mural pictures from atmospheric influence, and of which fresco painting is still subject to decay, especially in northern climates, has been the cause of many experiments made of late, of which the Munich stereochromy has been one of the principal. In the present Paris Exhibition of Fine Arts, however, M. Devers, of Turin, a former pupil of Jollivet, Ary Scheffer, and Picot, has placed a large picture executed with enamel paste on burnt clay (*pâte d'émail sur terre cuite*). It is of large dimensions, 5½ by 4½ metres, and is composed of 78 pieces. The brilliancy of this picture, representing "Three Guardian Angels watching the Sleep of a Babe," is great; still there is some inequality of colour in it, as the want of greater means prevented the artist from using an adequate furnace for baking the single tablets of clay; and he was unable to burn more than sixteen at a time, which operation he had to repeat with the whole three times over. The execution of this vast enamel has cost M. Devers one year's labour, and an outlay of 10,000 francs. Stereochromy has been also used by M. Portaels on the walls of the Church of St. Jacques sur Caudenbreg, in Brussels. It is certainly a procedure more durable than the old Italian fresco. Still it is to be supposed that stereochromy, as practised at Munich and Brussels, will not be able to compete with tablets which, like those of M. Devers, have been exposed three times to the action of fire in a furnace. Other analogous experiments have been made at the Church of St. Vincent de Paul at Paris by M. Jollivet, who has executed his frescoes on tablets of lava from Volic. The latter are not subject, like those of baked clay, to warp by the influence of fire, and can be made of a smoother surface. As, however, lava tablets are not to be obtained everywhere, the procedure of M. Devers deserves every trial and encouragement. Besides the painting in the Paris Exhibition, he has previously made similar pictures for the palace of the King of Sardinia and the Church of St. Leu in France.—*The Press.*

BLASTING ROCKS.—A correspondent, well qualified to judge of such matters, sends us an account of a new apparatus for blasting, the invention of Mr. A. Stickney, of Norwich, Vt. It is a platinum tube, about 10 inches in length, with holes in its side; connected with this is an iron tube of any required length. This is the apparatus, and now for the operation. A hole is drilled in the rock to any depth; this tube is filled with charcoal and ignited in the platinum, and inserted in the drill-hole. A blacksmith's bellows is applied to the upper end of the tube, and the most intense heat is forced through the small holes upon the sides of the rock, scaling it off in fine powder at a rapid rate. When the heat is sufficient, the tube is withdrawn and water poured in, which enlarges the hole at the bottom. The effect of powder upon a rock when confined in such a way must be tremendous. The experiment has been tried with the most perfect success.—*Boston (U.S.) Transcript.*

SANITARY STATE OF SWINDON.—There has been great resistance to the adoption of sanitary measures at Swindon: nevertheless, from some startling printed statements in circulation, it would appear that in certain localities which it is held could assuredly be made healthy, fevers of a typhoid kind are the rule, and health the exception. Such a state of things ought no longer to be allowed to continue: indeed, we hear that the General Board of Health have appointed a superintending inspector to inquire into the matter and report.

MORE DANGERS AND DISASTERS.—On Saturday week, at Dowgate-wharf, Upper Thames-street, a warehouse in Joiners' Hall-buildings, containing several tons weight of chemicals, above a stable, fell to the ground, crushing a horse to death. Two men had barely time to escape, after hearing a noise which preceded the fall. It is suspected that during the thunder-storm of the previous day the building had been struck by lightning, which had thrown one of the principal girders out of place.——An immense iron warehouse for Australia, at Millwall, was shattered on that day by lightning, it is said, and several persons also narrowly escaped there with their lives.——A portion of the tunnel for the construction of the new sewer in Holywell-street, Strand, fell in on Friday, 1st inst. and suffocated or otherwise killed a workman who was engaged in boring the tunnel and was covered by the brickwork of an old sewer running parallel with the tunnel, the sewer being constructed in a series of lateral shafts and tunnels.——A house at Hackney fell last week, in consequence of undermining a party-wall, burying two of the workmen in the ruins. Neither were killed, but both were dangerously injured.——A wall of one of five new houses in course of erection at Bolton fell, on Wednesday in last week, injuring several of the workmen. Part of the wall had been erected during the wet weather.——A smith's workshop, at Monkwearmouth, Sunderland, fell on Monday in last week, and wounded one of the men who were engaged in drawing the props supporting a long beam on which a brick wall was built.

FOUNDATION OF THE WELLINGTON PIER AT YARMOUTH.—The first stone of the new pier for Great Yarmouth, was driven on Tuesday in last week by the Mayor, and Mr. Waddington, chairman of the united Norfolk and Eastern Counties Railway Company, and in the presence of some thousands of spectators. The community at Yarmouth are indebted to Mr. J. C. Palmer, the honorary secretary of the new Pier Company, for the original suggestion of this work nine or ten years since, and for his subsequent exertions in the cause; and also to Mr. Peto and Mr. Waddington, for substantial support as capitalists, in enabling the projectors to realize the work.

PORTLAND BREAKWATER.—This great structure now extends upwards of 3,060 feet, comprising 102 bays of piles, each bay being 30 feet in the clear. The foundation of the inner breakwater is filled up level with the water, and is ready for the masonry. Preliminary arrangements are now being made for laying the first tier of stones, with which the pier-heads at the extremities of the opening are to be constructed. For some months past artisans have been employed in cutting and shaping the stone to the moulds. They are now laid out at the end of the Gantry at the foot of the incline, in the form of a segment of a circle, being a fourth of the whole area of the piers (which are designed to be of a circular form). The travelling Gantry is now run out to the end of the inner breakwater, and is ready for lowering the stones, and working the diving-bell. Divers are daily employed in levelling the ground work.

CHESTER ARCHÆOLOGICAL SOCIETY.—On Thursday in last week, the members of this society made an excursion to Valle Crucis Abbey, near Llangollen, when Lord Dungannon showed them over the ruins, pointing out the recent restorations. The party then adjourned to the Hand Hotel, Llangollen. The afternoon was spent among the places of interest in the neighbourhood, and the ladies and gentlemen of the party then returned to Chester.

ESTIMATES AT SWINDON.—The following tenders for building labourers' cottages were lately given at Swindon. The highest was 1,520*l.* 9*s.* 10*d.*; the lowest was 678*l.* How very accurately the first must have made his calculations that he could not abate the tenpence! Mr. Sage was the architect. If it be true that Mr. Onion estimated, there ought to be no want of a "Michaelmas disb."—ONWARD.

SUFFOLK ARCHÆOLOGICAL INSTITUTE.—The first *réunion* for the year, of this society, took place on Friday fortnight, the Rev. Lord Arthur Hervey, president. The estate of Sir Thomas Cullum, at Hawstead and Hardwick, was the place of meeting on this occasion, and various papers connected with objects of interest on the estate were there read, and a repast presented to the guests by Sir Thomas in a marquee on the lawn.

TENDERS FOR SCHOOLS AT FOLKESTONE.—I enclose you the following odd tenders for new schools to be erected here. The quantities were supplied by the architects themselves, Messrs. Keeble and Messenger:—

Holdam	£2,596 14 0
Fornan	2,560 10 0
Andrews	2,470 0 0
Hoad	2,460 15 0
Edwards	1,998 0 0
Regis	1,800 0 0

F. E. H.

OPERATIVE MASONS' BENEFIT SOCIETY.—We are asked to draw attention to the circumstance, that the forty-third anniversary of this society will be celebrated by a dinner at Highbury-barn Tavern, on the 19th instant, and we do so willingly. Mr. Myers will take the chair, and Messrs. Baker, Cubitt, Freeman, Grissell, Jackson, and Piper are amongst the subscribers.

THE WESTMINSTER NEW BRIDGE BILL.—This Bill has been read a third time and passed in the Commons. Great dissatisfaction was expressed in regard to the lowness of the headway, and that this should be the case "merely for the ornament of the new palace." Sir William Molesworth said, that at present the bridge was sufficiently expansive for the traffic of the river, and the proposed bridge would have an arch of a larger span. The opinion of the ablest authorities had been taken on the subject, both with reference to the traffic over the bridge and the traffic under it. He admitted that one point in his consideration (very properly so, too) had been the effect of the bridge upon the appearance of the two Houses of Parliament, which had cost the country 2,000,000*l.*

[ADVERTISEMENT.]

TO THE EDITOR OF THE BUILDER.

SIR,—My attention having been directed to a statement in your advertising columns of last week, which, though it is not calculated to do me an injury, is likely to mislead the public. It is true that we (Clark and Co.) have discontinued manufacturing the Revolving Iron Shutters, which we so extensively introduced, and are known as the Convex Shutter,—not because the patentee has obtained an injunction to restrain us, but in consequence of our having obtained her Majesty's Royal Letters Patent for the greatest improvements ever effected in Revolving Shutters,—namely, the combining two materials (iron and wood), in their construction, and forming the knuckle or hinge in the solid with the lath, which greatly increases the strength, and allows them to be rolled in either direction, the particulars of which are fully set forth in our advertisements in your columns, and are as superior to the convex, or any other shutter, as the convex is to the common lifting shutters. With reference to the injunction, it was obtained by my consent as a matter of form, and the patentee was most anxious for me to continue manufacturing the convex form of shutter, which I declined to have anything to do with, having so superior an article of our own to offer to the public.

I am, Sir, your obedient Servant,
PATRICK CLARK.

15, Gate-street, Lincoln's-inn-fields, London,
July 6th, 1853.

TENDERS

For "rectory-house," East Peckham. Messrs. W. G. and E. Habershon, architects. Quantities supplied:—

Sutton and Walter	£3,020
Thomson	2,400
Rowland and Evans	2,251
E. Carter	2,157
Shadgate	2,090

For a house and stables, &c. at Tulse-hill, for Mr. R. Griffith. Mr. Charles Grey, architect:—

Richelieu and Niblow	£2,190
Sanders and Woolcott	2,160
Clemence	2,129
Rowland and Evans	2,101

To the Metropolitan Commissioners of Sewers for a new sewer in Oakley-street, Chelsea:—

Battenbury	£1,240
Dethic	1,035
Eldred	1,034
Humphreys and Thirst (accepted)	1,025

TO CORRESPONDENTS.

"C. J. P." "J. M." "J. E." "J. B." "J. D." "J." "W. B. S." (we are forced to decline). "W. F. C." "H. G. W." "E. M." "H. B." "J. A. B." (we do not wish to pursue the subject farther). "P. B." "M. J. H." "W. D. O." "J. H. H." "Weekly Subscriber" (such lists only serve to mislead: we gave them at one time). "R. B. G." "A. A." "B. C." "Paxonian." "R. K." "G. W." "F. A. C." "E. M." "J. S." (such work is often painted without scraping,—more turps being used). "Manchester" (1,000 thanks).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c. JAMES LYNE HANCOCK, Sole Manufacturer (and Licensee), Goswell mews, Goswell-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now manufactured from 1-8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE for FIRE ENGINES, LIQUID MANURE, and for conveying HOT WATER to BATHS in DWELLING-HOUSES and BREWERIES, manufactured to resist great pressure of any length and size to order.

*** Testimonials may be had on application at the Manufactory.

N.B. VULCANIZED WASHERS and SHEET RUBBER or Steam and Hot-Water Pipes, and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

TO SURVEYORS AND OTHERS.

THE Tunstall Commissioners are in want of a competent person to fill the several offices of SURVEYOR of HIGHWAYS of the township, COLLECTOR of RATES, INSPECTOR of MARKET, and NUISANCES. The party applying must be well acquainted with road making, surveying, and building; will have to devote his whole time to the several duties which will devolve upon him; and must be prepared to enter into a bond, with sufficient surety, duly to account for all moneys which may come into his hands. Persons desirous of applying for the above appointment must send in to me testimonials, with the amount of the salary they will require, under seal, endorsed, "Tender for Surveyor," on or before 1st day of AUGUST next. Any further information may be had on applying to

THOMAS LLEWELLYN, Clerk to the Commissioners.

Tunstall, Staffordshire, 23rd June, 1853.

BOROUGH of MIDDLESBROUGH.—SURVEYOR and COLLECTOR WANTED.—The Town Council of Middlesbrough are desirous to engage a competent person as Surveyor of the Streets and Roads, and Collector of the Rates under the Improvement Act (which usually amount to two annually). Population, about 10,000. Salary, about 150*l* per annum. The person appointed will be required to find two approved sureties (householders) in 300*l*. A detailed specification of the duties to be performed may be had on application to the undersigned; and applications, in the handwriting of the applicant, and with testimonials of his character and ability, a statement of his previous occupation, and the names and addresses of his sureties, must be at my Office, not later than TWELVE o'clock at noon, on TUESDAY, the 12th of JULY.—By order,

JOHN S. PEACOCK, Town Clerk.

Middlesbrough, June 29, 1853.

ENGINEERING PUPIL.—The Town Surveyor of Bangor has a VACANCY for an ARTICLED PUPIL.—For further information address to The Town Surveyor, Bangor, North Wales.

CARDIFF LOCAL BOARD of HEALTH.—Wanted, an ASSISTANT SURVEYOR and INSPECTOR of NUISANCES. Salary, 70*l*. per annum.—Applications and testimonials to be forwarded to the undersigned on or before the 31st instant. By order of the Board,

Cardiff, 5th July, 1853. T. WATKINS, Clerk.

TO PLUMBERS AND GASFITTERS.

A GOOD Workman, competent to undertake both the above branches, may hear of CONSTANT EMPLOYMENT by applying to Mr. FREWER, 105, Upper Thames-street, City. A good three-branch hand also wanted.

WANTED, by a Builder, in Oxford, a good CARPENTER and JOINER, who thoroughly understands the setting out of work, to undertake the management of Shop and Yard, assist in keeping the Books, and act as General Foreman. None need apply whose character will not bear the strictest investigation. Also is wanted a good MASON, who thoroughly understands the setting out and management of buildings.—Address, stating age and salary, to A. B. Post-office, Oxford.

WANTED, in the County of Middlesex, eight miles from London, a BUILDER'S CLERK, who understands bookkeeping, estimating, taking out quantities, and making working drawings.—Address, stating terms, and where last engaged, to J. W. Builder, Post-office, Edmonton.

WANTED, a BUILDER'S FOREMAN.—He must be a thorough practical carpenter and joiner, with a knowledge of the other departments of building; capable of making working drawings and taking out quantities. The situation would be for a constancy. No person need apply unless he can give unexceptionable references.—Applications to be addressed A. D. Mr. Hule's, Architect, Northampton.

WANTED, immediately, for a permanent employment, ASSISTANT ENGINEERS, SURVEYORS, and DRAUGHTSMEN, for the Continent.—Address X. Office of "The Builder," with terms and references.

TO PLASTERERS.

WANTED, one who thoroughly understands his business in plain and ornamental work, and can prepare moulds and execute cornices, &c., from the drawing. Salary to be stated, and references given, which, if approved of, the situation will be permanent.—Address, post-paid, to Mr. GEORGE JEENES, Builder, Hitchin, Herts.

WANTED, immediately, a CLERK, who is competent to prepare fair and working drawings, specifications, &c. and to undertake the general duties of a Surveyor's Office. Address, stating age, terms, and other particulars, to H. H. Post-office, Luton, Beds.

WANTED, for a permanency, a steady and intelligent CLERK, thoroughly acquainted with Gothic drawings and detail, and with a full knowledge of the general practice of an architect's office.—Address, with the fullest particulars and references, to R. S. D. at Mr. Master's, 78, New Bond-street.

WANTED, a GENTLEMAN thoroughly acquainted with MEASURING and SETTING-OUT RAILWAY WORKS, and accustomed to all the routine of work in a contractor's office.—Apply by letter, stating salary expected, age, &c. to L. B. Messrs. W. Dawson and Sons, Advertising Offices, Aldecharch-yard, City, London

WANTED, TWO ARCHITECTURAL DRAUGHTSMEN, of first-rate ability.—Apply, with specimens and references, to Mr. G. H. STOKES, Oxford House, Anerly-hill, Norwood, Surrey.

WANTED, for immediate employment on the continent, good practical ASSISTANT ENGINEERS, good field SURVEYORS, and mechanical and civil engineering DRAUGHTSMEN.—Answers, stating age, salary, and references, to be sent to A. B. Messrs. Saunders, Brothers, Charing-cross.

CLERK OF WORKS.

WANTED, immediately, a very experienced person, capable of SUPERINTENDING WORKS to a mansion in the country.—Apply at No. 9, Southampton-street, Bloomsbury-square, between the hours of Ten and Four o'clock.

WANTED, an out-door APPRENTICE to a TOOL MAKER. A premium required.—Apply to J. T. 65, Crawford-street, Bryanston-square.

WANTED, a CONTRACTOR'S BOOKKEEPER and CASHIER. Respectable references and security required. Salary, 130*l*. per annum.—Apply by letter, addressed to H. H. Office of "The Builder," 1, York-street, Covent-garden.

TO CARPENTERS AND JOINERS.

WANTED, to APPRENTICE a respectable well-educated Youth, where he can obtain a thorough knowledge of the business. A moderate premium will be given. Apply to Mr. A. HIGGINS, Colman, Bermondsey New-road

TO BUILDERS, &c.

WANTED, an ENGAGEMENT by a Young Man practically acquainted with book-keeping and accounts, making drawings, and the routine of a builder's office.—Address, W. B. 14, Murray-street, Hoxton.

TO ENGINEERS AND OTHERS.

WANTED, by a Young Man who has been in the Pattern Line some time, a SITUATION where he can improve himself at the lathe.—Address O. P. 35, Hope-street, Hackney-road.

TO ARCHITECTS.

WANTED, a SITUATION as CLERK of the WORKS. The Advertiser is fully competent in the practical knowledge required in construction; also well acquainted with detail and other drawings. The necessary references given on application.—Address, A. B. Z. Post-office, Derby.

TO ARCHITECTS, SURVEYORS, &c.

WANTED, by a respectable Youth, who has been three years articled to an Architect, a SITUATION, where his services as a good draughtsman, in plans, elevations, sections, working drawings, &c. may be available. Salary small at first.—A. Y. Z. Post-office, New Brentford.

WANTED, a SITUATION, by a Working Foreman, capable of erecting houses, and superintending the whole of the building, from the foundation to the completion. Direct to J. W. Office of "The Builder," 1, York-street, Covent-garden.

PLASTERING.—WANTED, either the MANAGEMENT of or to TAKE a JOB at a fair price in any part of the country. Reference given as to industry and capability.—Address, S. R. Office of "The Builder," 1, York-street, Covent Garden, London.

AN ARCHITECT who can furnish first-rate testimonials with regard to character and professional abilities, wishes to ENGAGE with any gentleman who may require a person to furnish plans and specifications for new buildings, for the repair of old ones, and for the laying out of land; or to obtain an Agency or Stewardship, being well qualified to undertake the general superintendence of an estate.—Address, Y. Z. care of Mr. H. Fyke, 87, Chancery-lane.

TO ENGINEERS, PATENT AGENTS, &c.

THE Advertiser, who is a good Draughtsman, and perfectly familiar with the construction and details of Machinery, wishes for an ENGAGEMENT.—Address, paid, to W. J. SILVER, 43, Sidney-street, Stepney.

A YOUNG MAN, of respectability, wishes an ENGAGEMENT as a LAND SURVEYOR, LEVELLER, or DRAUGHTSMAN. Salary not a primary consideration. Address, S. L. Post-office, Melksham, Wiltshire.

APPRENTICE.—A respectable, well-educated Youth, aged 17, is in WANT of a SITUATION as IN or OUT DOOR APPRENTICE for three years, to the Carpentry, Building, or any other mechanical trade. He has a decided taste for mechanics, and will soon make a useful hand.—Address, T. H. 36, St. George's-place, Knightsbridge.

AS FOREMAN or CLERK of the WORKS. A married man, aged 33, wishes to obtain a SITUATION in either of the above capacities to a builder; he understands the business in all its branches, having had many years experience in it. Can have a good recommendation from builders he has been with. Address, W. B. 37, St. James's-square, Notting-hill.

TO ARCHITECTS AND CONTRACTORS.

A QUALIFIED CLERK of WORKS is open to an ENGAGEMENT. He is thoroughly practical, and fully competent to undertake works of magnitude. Country preferred.—Address, W. T. 19, Hall-park, Maida-hill, London.

TO PAINTERS, GLAZIERS, AND OTHERS.

A YOUNG MAN of steady and industrious habits wishes to meet with a PERMANENT SITUATION as PAINTER and GLAZIER. Wages moderate.—Address, G. W. R. 3 Upper Thames-street, City.

TO LAMP, CHANDELIER, AND GAS-FITTING MANUFACTURERS.

AN experienced Assistant in the above trades wishes for a RE-ENGAGEMENT.—Address, Z. 16, Palace-road, Lambeth.

TO BUILDERS.

A YOUNG MAN, aged 21, who has been six years in the employ of a London Builder, and has been used to the general routine of an office, wishes for a SITUATION. —Apply, R. R. No 12, Albert-road, Sydenham.

TO PAINTERS, &c.

A RESPECTABLE YOUNG MAN requiring IMPROVEMENT in the above trade, is desirous of articling himself for twelve or eighteen months. Wages will be no advantage.—Please to direct, J. H. B. care of Mr. Jones, 4, Newcastle-place, Edgeware-road, Paddington.

THE Advertiser, a Stonemason, aged 21, a tolerable good workman, wishes for an ENGAGEMENT in a mason's establishment for any term, at moderate wages, where he may make himself perfect in the trade; can do letter-cutting.—Address, F. D. 34, Crawford-street, Bryanstone-square, London.

TO BUILDERS AND OTHERS.

AN Experienced Sign Writer and Grainer, and who is also a first-rate Writer and Embosser on Glass, wishes a permanent SITUATION: can introduce the patronage of a Brewery.—Address, B. A. C. Office of "The Builder," 1, York-street, Covent-garden, London.

THE Master Plumbers and Builders of the Metropolis and Environs are informed, that the HOUSE of CALL for PLUMBERS, lately held at the Crown, Long-acre, is REMOVED to the GREEN MAN, St. Martin's-lane.

PARTNERSHIP and PUPIL.—TO ESTABLISHED ARCHITECTS, LAND AGENTS, and SURVEYORS

WANTED to PURCHASE, a SHARE in any of the above. Also 200 to 300 guineas will be given with a Youth as PUPIL to an Architect, Engineer, Builder, Land Agents, or any good practice. A Builder preferred.—Send full particulars to Mr. BRAND, 46, Drummond-street, Euston-square.

TO DECORATORS, CARVERS AND GILDERS, PLATE GLASS, PAPER HANGERS, &c. &c.

THE Advertiser, who has been many years connected with the wholesale trade (and still carries it on), is desirous to meet with a respectable Young Man, having taste and some little capital, to JOIN HIM in opening a RETAIL BUSINESS, and take the management of it, in one of the most respectable localities within 20 miles of London.—Address, B. G. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS.

TO BE DISPOSED OF, in consequence of the death of the late proprietor, a compact BUILDER'S PREMISES, in the centre of the squares at the West-end of London.—Apply to Mr. WESTON, No. 1, Westbourne-terrace, Queen's-road, Bayswater.

TO CARPENTERS, BUILDERS, UNDERTAKERS, HOUSE AGENTS, &c.

AN excellent COUNTRY BUSINESS in the above line, with an eighteen years' unexpired lease. TO BE DISPOSED OF, with Dwelling-house and Garden, Yard, large roomy Shop and Premises, pleasantly situated one mile from Richmond, at the very low rent of 12*l*. per annum. Agent for one of the old-established Life and Fire Offices.—Apply, by letter, to X. Y. care of Mr James Chitty, Carpenter, Kew-road, Richmond.

BUSINESS FOR SALE.—For Sale, the exclusive right to manufacture and vend the Patent Marble Chimney-pieces, in London and the neighbourhood. Apply, personally, to the Patentees, Messrs. ILES and CO. Peel Works, Birmingham. The Patentees are prepared to supply their Patent Marble for architectural and decorative purposes.

TO BUILDERS.

A PROFITABLE and OLD-ESTABLISHED CARPENTER'S, BUILDER'S, and GENERAL JOBBING and READY-MONEY BUSINESS TO BE DISPOSED OF, in the neighbourhood of Bernard-street, Oxford street, with above thirty very respectable customers' names in the book, that have had work done there last three months, amounting to above 20*l*. Stock, 30*l*. Small premium only required. Good light Workshops Coach-house and Stable at a low rental of 18*l*. per annum.—Apply to D. F. 24, Great Ormond-street, Queen-square, Holborn.

SALES BY AUCTION.

STRATFORD, ESSEX.—To Builders, Carpenters, and Others.

MR. LEREW will SELL by AUCTION, on the PREMISES, Maryland Point, Stratford, on MONDAY, JULY 11th, at TWELVE, a large quantity of useful BUILDING MATERIALS, feasboard poles, boards and cords, ladders, cut stuff, laths, mortar, sand, paving-stone, hearths and jambs, ninety quoin stones, 2,000 slates, pan-tiles, chimney-pots, stone sinks, 7,000 new and old stock bricks, glass, hot-water apparatus, and other effects.—May be viewed the Saturday prior, and catalogues had at the Auction Offices, Cardington-street, Hampstead-road, near the Eastern Counties Station.

Valuable Freehold Building Land, in small Plots, and Freehold Ground-rent of 7*l*. 10*s*. per annum.

MR. LEREW will SELL by AUCTION, at the MART, on THURSDAY, JULY 14, in Twelve Lots, some valuable FREEHOLD ALLOTMENTS and a GROUND-RENT at Holloway and Finchley. Particulars may be had of J. WELLS, Esq. Solicitor, 23, Percy-street, Bedford-square; at the Mart and Auction Offices, Cardington-street, Hampstead-road.

STRATFORD, ESSEX.—Freehold Ground-rents, Building-ground, Nursery, and Accommodation-lands.—TO BE SOLD, pursuant to a Decree of the High Court of Chancery, made in the cause of "Roberts *v.* Henniker," with the approbation of Joseph Humphry, esq. one of the Masters of the said Court, by

MESSRS. COBB, at the AUCTION MART, London, on WEDNESDAY, the 20th day of JULY, 1853, at TWELVE o'clock, in lots, further parts of the ESTATES of the late Sir A. B. Henniker, bart. at Stratford in the parish of West Ham, Essex, consisting of freehold ground-rents, amounting to 93*l*. 14*s*. per annum, together with part of "The Chobhams Estate" adjoining the Eastern Counties Railway Station and Company's Factories, and abutting on the Leyton and Leytonstone roads, consisting of numerous lots for building purposes, and very valuable nursery-grounds and accommodation-land, with a substratum of excellent gravel. Particulars, with plans, may be had at the Master's Offices, Southampton-buildings; at the Swan Inn, Stratford; at the Mart; of Messrs. J. H. and G. LAKE, Solicitors, 19, Lincoln's-inn; of F. J. TUCKER, Esq. Solicitor, Raymond-buildings, Gray's-inn; and of Messrs. COBB, Surveyors and Land Agents, 18, Lincoln's-inn fields, London.

TO IRONMONGERS, BUILDERS, CONTRACTORS, AND OTHERS. By

MESSRS. FULLER and HORSEY, on TUESDAY, AUGUST 2nd, and following day, at ELEVEN each day, on the PREMISES, Vulcan Wharf, Earl-street, Blackfriars, by direction of the assignees of Messrs. Black and Cope, in lots, 150 tons coatings and builders' ironmongery, railing-bars, window-guards, balcony and staircase-panels, furniture and copper-hole doors and frames, gratings, traps, and register-stoves, garden-rollers and borderings, rustic-seats, truck and barrow-wheels, sash-weights, iron pans, forge-backs, air-bricks, plated tiles, brackets, and wrought-nails, 10,000 yards rain-water pipes and guttering, water heads and shoes, street and garden-pumps, wrought-iron plough, five scarifiers, and a general assortment of ironmongery, standard scales, weighing-machines and weights, two sprine-carts, useful furniture, counting-house fittings, and numerous other effects.—To be viewed on Monday previous to the sale, when catalogues may be had on the Premises; of G. J. GRAHAM, Esq. Official Assignee, 26, Coleman-street; and of Messrs. FULLER and HORSEY, Billiter-street, City.

PLAISTOW, ESSEX.—Votes for the Southern Division of the County.

JOHN T. FISHER is instructed to SELL by AUCTION, at the ABBEY ARMS INN, Plaistow, on MONDAY, JULY 18, at ONE for TWO, FORTY-FOUR PLOTS of FREEHOLD BUILDING LAND, the land redeemed, most eligibly situate in the above pleasant and healthy village close to the Barking high-road, less than a mile from the New Victoria Docks, and five minutes from Canning Town, and with omnibuses to and from the City every hour. Wide and substantial roads are in course of construction; the subsoil is gravel, the surface at least 3 feet above the level of the marsh, ensuring excellent drainage; and the enormous demand for houses in the locality, consequent on the formation of the Victoria Docks, and the establishment of large manufactories in the neighbourhood, renders this property a certain and profitable investment.—Plans and particulars may be obtained of Messrs. HILLEARY, Solicitors, 63, Fenchurch-street; at the Place of Sale; and of the Auctioneer, Barking-road, Plaistow.

MORTLAKE, SURREY.

H. DREW is instructed by the Proprietor to SELL by AUCTION, at the GREYHOUND INN, Richmond, Surrey, on WEDNESDAY, JULY 20, 1853, at TWO for THREE o'clock precisely, TEN PLOTS of very valuable FREEHOLD BUILDING LAND, forming part of the Hampton Estate, most desirably situate, in the immediate vicinity of the Mortlake Station, on the Richmond and Windsor Line, having an excellent approach from the Richmond-road, within a few minutes' walk of Richmond Park, and arranged in convenient lots for the erection of Villa Residences; possesses a capital subsoil for building purposes, with an abundant supply of spring water, and offers a very safe investment, as the greater portion of the estate is already covered with villas of handsome elevation.—May be viewed and time obtained for sale, and plans, particulars, and conditions of sale, obtained of Mr. HAMPTON, Worsden Lodge, Shepherds Bush, Middlesex; of Messrs. SUTTON, OMMANEY, and PRUDENCE, 6, Basinghall-street, London; at the King's Arms Inn, Mortlake; the Greyhound Inn, Richmond; and of the Auctioneer, George-street, Richmond.

TO BE PEREMPTORILY SOLD, pursuant to an order of the High Court of Chancery, made in a cause *Taylor* v. *Taylor* (with the approbation of the judge to whose court the cause is attached), by Mr. BRIANT, at GARRAWAY'S COFFEE HOUSE, Cornhill, on FRIDAY, the 29th day of JULY, 1853, at TWELVE o'clock at noon, in three lots. Twenty small Leasehold DWELLING HOUSES (two with shops), being No. 1 to 11 inclusive, Thomas-place, Thomas-street, Kennington; and Nos. 1 to 10 inclusive, James'-place, formerly called James'-street, Kennington, let to weekly tenants, producing a rental of 234*l*. 8*s*. per annum. Also, an improved ground-rent of 20*l*. 0*s*. per annum, secured on four dwelling houses, and being 7, 8, 13, and 14, in Flood-terrace, Kennington. And an improved ground-rent of 47*l*. 14*s*. 6*d*. per annum, secured on eight houses, situate and No. 1 to 7 inclusive, in Kennington-street, and 97, Beresford-street, otherwise Kennington-street, Walworth.—Printed particulars may be had gratis at Messrs. RICHARDSON and SADLER, Solicitors, No. 28, Golden-square; of Mr. MARSHALL TURNER, No. 47, Lincoln's-inn-fields; at Garraway's; and at Mr. BRIANT'S Auction Offices, 18, Kennington row, Kennington-common.

RICHARDSON and SADLER.

28, Golden-square, Plaintiff's Solicitors.

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices:—

Steel Drawing Pens, with ivory handles	4*s*. 0*d*.
do. do. brass-pointed do.	4*s*. 0*d*.
do. do. German silver do.	4*s*. 6*d*.

And every other instrument of the best workmanship equally low.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,

12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

TESTIMONIALS.

"Brighton, Croydon, and Dover Railways,
Locomotive Department, New Cross, Sept. 20, 1852.

"SIR,—In reply to yours respecting the 'Patent Protoxide Paint' I have much pleasure in stating that what has been used in this establishment has been highly approved of, and I consider it the best description of paint yet used, particularly for iron-work, for which purpose I can strongly recommend it.

"I am, Sir, your obedient servant,
"BENJ. CUBITT."

"Regent's Canal Iron Works, Esg'e-wharf-road, Dec. 5, 1845

"SIR,—As it is always my wish to render justice to every one, as far as it is in my power to do, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint;' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will, moreover, use it for all my own work, and wish I had known it somewhat earlier.

"I am, Sir, yours respectfully,
"HENRY GRISSELL,
"Pro H. and M. D. Grissell.

"P.S.—It must be good for Boilers."

"St. Day, near Redruth, Cornwal, 7th April, 1848.

"SIR,—We have used your 'Patent Metallic Protoxide Paint extensively about various parts of machinery with great advantage. We find it prevents oxidation, and tands any ordinary heat without being the least blistered or injured. About two years since we painted with it the interior and exterior of some steam-boilers and steam-tubes, and they still rema'n in the most perfect state, and we consider it of great value for all iron-work.

"HOCKIN and LOAM, Engineers."

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company
No. 16 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, destroying all greenish vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 12s. and 24s. each.

DAMP WALLS.—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 10s.; and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price: only 8s. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 28s. per cwt. or 4d. per stone.

G. BELL and CO. Steam Mills, 2, Wellington street, Goswell-street, London.

PATENT WHITE OXIDE OF ZINC FOR PAINT, &c.

HEALTHFUL HOMES, with avoidance of the inconvenience and expense of removal to families during painting. Disease and premature death amongst painters prevented.

LANGSTON SCOTT and WHITE,
Sole Manufacturers in the United Kingdom,
Now supply this innoxious substitute for White Lead, either in Powder or Paint, of genuine purity (Wholesale, under Brand, from the Works, Grand Surrey Dock, Rotherhithe).

In 14lb. Kegs, and upwards, from the Depôts of their respective Agents:—

LIVERPOOL ..... { Mr. T. BROUGH, South John street.
Mr. SUMNER and CO. Lord-street.
IPSWICH.—RIDLEY and GRIMWADE.
IRELAND.—P. REILLY and SONS, 15, Cope-street, Dublin.

ZINC PAINT is much below the price of White Lead, possesses equal body, covers 20 per cent. more of surface, and being perfectly free from all Acids, can be tinted with the most delicate colours, which will remain permanent for years.

Price Current and Prospectus, containing Testimonials from the most eminent Artists supporting its superiority for Interior, Exterior, and Marine purposes, forwarded in answer to Letters addressed to the above Agents, or the Patentees, 10, Lombard-street, London.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compound that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of purification, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realised by the purchasers of such oxides becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark.—In Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry by Messrs. T. B. MORLEY and CO.; and to the Company's Grinding Agents in London, Messrs. CHARLES ORMAN and CO., whose agents, 82, King William-street, City. Mr. CHARLES JACK, Wholesale and retail merchant, 8, Tottenham-court-road, and 85, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO. of 49, Norfolk street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 28, and 56 lbs. and upwards, to be had of the Company's Agents in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Portsea, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, [illegible] and the best for the use of the artist, is now, by Hubbuck's patent, reduced to a less price than White Lead.

The essential characteristics of HUBBUCK'S ZINC PAINT are—Economy, Health, Beauty, and Durability.

Builders and Contractors find Hubbuck's Paint the only one adapted to all purposes, possessing the two desiderata of economy and health, which [illegible] as a paint, it ranks alone. Contractors effect a saving of 25 per cent. by using HUBBUCK'S ZINC PAINT.

HUBBUCK and SON feel it necessary a caution should be circulated against imitations of their Paint. These manufactures, containing frequently deleterious ingredients, are baneful to health and worthless in use, whilst the inexperience of these imitators in the production of pigments is evidenced, not alone by the coarse grassy appearance, but also by the deficiency of that body in their produce, which is known to the painter to be all-essential. That an imposition be not practised, therefore, notice that the cask is marked with the name of the original manufacturer, thus—

HUBBUCK——LONDON——PATENT.

If not so marked, the reason may be inferred.

Every information in the circular to be had of THOMAS HUBBUCK and SON, Paint and Varnish Manufacturers, Upper East Smithfield (opposite the London Docks), London.

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE,
Manufacturers of
PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if possessed of the merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

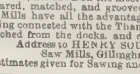
LONDON	Messrs. Blundell, Spence, and Co. 9, Upper Thames-street. Mr. Richd. Cooke, 7, Size-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Douglas
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock-and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Silmshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr. P. Linskey, 91, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, as his Manufactory (the first of its kind ever established), a very large Assortment of WELL-SEASONED OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at P. SIMMS'S late W. Cleave's Flooring Manufactory, Wilton-road, Pimlico Basin.



TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. I. FULLER'S Depôt, 27, Wharf-road, City-road. Spanish and Honduras Mahogany, Walnut, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.



SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle, Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge. Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the floor-boards generally sold being sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present month:—

¾inch yellow or white, 13d. to 14s. 6d. per square.
1-inch ..... 18s. 6d. to 19s.

Battens, 9s.; Deals, 3s. 6d.; and plank, from 4s. 6d. per 12 feet; timber, from 7½d. per load; and every kind of English and foreign wood direct from the docks.—Apply to Mr. MAY, 30, Leadenhall-street.

SEASONED FLOORING PLANED to a parallel width and thickness by improved patent machinery, at very reduced prices, as under:—

Per square.		Per square.
¾inch yellow	14s. 6d.	¾inch white ..... 14s. 6d.
1 " "	16 0	1 " " 15 0
1¼ " "	18 6	1¼ " " 18 0

2½ per cent. discount off amounts exceeding twenty pounds.
ARCHBUTT and ATKINSON, St. Pancras saw-mills, Cambridge-street, Old St. Pancras-road.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber and deals, &c. out and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

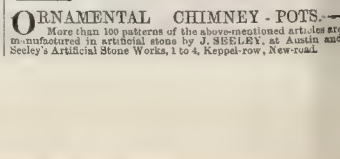
The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

TIMBER SAWING.—ARCHBUTT and ATKINSON invite the attention of consumers of timber to their new and powerful machinery, for its immediate conversion, whereby large logs may, in a few minutes, be sawn into any size scantling, thereby saving the annoyance and delay inseparable from the employment of jobbing sawyers. The mills being by the waterside, and contiguous to the principal railways, they are enabled to supply goods on very advantageous terms. Purchasers from the country may mark their timber, and have it sawn and delivered without loss of time.—SAINT PANCRAS SAW-MILLS, Old St. Pancras road adjoining the Goods Terminus of the Great Northern Railway.

TIMBER PRESERVING COMPANY.—This Company are prepared to enter into CONTRACTS for creosoting, or otherwise preserving sleepers and other timber in any part of the country. Their present stock affords great facilities, and they will erect other stations when required for a sufficient amount of work.—Apply to E. LODER, Esq.; or J. M. WARREN, Esq. 89, King William-street, London-bridge.

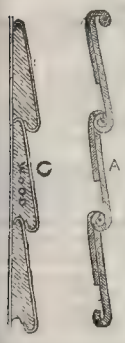
REPERTOIRE of MEDIÆVAL ART, 52, Wigmore-street, Cavendish-square.—Mr. BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz. Metal work, chalice and patens, offertory, basons, candlesticks, candlabras, branches, gas fittings, crosses, lamps, monumental brasses, brass locks, handles, door-keeps, letters, vestets, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver flams, painted candles, picture frames, tryptichs, banners, &c. &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kinds of embroidery supplied and arranged.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Trays, &c. &c. manufactured by J. M. BLASHFIELD, Mill Wall, Isle of Dogs (near the West India Docks), and sold at No. 1, Prescott-street, Edgware-road, Paddington.



ORNAMENTAL CHIMNEY-POTS.—More than 100 patterns of the above-mentioned articles are manufactured in artificial stone by J. SEELEY, at Austin and Seeley's Artificial Stone Works, 1 to 4, Keppel-row, New-road.

PATENT DATED 9TH DAY OF OCTOBER, 1852.

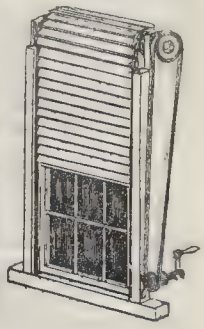


CLARK & CO.'s

NEW PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS,

AND

IMPROVED PATENT CURVED LATH REVOLVING SHUTTERS.



The annexed woodcuts, A and C represent three of the laths of the above Patent Shutters in section.

A is an improved form or curve for the Laths of Iron Shutters, whereby they are much more securely connected together, and can be ROLLED EITHER WAY, greatly facilitating their application.

C represents the section of three laths of CLARK'S PATENT COMBINED IRON AND WOOD REVOLVING SHUTTERS, the wood being covered or faced with thin iron, securely fixed by being drawn over it, rendering it impossible for the laths to split, and combining the lightness of wood shutters with the durability and appearance of iron.

CLARK and CO. have also patented the application of Revolving Shutters, fixed complete in sash frames, for private dwelling-houses, thereby saving a large item in their cost (the fixing), and are prepared to supply sash-frames, with sashes hung and Revolving Shutters fixed complete, to architects and builders, at remarkably low prices; the whole can be wedged into its place in less than one hour, as shown by annexed Woodcut. They answer the purpose of Sun-blinds by day, as well as Shutters by night.

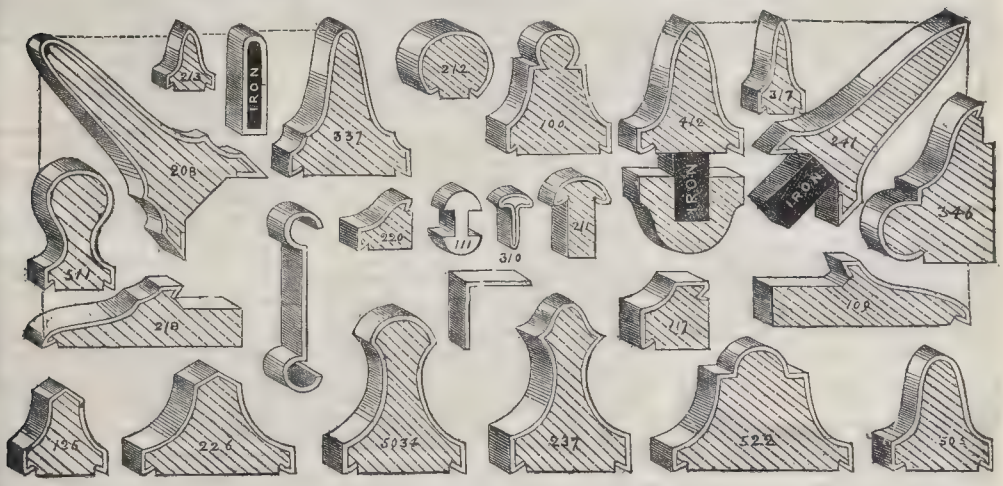
TESTIMONIAL.

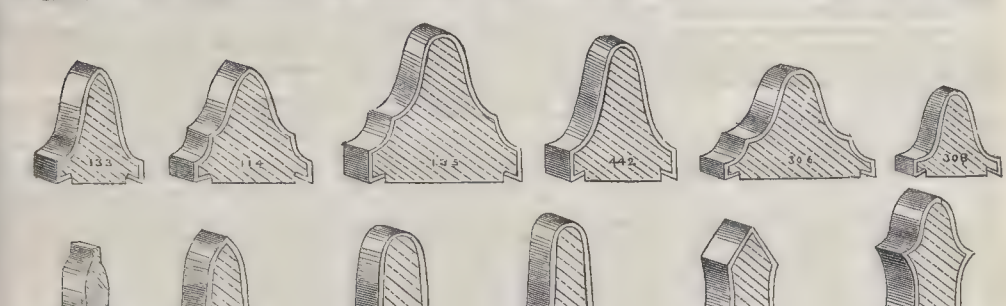
"Fleet-street, June 28th, 1853.

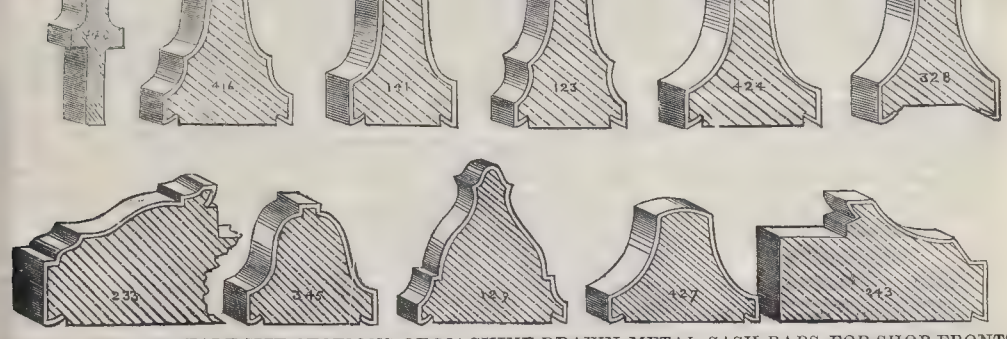
"GENTLEMEN, At your request, I have much pleasure in giving my most unqualified testimony to the efficacy of the large revolving shutter fixed by you at my premises, 78, 79, and 80, Fleet-street. The great advantage of your revolving shutters are made manifest by the fact, that it enables one of my men to open or close one of the largest shop fronts in London (18 feet by 24 feet) in thirty seconds with the greatest ease, that formerly occupied the time of three men upwards of half an hour, and entirely obviates the great risk of breaking the glass, and otherwise damaging the premises, which always will attend the use of the common lifting shutters. It also presents a greatly improved appearance, and has attracted universal attention.—Your obedient servant,

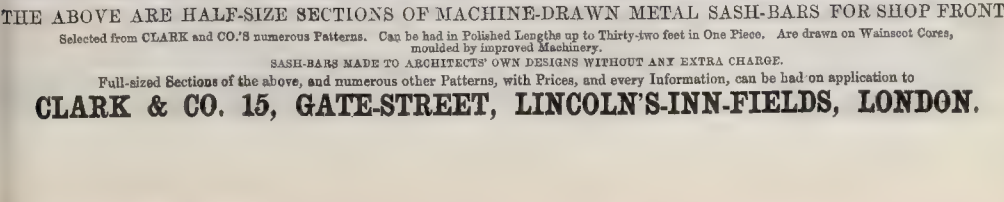
"CHARLES M'LEAN.

"Messrs. CLARK and Co."









THE ABOVE ARE HALF-SIZE SECTIONS OF MACHINE-DRAWN METAL SASH-BARS FOR SHOP FRONTS

Selected from CLARK and CO.'S numerous Patterns. Can be had in Polished Lengths up to Thirty-two feet in One Piece. Are drawn on Wainscot Cores, moulded by improved Machinery.

SASH-BARS MADE TO ARCHITECTS' OWN DESIGNS WITHOUT ANY EXTRA CHARGE.

Full-sized Sections of the above, and numerous other Patterns, with Prices, and every Information, can be had on application to

CLARK & CO. 15, GATE-STREET, LINCOLN'S-INN-FIELDS, LONDON.

CHARLES WM. WATERLOW,
Manufacturer of Sashes and Frames, and Joinerto the Trade.


121, Bunhill-row, Finsbury-square.
Well-seasoned materials, superior workmanship, lowest prices.
Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.
Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.
N.B. This establishment is worth the notice of all engaged in building.

REVOLVING SAFETY WOOD and IRON SHUTTERS SNOXELL, Patentee, 96 Regent street, and at his Steam-works, 116, Old street. These shutters have fully borne out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to noblemen whose mansions are fitted herewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

PATENT IMPROVED REVOLVING SHUTTERS.—TO BE DISPOSED OF, the PATENT RIGHT of the above. No screws, hinges, or rivets used in the construction. The roller can be fixed in front or back of sash, as required. Not a tenth part of the expense of any other revolving shutters in use, and equally secure.—Apply to the Patentee, THOS. BAKER, Gas Engineer and Fitter, Manor House, King's-road, Chelsea.

JAMES CATLING, Sash Maker, Builder, and Joiner to the Trade, 7, Satchwell's-rents, Church street, Bethnal green. Estimates given for every description of work. A full list of prices may be had on application.

HUGHES and ROBERTS, 74, Goswell-road, SASH and DOOR MAKERS to the Trade.—14 ovolo sashes, 4d. per foot; ditto with frames, 9d.; ditto, 2 in. 5d.; ditto, with frames, 11d. 4 four panel square door, 8d. per foot; ditto, moulded one side, 7d.; ditto, both sides, 10d. P.S. Estimates given in for shop fronts, &c.

LEONARD SUGDEN, Manufacturer of Doors, Sashes, and Frames, and Joiner to the Trade, 59, Grange-road, Bermondsey, respectfully invites builders, and the trade in general, to an inspection of his STOCK of GOODS, from which they can always be supplied with every kind of joiners' work, which for superiority of workmanship, material, and low prices, will be sure to give the greatest satisfaction.
P.S. A full list of prices may be had on application.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen-street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner. Yr etian blinds, per square foot, 9d.; best holland blinds, on rollers, 6d.; best ditto, on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 2s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.



JENNINGS'S PATENT SHOP SHUTTER-SHOE and FASTENER costs HALF the PRICE of the unsightly SHUTTER BAR.
May be had from any Ironmonger, or from the Patentee, GEORGE JENNINGS, 29, Great Charlotte-street, Blackfriars-road.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy. Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.:—Good tooled York-shire Paving, at 33s. per 100 feet retail, at 42d. per foot; thicker ditto, at 40s. per 100 feet; very superior, 44s. ditto; thick rubber Paving, in great variety of sizes, at 55s ditto; Harehill and Selcaed Slab, of the finest quality; thick Selcaed Paving (viz. from 2½ to 4 inches); Sinks, large or small sizes, at 1s. 8d. per foot; Steps, Sills, 13 inch, and 18 inch Coping, all at very low prices; Duchess, Counters, and other Slates; Clay and Stone Pipes, Chimney-pots, &c.—A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

TO BUILDERS, MASONS, AND OTHERS.
AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.
The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Anna, Statuary, &c.
Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.
Portland, Bare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.
And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.
All goods carefully packed and forwarded to any part of England.
JOHN HOLMES, Agent, Commercial-road, Pimlico.

Medieval Works, Memorials, Fonts, Screens, etc.
AT A VERY ECONOMICAL RATE.
SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.
MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.
A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.
A liberal discount to the Trade.
MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.
Circulars sent on application.
N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

ITALIAN and GALWAY MARBLE QUARRIES. Depôt, Whitehall Wharf, Parliament-street, Westminster. Now landing, a Cargo of Black Marble at the above depôt, of superior quality and dimensions, viz.—11 ft. by 5 ft. 8 in.; Jamb by 2 ft. 10 ft. by 2 ft. &c. &c.; also 2,000 feet Black Slabs and Fossil Marble, at reduced rates. Also, from Italy, ex Persian and Ormito, Statuary, Veined, Sicilian, Dove, Black and Green, Bardella, Brocatella, Lavante and Basso, 20,000 feet of the above Marbles in Slabs, at reduced rates. Just landed, ex Progress, 300 cubic feet of St. Ann's. Terms, six months.—Apply to Mr. FRANKLIN, Proprietor of the above Quarries.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulins to let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others that he continues to supply the Box-hill Ground Stone, Corshamdown, Combe-down, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness. N.B. Stone and other goods landed and carted.

BATH STONE OF BEST QUALITY.
RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.
(DEPOTS.)
Great Western Railway Station.... PADDINGTON.
Great Western Railway Station.... BRISTOL.
Hope-street, Mount-pleasant ..... LIVERPOOL.
Castle-fields ..... MANCHESTER.
List of prices at the quarries and depôts, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

TO CONTRACTORS, BUILDERS, AND OTHERS.
CHEESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Pinners-court, Old Broad-street, London, Agent; or to Mr. J. J. TRATHAN, Manager of the Works, Liskeard, Cornwall.
Notice of the column exhibited from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue."
By Professor ANSTED.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension the magnitude of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

TO BUILDERS, CONTRACTORS, AND THE TRADE IN GENERAL.
THE TREVALGA SLATE COMPANY beg to inform their numerous Friends and the Public at large that they have REMOVED from WATERLOO DOCK WHARF to their new premises, GALVANIC WHARF, COMMERCIAL-ROAD, LAMBETH. Being extensive quarry holders as well as merchants in town, the Company are in a position to offer Roofing Slates, Slate Slabs, Cisterns, and every description of slate slab-work at much lower prices than any other in the trade. One trial will be sufficient to prove their slates to be the strongest and most durable in England. Their agent, Mr. T. B HANNAFORD, does slating, and fixes every description of slate slab-work, both in town and country.

THE PIMLICO SLATE-WORKS, Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUSS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—30 and 31, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 8s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

By her Majesty's / Royal Letters Patent.
FREDERICK RANSOME'S PATENT.
THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being effected in the slightest degree. In appearance it accurately resembles natural stone, and has no sand or cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now in use in building.
For Architectural purposes it is made of any quality of texture, and is equally adapted for every description of work, plain or ornamental, especially where every repetition of design is required, as in open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; for Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.
Another description is made porous, especially for filtering purposes,—either for domestic use, or on a large scale of any required size and degree of porosity, for purifying large quantities of Water, and which particularly claim the attention of Water Companies.
Specimens may be seen and further particulars obtained at the offices.
8, John-street, Adelphi. EDWARD MENDHAM, Sec.

NO ERROR WILL VITIATE A POLICY.
PELICAN LIFE INSURANCE COMPANY.—Established in 1797, 70, Lombard-street, City, and 57, Charing-cross, Westminster.
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At a divisional of Profits declared up to 3rd July, 1847, the Bonus added to Policies effected in the seven preceding years on the "Return System" averaged Thirty-three per Cent. on the premiums paid. Four-fifths or Eighty per Cent. of the Profits are divided amongst the Policy-holders.
LOANS in connection with Life Assurance on approved security.
Annual Premium required for the Assurance of £100 for the whole term of life:—

Age.	Without Profits.	With Profits.	Age.	Without Profits.	With Profits.
	£. s. d.	£. s. d.		£. s. d.	£. s. d.
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20	1 13 10	1 19 3	50	4 0 9	4 10 7
30	1 4 0	2 10 4	60	6 1 0	6 7 4

ROBERT TUCKER, Secretary.

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Capital, Two Millions.
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80 PER CENT. BONUSES, applicable as the Assured may prefer, triennially after the first five years.

Age.	20	30	40	50	60
	£ s. d	£ s. d.	£ s. d.	£ s. d	£ s. d.
Bonus	1 17 6	2 6 0	3 0 6	4 6 9	6 7 6
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FIRE DEPARTMENT.
80 PER CENT. BONUSES annually after the first three years.
The attention of Merchants, Brokers, Manchester, and other Warehousemen is particularly directed to the advantages offered by this Company, the rates being as low as those of the principal London Offices, with a return of fifty per cent. of the profits to the assured.
Insurances hitherto effected with other offices incur no expense in being transferred to this Company.
The British Assurance Company of London is now merged in the Lancashire Insurance Company, and the renewal receipts will be obtained from the agents as usual.
Prospectuses, mercantile rates, forms of proposal, and all other information, will be afforded at the Offices and Agencies of the Company.
JAMES B. NORTHCOTT, Secretary to the London Board.

FIRE INSURANCE AGENCY.—TO BUILDERS, SURVEYORS, CLERKS OF WORKS, &c. The Directors of the Athenæum Fire Office have matured an original and important plan of Agency, which applies particularly to the classes referred to above.—Applications to be made to the Manager, HENRY SALTER, Esq. 30, Sackville-street, London.

LAST WEEK BUT ONE.
ROYAL ACADEMY of ARTS, Trafalgar-square.—The EXHIBITION of the ROYAL ACADEMY is now OPEN. Admission (from Eight o'clock till Seven), One shilling. Catalogue, One Shilling.
JOHN PRESCOTT KNIGHT, R.A. Sec.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS.—Their NINETEENTH ANNUAL EXHIBITION is NOW OPEN, at the Gallery, 53, Pall-mall. Admission 1s.
JAMES FAHEY, Secretary.

MR. ALBERT SMITH'S MONT BLANC, EVERY EVENING at EIGHT o'clock, except Saturday. Stalls, 3s. which can be secured at the Box-office every day from ELEVEN to FOUR. Area, 2s. Gallery, 1s. A Morning Performance every TUESDAY and SATURDAY, at THREE o'clock. Egyptian Hall, Piccadilly.

ROYAL POLYTECHNIC INSTITUTION, Patron.—H.R.H. Prince ALBERT.
New and Interesting Arrangements.—Tuesdays and Fridays at Four o'clock, and every Evening, except Saturday, at Nine, the First Part of an Historical Lecture on "The Thames," from its Source to its Estuary, by George Buckland, esq. assisted by Miss Blanche Younge, with appropriate Songs and Dissolving Scenery, in addition to the varied Scientific Lectures and Exhibitions.
Open Mornings and Evenings. Admission, 1s.; Schools and Children under Ten years of age, half-price.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half-past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT every evening from Seven till Ten, Music from Two till Five, and during the evening. A variety of favourite Songs by MISS A. POPE.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE.—This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755, is exhibited for a short time in all its original splendour, and by the aid of new machinery, with increased startling effects. Daily at Three; Evening at Eight o'clock. Admission One Shilling. Children and Schools half price to either Exhibition.

GALLERY of GERMAN PAINTINGS.—The FIRST ANNUAL EXHIBITION of the WORKS of MODERN GERMAN ARTISTS, is NOW OPEN daily from Ten till Dusk. Admission, 1s. Lessing, Sohn, Achenbach, Hildebrandt, Leu, Schirmer, Weber, Tidemand, Gude, Bunner, Mucke, Bodom, &c. &c. have contributed to the above collection. Several new works have this week been added.—168, New Bond street.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary Awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore-street, City. Manufacturer, by appointment, to her Majesty's Honourable Board of Ordnance.

The Builder.

SATURDAY, JULY 16, 1853.

THE indoor session being over, the *London Archæological Societies* have got out into the air, and are making those visits and examinations one main object of which is to render the architectural antiquities of the country more known and prized, and so to conduce to their preservation. Last week the British Archæological Association continued their examination of the antiquities of *London;* this week the Archæological Institute of Great Britain and Ireland are holding their annual meeting at *Chichester;* and on the 25th of the present month, the first-named body will assemble in *Rochester*, where papers will be read on the Castle, the Cathedral, the old Houses, the Rochester Record, &c. and excursions made to Cobham Hall and Church, Kit's City House, Boxley Abbey, and other interesting places.

The London visit comprised Crosby Hall, Bishopsgate-street, where a numerous audience, including Mr. Ralph Bernal, the president; Alderman Salomans, Mr. Heywood, M.P. Mr. Pettigrew, Sir Fortunatus Dwarris, Mr. N. Gould, Mr. Lott, Mr. Marshall, R.A. Mr. G. Cruikshank, and others, assembled to hear the Rev. Thomas Hugo read a succinct and pleasant account of the building; the crypt adjoining; St. Helen's, Bishopsgate; St. Andrew's Undershaft; St. Botolph's, Bishopsgate; and the crypt under the upholsterer's shop, at the easternmost corner of Leadenhall-street, which we have before now described. St. Helen's is full of interest, and contains a large number of sepulchral memorials,—a good perpendicular altar-tomb, with effigies, in memory of the builder of the Hall, Sir John Crosby, and his wife, 1475; a large 16th century canopied monument to Sir William Pickering, said to have been the finest gentleman of the age in which he lived; an altar-tomb over the remains of Sir Thomas Gresham, who built the first 'Change; and the curious memorial to Sir Julius Cæsar, a privy counsellor in the reign of King James I. with an inscription cut as if on a deed, engaging on the part of the deceased to pay the debt of nature willingly whenever it shall please God to call for it. This tomb was the work of Nicholas Stone, and cost 110*l.*

The distinguishing title of St. Andrew's—"Undershaft"—suggests a connection with May-day, and does not deceive. Before the south door of this church, on May morning in those times,

"When every village did a May-pole raise,"

a shaft higher than the church steeple was regularly erected, until 1517, when a violent onslaught was made by the London 'prentices on foreigners who resided in the city, and practised trades to the injury, as it was thought, of the citizens. Their gathering cry, "'Prentices, —bats and clubs," brought hundreds of persons into the street; prisons were broken open, houses destroyed; nor was the insurrection quelled without the aid of the Tower guns. 300 persons were taken prisoners, one was hung, and "Evil May-day," as it was called, was long thought of with sorrow. This led to the abandonment of sports which caused large numbers of persons to congregate, and the shaft was hung on a range of hooks under the "pent-houses" of a neighbouring row of shops.

The church is of the Perpendicular period, one of the few which escaped the Great Fire, and contains an interesting monument to the memory of John Stow, the chronicler. The figure is of terra-cotta. There is also a large monument to Sir Hugh Hammersley, wherein, notwithstanding its date—1637—some of the figures display much grace.

The Archæological Institute are able to join to their own proceedings at Chichester the annual meeting of the Sussex Archæological Society, which will doubtless increase the pleasures of the week, as it has already increased the numbers present. The cathedral is the chief feature of the town. The see was removed from Selsea to Chichester, by Stigand, first Norman bishop, A.D. 1075. The cathedral was still in progress under Ralph, Bishop of Chichester, 1091-1099. In 1114, it was consumed by fire; restored and completed under Seffrid I. in 1145; again injured by fire, to a considerable extent, in 1186; restored and rededicated by Seffrid II. in 1199. The spire has been attributed to the time of Bishop Ralph Neville (1222-24), but is probably of the latter part of that century. The Lady Chapel is supposed to have been built by Bishop Gilbert (1282-1304), the south transept, by Bishop Langton (1304-1339). The Bell-tower (fifteenth century) on the north side, deserves notice as the only example now existing in England of a detached *campanile* adjoining to a cathedral. It is built of stone apparently from the Isle of Wight, from the quarries near Ventnor.

We gave some notes of a visit there in our volume for 1851,* and afterwards an engraving of the Iron Gates to the choir.

That portion of the cathedral of which we now give an illustration† is perhaps the most picturesque; the prominent feature is the tower, known as the "Old Belfry," to distinguish it from the comparatively modern erection to the north of the main building, called the Bell-tower. The tower shown in our engraving is the work of the thirteenth century, of which period it is a very beautiful specimen. The upper arches are closed up with modern masonry, but this our artist has taken leave to dispense with in his drawing.

Great efforts have been made by the cathedral authorities to put the building in a fit state for the reception of the Archæological Institute. With the exception of one house (the owner of which continues obstinate as to price), the north side of the cathedral has been cleared of the old buildings that until very lately eclipsed it; some restorations are going on in the interior, and others are in contemplation, among which we hope to number the Lady Chapel. It is now used as a library, the floor is raised several feet, the fine east window entirely closed, and those on either side are partially so: now that glass is cheaper than stone it may be possible to restore the whole of these windows to their original use,—the admission of light. While speaking of windows, we may perhaps be allowed to take exception to the painted glass recently placed in the nave; each window is the work of a different artist, and though some are individually good, the want of unity is but too apparent.

Of the curious paintings in the cathedral, its stained-glass, restored monuments, and modern tombs by Flaxman, we spoke on the previous occasion.

The programme which has been issued gives assurance of much entertainment. Not only the cathedral, with its insulated *campanile*, the unique market-cross, old churches and houses, and various objects of antiquity in the museum, but burrows and entrenchments on the South Downs, and various Norman and other churches in the neighbourhood, are promised as objects of attractive curiosity and interest to the archæologists.

Amongst the company assembled, our correspondent tells of Lord Talbot de Malahide, the President of the Institute, the Earl of Chichester, the Hon. Robt. Curzon, jun. the Hon. R. Neville, the Bishops of Chichester and Oxford, Mr. Britton, and Mr. Henry Hallam.

Mr. Sharpe has given an interesting lecture on ancient Christian architecture, illustrated by the series of drawings which display his seven stages; and Professor Willis has discoursed on the architectural features and history of the cathedral, and afterwards traversed the edifice, pointing out and commenting on many of the peculiarities of this specimen of ancient skill to a large concourse of listeners: of this, however, we will speak hereafter.

* Page 587, Vol. IX. † See page 457.

THE ANCIENT BASILICA AND THE EARLY CHRISTIAN TEMPLE.*

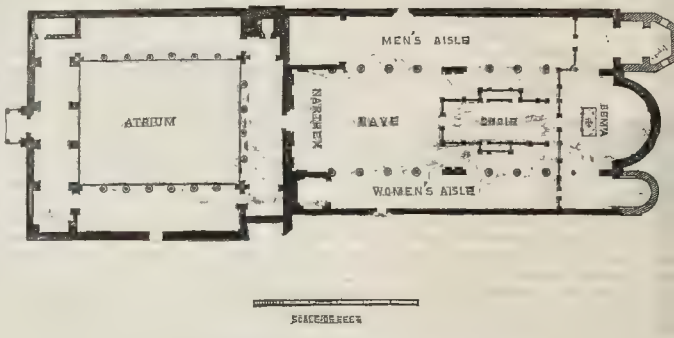
IN the course of the many papers I have had the honour to read at the ordinary meetings of the Institute, I remember to have furnished one upon the forms and uses of ancient basilicas; and I recollect reading a second upon the parts and uses of early Christian churches; but not being in possession of either of the MSS. I do not remember in what manner the subjects were treated, and it is very possible I may now go over again some of the same ground. But I purpose, in this supplemental *conversazione*, to connect the basilica and the Christian temple, taking one specimen of each as they are still presented to us at Rome. All of you who have visited that celebrated city will recollect the imposing ruins which stand upon the Via Sacra, between the Flavian Amphitheatre and the Forum, and which, for a long time among antiquaries, bore the name of Temple of Peace. They were, indeed, supposed to be the remains of that famous edifice built by Vespasian after the final conquest and pacification of Judea. We know, from Josephus, that such a temple was erected on that occasion, and Suetonius defines the site: "Fecit et nova opera Templum Pacis Foro proximum." It was enriched with paintings and statues, enumerated by Pliny, Pausanias, and other authors. A great fire in the reign of Commodus brought the magnificent temple down to the ground; and, if it was built up again, it must have been a second time destroyed, for Procopius saw it lying in ruins when he visited Rome with Belisarius, in the sixth century. We may, therefore, consider ourselves as fairly rid of the Temple of Peace, and the name of "Basilica of Constantine" has now taken possession of these ruins. They give us the form and character of an ancient basilica; but in order to be more sure of the plan and uses of a basilica of ancient time, let us go a little further back into their history. No edifice of this sort existed at Rome until the year of the city 570, that is, 183 years before the Christian era; then it was that Marcus Porcius Cato built, in the Roman Forum near the Curia Hostilia, the basilica which was named after him "Porcia." It had the misfortune to be burnt down to the ground 130 years after its erection, in the riots which took place at the funeral of Publius Clodius. Livy, alluding to a period which preceded by a few years the erection of the Basilica Porcia, says there were no basilicas *then* at Rome: "Neque enim tum basilicæ erant;" but, if the first basilica was erected 183 years before the Christian era, we may safely affirm that the one now under our consideration was the last; and it was constructed by Maxentius (according to Aurelius Victor), and dedicated to the "merits of Constantine." If we take this date to be the year of grace 320, then we have the period of ancient Roman basilicas ranging between 183 *before* and 320 *after* the Christian era,—a space of 500 years: I mean that all the ancient basilicas erected at Rome and in Italy had their existence within this space of time. The number of these edifices, from first to last, in Rome, was twenty-one. I will only mention the most celebrated, as they were probably also the most magnificent. There were two basilicas erected by Lucius Emilius Paulus, the one in the centre of the forum, the other on the east side, on the site now occupied by the church of S. Adriano. Cicero speaks of this basilica in

* Read by the Rev. Richard Burgess, B.D. hon. member, at the Royal Institute of British Architects, June 27th, the closing meeting of the session.

raptures: he says, "Nihil gratius illo monumento nihil gloriosius!" It extended as far as the Hall of Liberty, and cost the sum of six hundred millions sesterii out of the public treasury, besides 1,500 talents which Cæsar sent from Gaul as his contribution. Part of the ground-plan of this famous basilica is represented in a fragment of the marble plan of Rome, called the Pianta Capitolina; and there is also the Atrium Libertatis, mentioned by Cicero. It appears to have had five naves. The columns were eighteen on the flanks, and were all of Phrygian marble, as Pliny describes them. It was still celebrated for its columns in the time of Domitian, and they were preserved until towards the close of the fourth century. The basilica of St. Paul, on the Via Ostiensis, began to be built about that time, under Valentian II. and Theodosius; and this has given rise to the opinion, most probable, that the columns of Phrygian marble which adorned that Christian temple were actually those once belonging to the Basilica Pauli. They were all lost in the fire of 1824, after an existence of nineteen centuries. On the west side of the Forum was another celebrated edifice of this kind—the basilica Julia. This has been brought into notice of late years on account of the discovery made of its real site, and the part it has borne in defining the limits of the Forum. You will remember, just a year ago, how we pressed that Basilica into our service for putting an end to all controversy about the Forum: and it will be more consonant with our pacific intentions of this evening if we say no more upon that subject. Another famous edifice of this description was the Basilica Ulpia, in the Forum of Trajan, so called from one of the names of that emperor. No one who has been to Rome, or who has seen a plan of ancient Rome, need be told of the greatness and magnificence which distinguished that imperial work: many of the broken shafts of the columns of Egyptian granite have been disinterred, and are now readjusted upon their ancient basements. It is ascertained from actual measurement, and deduced from proportions, that the number of columns in this basilica amounted to ninety-six, that the building was divided into five naves, and the pavement was of the finest marble; but now, without going to Pompeii, where we have the most perfect exemplification of an ancient basilica, I recur to the only ruins which exist at Rome to enable us to compare the ancient Pagan hall with the early Christian temple. Our specimen of each will be the so-called Basilica of Constantine, and the Church of S. Clemente, which stands in its pristine form at no great distance from the Amphitheatre.

The basilica is a quadrilungal edifice, standing from east to west. It is 296 French feet in length, and 220 in width, and divided into three naves. At the extremity of the middle nave was a tribune, or apsis, of which one sees the remains in a granary built upon its ruins. The façade of the edifice was turned towards the Amphitheatre; the apsis, or lower end, towards the Roman Forum. The three big arches now existing are remains of the north nave. The vaults of the two lateral naves were supported by masses of wall and pilasters: the middle one, being about one-third higher than the other, was sustained by eight columns of white marble, fluted. One of these columns existed in the time of Poggio Fiorentino, and remained in its place until 1619, when Pope Paul V. caused it to be removed. It was placed, under the direction of Carlo Maderno, in front of the Santa Maria Maggiore, where it now stands, towering on an elevated basement, and with a capital of great dimensions The façade turned towards the Colosseum presented a double story externally, like most of the modern churches: but internally it showed but one. A shabby portico, or corridor, about one-third of the height of the edifice, served for an entrance Originally there was but one door, which was flanked by six windows, corresponding, two and two, to the naves. Of these windows, two which originally flanked the door were turned into entrances: admission was then given into the hall from the portico by five doors.

There is often a niggardliness about the porticoes of our basilicas which I am far from



THE BASILICA OF S. CLEMENTE, ROME.

attributing to the architect; for it would probably be found that *he* was obliged to cut his original plan into a shred, to save a few feet of ground, or perhaps to save a few materials to the value of a few pounds sterling.

I need not go further with this description to show you that we have before us the plan of an ancient Christian church; that is to say, of a secular basilica, with little alteration, except that instead of having three naves divided by columns, it had three naves divided by pilasters, with columns before. There is, however, one peculiarity yet to be noticed respecting this basilica. It would appear that the architect had altered his plan before he finished his work: this, both in architects and painters, is called by the Italians *un pentimento;* and those *pentimentos*, although sometimes admired by men of taste, generally cause much uneasiness to the men who pay. The middle arch of the northern nave, or transept, was extended, and a large niche, or apsis, similar to the one of the principal nave, was added. Traces of this are still to be seen. This necessitated another entrance, for the sake of uniformity, and at the other (that is, at the south) end of the transept, a second entrance was made, and it evidently became more noble than the other: it had the advantage of leading to the Via Sacra, which passed by it. It was ascended by a flight of eleven steps, and was adorned with four columns of red porphyry, of which fragments have been found. This is as far as I need go in any description, for I cannot hope to entertain this Institute with bricks and cement, and keep it awake with doors and windows.

In the year 1828 a valuable medal of Maxentius was found in a piece of the vault, which contributed not a slight proof that the basilica is correctly dated of the age of Constantine. The fragments of the entablature which are now lying near the spot exhibit a decline of sculpture, which marks the low age; and the brick-work, compared with other edifices of an earlier date, will confirm the hypothesis. Upon a mere inspection of the plan of this edifice I have imperfectly described, you will see that it wants altogether the character of a temple of the gods: we have a narrow corridor, or vestibulum, but no splendid portico or pronaos: we have no *cella*, in which the divinity was enshrined amidst his subordinates: we have no altars for sacrifices, but simply a vast hall, and tribunes at the end and side. In the basilica we speak of the vestibulum, or atrium; the navis, or body of the interior; the tribune, or hemicyclium, or chalcidica: and the prætor's seat, where the priest should have been if it were a temple. It will easily be seen that such a building was in all respects more convenient for early Christian worship than a temple, and hence the form was at once adopted as well as the name; and the basilica of Peter and Paul, and Mary and John were spoken of, just as the basilica Pauli and Julia, and Emilia and Ulpia had been spoken of before. The ancient basilica appears to have combined two uses: it was a court of justice, and it was a sort of exchange where merchants most did congregate. While the judges were sitting in their vast circular recesses, capable of receiving as large a crowd as ever cared to hear lawyers dispute, the men of business were walking up and down the spacious nave, or leaning against a pilaster, inquiring the price of stocks: the prætor on his tribunal heeded not the buzz of eager merchants for Tyrian wares, or contracting for Sicilian corn, and the money changers heeded not the vehemence of a special pleader. Vitruvius cites, as a good example, the hemicyclium of a basilica in the forum, which was 46 feet in width by 15 in breadth; so that he observes, the merchants in the basilica might not interfere with those who had business with the magistrates. On each side of the tribune were *cornua*, or wings, where persons of distinction sat; and perhaps these might give the idea of *sedilia* in a chancel, on each side of the altar for dignified ecclesiastics, who sat on stone or marble for a cool foundation. This shall suffice for the ancient basilica: we have now to turn to the early Christian temple.

Before the conversion of Constantine, the followers of Jesus were not permitted to erect buildings for the celebration of their worship; they performed their rites in the dark recesses of the catacombs, or in private houses. The Christians did sometimes obtain, by special favour, the use of some building of no external appearance; but they were not permitted to extend the dimensions, nor affect any imitation of the temples of the gods. Alexander Severus granted a sort of tavern for the Christian superstition, the "Taberna Meritoria," in the Transtiberine district: the basilica of St. Maria, in Trastevere, one of the seven of Rome, was erected upon the site, and is said to have been the first public edifice built for Christian worship at Rome. It was, no doubt, under Constantine that this was effected, when the protection of the law was extended to Christianity. Rome, then, was the cradle of Ecclesiastical architecture, and Italy affords a succession of churches from the earliest period to the present time. I need not tell you that, in the splendid work of the late Mr. Gally Knight, we have an unbroken chain, arranged in chronological order. It begins with the basilica of S. Clemente, at Rome; and the *plan* of that edifice, which agrees with that as measured and drawn by Knapp, is now before you. It is easy to see, at the first glance, that we have here the ancient basilica, with such internal arrangements as were required for conducting the new worship. The circular temples of ancient Rome were also adopted as places for Christian worship: the Pantheon and the Minerva Medica were selected as models. So convenient (says Forsyth) were the niches of the Pantheon for the Christian altar, that Michelangelo, ever studious of ancient beauty, introduced their design as a model in the Catholic church. In short (says Mr. Knight), the basilica was at once adopted as the model for a church, and the bishop and the presbyters succeeded to the prætor and the judges in occupation of the semicircular recess. The associating of the church with the tomb,

from the custom which originated in the catacombs, gave rise to the crypt. Some of the earliest churches were placed over the catacombs, and stairs were constructed by which to descend into them. Where there were no catacombs, a subterraneous place of worship was made in imitation, until, at length, the bones of the martyrs were brought up and placed under the altar. But we are to confine ourselves in this paper to the general plan. The church of S. Clemente is said to have been originally built on the site of the paternal house of the fellow-labourer of St. Paul, and was erected in the fourth, or, at the latest, in the fifth century. It was rebuilt by Adrian I. in 790. It retains its original form, and is the only Christian church in existence which, without any material alteration, presents us with a faithful model of an early Christian basilica. As the rigour of ecclesiastical discipline increased, and men were found to submit to it, the interior arrangement of a church became more complicated; more divisions and separations were wanted. To these I shall soon refer. It will be observed that the church of S. Clemente is complete, having the atrium without as well as the parts within. The Christian basilicas, in their primitive form, were generally quadrilungal. The branches forming the cross were introduced at a later period. It was a general rule to place them east and west, and this is the case with S. Clemente; but there were many exceptions when the nature of the locality required: the basilicas Sessoriana (at the Santa Croce in Gerusalemme) and Eudoxiana were varied as to their cardinal points. Many of the churches in Rome at this day are out of this magnetic oriental line; and, as to Ireland, St. Patrick seems to have given them all a twist towards the west, prophetically pointing the way across the Atlantic in the great exodus of the nineteenth century.

But looking at an early legitimate Christian basilica, we may divide its parts into outward and inward: to the former belong the vestibulum and the atrium; to the latter the naves, the choir, and the sanctuary or bema. Beginning with the exterior parts, we may observe that the vestibulum of a private house was an intermediate space or area between the house and the public street: it was fenced by a wall, and often furnished with exedræ and recesses for the accommodation of persons who came to the levy of the patron at a somewhat earlier hour than the levies of modern times. That which the Latins called vestibulum, the Greeks called προθυρον, or προαυλιον. We find an example of this vestibulum in the area which stands before the church of S. Clemente. The small portico of four columns, however, now standing, must not be confounded with the ancient vestibulum: it is a work of the ninth century, and covers the original vestibulum. Similar specimens of this kind of access are still existing in the churches of S. Prassede, S. Maria in Cosmedin, S. Cosimato, and others: these may all be considered as works of the ninth century, when the forms of churches began to vary from the primitive style: they were, in fact, substituted for the ancient vestibule, to meet the changes in ecclesiastical discipline to which I have already alluded, and to which I shall again refer. From the vestibule, people entered by a door into the atrium. This consisted of a square court, surrounded by columns, and formed into a cloister. In S. Clemente, the atrium is admirably preserved: three sides are supported by columns: the fourth, which gives entrance, is supported by three brick arches. It is important to distinguish between the vestibulum and the atrium, because they are sometimes confounded both in word and in matter. The Greek word corresponding to atrium is αιθριος, sometimes αυλη, words expressive of an uncovered court. The open area of this atrium was sometimes planted with trees and shrubs: the mystic plants were preferred, as the cedar, the cypress, the vine, the rose, and such like; and hence the area so ornamented was sometimes called by a Latinized Greek word *paradisus*—a name which the atrium of the Vatican basilica retained long after the trees and mystic plants were replaced by marble pavement. In the middle of the atrium was one or more fountains, and if not fountains, a well or a cistern; in this it was the custom of the faithful to wash their hands before entering the church, a usage that is traced as far back as the time of Tertullian. Under the shade of the surrounding portico, pilgrims were sometimes lodged: they served also for the habitations of the inferior ministers employed about the service. But we can proceed no further with our description of S. Clemente until we have made up the different classes of our congregation, for in this, as well as in profane matters, there are antiquarian controversies: it is not necessarily peace, because the subject is sacred. Church antiquities have been as fruitful in disputation as the three gates of Romulus or Ariosto's ink-stand. Four classes of penitents are found in the canons of councils and in the fathers: the first was called προκλαιοντες, or the wailing ones; the second, the ακροωμενοι, or the hearing ones; the third class was the υποπιπτοντες, or the prostrate; and the fourth, the συνεστωντες, or the standing ones—that is, standing without communion. S. Basil, in one of his epistles, tells us how fifteen years were spent by a penitent sinner of a certain description among these four unenviable positions. The first four years he wept, for five more he listened, for other four he lay down, and for the remaining two he stood up. We have to find four suitable places for these different orders of penitents. Before the door which led from the vestibulum into the atrium stood the first order, *the wailers*, outside the church imploring of the faithful, as they passed within, to pray for them. On the corresponding or opposite side of the atrium, adjacent to the front of the body of the church, was the place for pagans, heretics, catechumens, and the second class of penitents called the hearing or listening ones, a motley throng, and all supposed to be under corporal as well as mental discipline. These two places, assigned for the weepers and the listeners, were called narthex; according to some the first and second narthex; but others say that only the space adjacent to the nave or body of the church was called narthex, *par excellence;* and here Leone Allacci raises a knotty point, as to whether these catechumens and energumens and acroomeni, or hearers, were admitted within the body of the church during service or not. Gregory Thaumaturgus is cited to prove that the place for the hearers at least was within the door during the instruction, though not during the prayers. It would certainly seem a refinement of discipline to put the hearers out of the church in a place where they could hear nothing; and, therefore, we are rather inclined to let the narthex extend a little within the church door. It was called narthex on account of the ferula or rod that the penitents used for inflicting chastisement upon themselves; and if this were really done, *con amore*, so that the wailers on one side, and the hearers on the other side of the atrium, should have joined in a howling chorus, one cannot wonder that the name of Paradise, once given to the area, went out at a very early stage of penitential discipline, for any thing more unlike a Paradise one cannot well imagine. We dispose, then, of the exterior parts of the basilica, and from the atrium, by three or five doors, according to the number of the aisles into which the whole interior was divided, we enter into the body of the church: this was called by the general name of navis, from its supposed resemblance to the keel of a ship, or, more probably, from that metaphorical description of the church, which is likened to the ark sailing over the waters, and bearing along the souls that were saved. Into the nave or naves—for the word was applied to each division—the common herd of worshippers crowded; the women, however, occupying one side nave or aisle to the left of the confessional; the men on the right, or, as we shall better understand these positions with our churches turned to the east: the men occupied the south aisle, and the women the north. They took the precaution to draw curtains between the columns, that the two sexes might not see one another. The men were superintended by the deacons, and the women by the sub-deacons, and thus all eyes were kept from wandering during the solemn ceremony. This custom of separating the men and women in churches still prevails on the Continent in the Protestant as well as in the Roman Catholic churches. The second part of the interior of the church we have called the chorus: it consisted in an inclosure, either of a rectilinear or a curvilinear form, and rose in the very centre of the main nave, but not so high as the sanctuary, which we have yet to point out. There was a space on either side of the chorus, which admitted the two sexes into mutual concealment behind the ambo, or pulpit; and here were the penitents of the third class called the prostrati; these left the church at the same time with the catechumens; and the hearers, when a deacon pronounced the words "Ite missa est," which meant, that all who were not fit to remain for the service of the sanctuary which was about to commence were to depart, and hence that portion of the service came to be called Missa; and now there is but that service Missa, or the Mass, for all. This part of the ancient Christian Basilica is preserved intact in the Church of S. Clemente, where it is rectilinear, and just as Pope John VIII. in the ninth century, restored it. The name chorus sufficiently indicates the purpose for which it was used. Here they sang hymns and psalms and spiritual songs during the service, and there are the seats of the singers still existing beneath the ambo, on the right: from here also the Gospels and Epistles were read; and there stand the two ambones, or pulpits, all of marble, elevated above the rest of the chorus. Du Cange has produced several examples to prove that the bishops delivered their homilies from the ambo. One of these ambones from which the Scriptures were read came to be called a lectorium, and hence the lectern, which has been of late years more used and talked of. We now come to the last and most holy part of the church, where the sacred mysteries were celebrated: it is called by the Greeks γερατειον, by the Latins Sanctuarium and Sacrarium: this was separated from the rest of the church by curtains. Some marks of the fastenings are still traceable in the parapet which, in S. Clemente, separates the sanctuary from the chorus. This part of the church was elevated above the chorus, and was, therefore, ascended to by steps: it was called the bema, from the Greek word βαινω, to go up; and it corresponded to the Latin word tribunal, and to the modern tribune, which now designates the whole of the hemicyclium. In the midst of this elevated platform stood the altar, disengaged from every thing else: it was called by various names among the Greeks—a θυσιαστηριον, or sacrificing altar; αγια τραπεζα, or holy table, and others. The altar was generally overshadowed by a baldachin, supported by four columns, as we see in S. Clemente: the number of columns probably alludes to the four Evangelists. The custom of celebrating the rites near the tombs of the martyrs brought their relics under the altars of churches. The Greeks call the place where they were deposited Μαρτυριον, and the Latins Confessional; hence the name now given to these small vaults under the altar, where the relics are supposed to be preserved. On the right and left of this Confessional, in the space corresponding to the middle nave, the deacons assisted standing, and this part was, therefore, called Diaconicum. Near here, too, we may place the standing penitents, who were at length candidates for participating in the sacred mysteries. In the middle of the hemicyclium was an exhedra or throne, in which the emperor, and afterwards the bishops sat, having on the right and left seats (sedilia) for the presbyters; these seats remain in S. Clemente. A little stand called the prothesis, on which some part of the service was performed, is also preserved. The two apses projecting from the extremities of the two side naves are altogether of modern date, and I think this will be enough to show how the early Christian temple grew out of the ancient basilica.

Reluctant as I am to turn this paradisus of ours into a narthex, I must beg for a few minutes' indulgence while I endeavour to turn this subject to some practical use for you gentlemen who have to shape your buildings, and especially your sacred edifices, to the exigencies of the times, and to an age impatient of penance. I have taken you through all the parts and gradations of an early Christian temple, showing, as briefly as I could, how it grew out of the ancient Basilica; but it is, perhaps, still more

interesting to see how it grew down again; for looking at Christian churches of more modern date (I mean, of course, in Roman Catholic countries), we find neither narthex nor atrium, and not even a vestibulum: the cistern is gone, the cloisters for lodging pilgrims have disappeared; the chorus and the ambones have moved off in different directions; and, in many instances, you just have a bema to swear by. These things have either all disappeared or are changed, for the simple reason that they are no longer wanted; and if retained by any sturdy ecclesiastics, expecting the ancient discipline to come back, they stood useless to point a moral or adorn a legend. Architects, like statesmen, must make their plans to suit the altered state of things; and it would now be as unwise in an architect to fit up a church with a narthex and a chorus as it would be for a first lord of her Majesty's Treasury to fit up the New Houses of Parliament with iron cages for refractory Irish members. I imagine that the ancient discipline of the church, which required of a notorious sinner fifteen years of penance, was at its height when the great Theodosius submitted to the penance imposed upon him by S. Ambrose for his cruel massacre of the Thessalonians: this was in the year 390. It might not be long after this date that our Basilica of S. Clemente was erected. Stripped of the ensigns of royalty, the emperor of the Romans appeared in the church of Milan in a mournful and suppliant posture, and humbly solicited, with sighs and tears, the pardon of his sins. Never was the narthex more triumphant; and if men in those days were influenced as they are now by the example of exalted station, we may imagine that doing penance became the fashion, and churches must be built to suit the exigencies of the day: but this was straining frail human nature too far to last, and we shall seek in vain for the atrium and the outer vestibulum after two or three centuries had elapsed. Projecting porches, observes Mr. Gally Knight, had been very generally discontinued during the seventh and eighth centuries, perhaps from a relaxation of the discipline which had caused the lowest class of penitents to wait outside; so that if we would see what the basilica had become in the ninth century, we must look at such a church as S Maria in Cosmedin, S. Prassede, and some others at Rome. It is not unlikely, when the atrium and outer vestibulum were done away, that the penitents might all be admitted within the basilica, but still in separate places, folded in according to their states. But still I imagine that where there was a porch or vestibulum, as in the S. Maria, in Cosmedin, the lowest class of penitents was kept outside. I am not attempting to follow the history of ecclesiastical architecture in Italy, but simply to point out how the early church, which required so much accommodation for classifying the worshippers, was altered with men's notions of discipline. None of the churches of the eleventh century, or during the ages of the Crusades, were built with an atrium or a narthex. Another mode of doing penance had been opened out by the romantic piety of the Middle Ages. "A new chord of exquisite feeling," says Gibbon, "had been touched, and the sensation vibrated to the heart of Europe." S. Clemente remains to tell the tale of ancient discipline; but you would look in vain now in any church in Rome for a narthex or an atrium, or a chorus, in the middle of the nave. There are now no penitents crying in the outer porch, nor any listening in mournful silence in the vestibulum: there are no prostrati in the nave, nor any standing, except the chanting friars below the bema: all are now mingled in one promiscuous throng, and public penance is commuted into a more private discipline. The confessionals on each side of the nave may be very useful for such discipline, but for the most part they are not ornamental: in short, we have now in a modern basilica (S. Peter's, for instance) a portico which serves not for any class of worshippers. We have the great body, or navis, with its two side aisles, the branches of the cross, which disturb nothing in our subject; then the altar, with its confessional beneath, and the capacious apsis, like the original basilica, at the end. There is very little elevation of the sanctuary in some of the largest basilicas; but in others the bema is distinguished by its height. In some churches there are many steps up to the altar, and in all there are some. This characteristic of an ancient basilica seems to be the only one which the Church of the Reformation has shown any desire to retain. The bema with us is the chancel, and in what some call our improved church architecture, arrangements are made for isolating this part of the interior from the rest. The proper thing, if the word *cancelli* is to be represented, is to close the space for the communion table with iron or brass gates, and to let the altar stand on a considerable elevation. In some instances we have got the *ambones* (*Anglicè*, pulpit and reading-desk) in something like their ancient position, and I have heard of some design of restoring the narthex; but I would not recommend any of our young friends to be studying ancient basilicas with any great prospect of getting into large practice; for I believe, after all, we shall have to be content with a very little vestibulum, no atrium, a chorus put up aloft, and a bema not exceeding three steps high. We must come down from our elevation: having lost our wailers and mourners, and having but few *prostrati*, and none standing, except where there are no sittings, we must fashion our temples to suit our congregations; but that is no reason why we should not study propriety and proportion. The skill of the architect is shown, not so much when he has modelled the worship and the congregation to his design, as when he has adapted with ingenuity and taste the less classical building to the requirements of a simple service, and the demands of a worshipping people. There is yet scope in our churches for ingenuity, and even originality, in design; but anything that is superfluous as to ceremony, or antiquated as to use, will injure the whole. Preparations made for pomp or ceremony, even if they have the authority of "Bingham's Antiquities," will rather indicate poverty of invention than accomplishment in art. It is well to know, and it must form a necessary part of a young architect's education to follow, the history of ecclesiastical architecture; but let him throw all his sketches aside when he is called to build a church in a sub division of a parish, or a cheap chapel in a Peel's district: let him take to his own resources, and put out of his design everything that is not connected with reading prayers, administering the communion, and preaching the sermon: let him consider the persons that will assemble in his basilica as all one class, where there will be neither bondmen nor freemen, male nor female, rich nor poor, but all looking up to one man delivering a homily from a wooden *ambo*, or reading a chapter from an old-fashioned lectern; as few distinctions as possible of place, and wooden galleries (as we must needs have them) so constructed as not to block up the windows, or make the side aisles like crypts or catacombs. It seems settled that we must all look to the east; but when once that is decided, afford no convenience to the Nonconformists, who wish to look west. Let the kind of worship be understood from the mere inspection of the plan, so that if the New Zealander, some 2,000 years hence, should make a tour through Europe, he may be able to discern the ruins of a genuine Church of England from the poor imitations of a mediæval construction. These, gentlemen, are not Vitruvian precepts, but gentle hints to our young aspirants. The moral is, that they should study how to deal with realities, and even to give to deformity its due proportions. It seldom happens that an architect has everything his own way; he must, therefore, learn to adapt his designs to the resources placed at his disposal, and to a worship which consists less in a *narthex* and a *bema* than it does "in spirit and in truth."

Mr. Tite said that he scarcely knew which to admire most, the learning and research which Mr. Burgess had shown in the illustration of his subject, or the strong good sense which characterized his concluding remarks. When he (Mr. Tite) was at Rome, the Church of S. Clemente had interested him exceedingly by its general character, and the singular beauty of its material and workmanship. It especially reminded him in its arrangement of the general form of the Jewish synagogue, the latter of which, as at present arranged, must, he thought, have had its origin in Rome. In each there was an enclosure in the middl slightly elevated with a marble railing, and a readin desk on each side: in the one the altar, and in th other the holy place, in which the rolls of the law a placed, were in a semi-circular recess at the end, b by no means prominent in itself. Mr. Burgess ha shown clearly the different divisions of the earl Christian churches, and their appropriation to di ferent classes of worshippers. Such a classificatio was then necessary. Those who had been among the earliest Christians were properly recognized an distinguished, whilst the newer converts, or catechu mens, took a humbler rank and position in th building. The popular legend of Rome recorde that when St. Clement was martyred in the adjacen Flavian Amphitheatre, his dead body was dragge into what was then probably a house, but whic afterwards became the church, as described by Mr Burgess. However, his object in rising was rathe to call the attention of the meeting to the mistake s constantly made in building churches for Protestan worship with distinctly Roman Catholic arrangements The Protestant form of prayer was a "Commo Prayer," the congregation should pray with th minister. Unlike a mass, which might be as accept able a sacrifice from an individual as from a crowd, i our own ritual it was essential that all should see, an hear, and pray together. On the contrary, he saw with great regret, that the fondness for mediæval forms led t the adoption of arrangements far better suited to th revival of Roman Catholicism than to Protestan worship. He could quite understand the views o those who thought the Roman Catholic religion ought to be restored; and in that case many of the modern churches were most appropriate; but, at all events architects should understand what they were about and if they were to build Protestant churches for the Protestant form of worship, they should adapt them strictly to that purpose. He had built some churches formerly, but, as they knew, he was not a great modern church builder—perhaps from not falling in with the fashion—but he must express his regret that with so large an expenditure, there was not a more distinct realization of the purpose of the sacred edifice. For himself he did not like to find a large column intercepting his sight and hearing of the minister; and, certainly, he must repeat, that in the majority of our recent churches there could be no community of prayer. He could understand and feel the beauty of the prevailing arrangements in the Roman Catholic service, but he again denied their appropriateness to our own.

Mr. Donaldson ventured to differ with Mr. Burgess as to the nomenclature of the supposed Temple of Peace, or Basilica of Constantine. He believed it was neither one nor the other, and could only regard it as a vast tribunal, or hall of justice, with a hemicycle in which the judge should sit, surrounded by prætors, or assessors, a space in front, and other large spaces for persons to be in attendance, without interfering with the legal proceedings. The plan of the building was very similar to the large central halls of the baths, particularly those of Diocletian and Caracalla. From the loose descriptions of the ancient authors, antiquaries might apparently be justified in adopting this building as the Temple of Peace or the Basilica of Constantine; but it did not appear to him to correspond at all to an ancient basilica; and Mr. Burgess had not pointed out any details in its arrangement which peculiarly resembled those of the early Christian churches. He had, indeed, confined his illustrations of the latter to the Church of S. Clemente. He was astonished also to hear Mr. Burgess describe Rome as the cradle of ecclesiastical architecture, overlooking altogether the fine class of architecture which had its origin in Byzantium. The expression should, therefore, be limited to "Western ecclesiastical architecture," of which Rome was indeed the cradle. In reference to the restoration of the Basilica of Constantine, he also differed from Mr. Burgess, as he did not think the architecture of Rome had deteriorated in the time of Constantine so much as he supposed. He considered that the openings, which Mr. Burgess regarded as windows converted into doorways, were in fact always opening, two together, under one arched head, and probably of the same height as the main openings, but divided by piers, in the same manner as the lights of a window were divided by mullions. However, in his description of the Church of S. Clemente, and of its various arrangements and sub-divisions, Mr. Burgess had displayed the greatest research and accuracy, and having himself studied the subject, he could only admire the beauty and correctness of his remarks. He might add that he had been induced to think the Church of S. Clemente was in fact an ancient Roman temple, and that the columns and the piers between them formed a continuous colonnade, which had been cased up in a later construction. He heartily concurred in Mr. Burgess's peroration, and wished that architects, bishops, and other ecclesiastical

authorities would remember that our churches ought to be strictly and substantially Protestant churches.

The Rev. Mr. Burgess said, that with respect to the nomenclature of the Basilica of Constantine, he would first observe, that it could not possibly have formed part of a bath: any one who had studied the topography of Rome would see that there was no room in that locality for a bath, of which this building could have formed a part. It was equally clear, as before observed, that it was not a temple, there being no cella, no pronaos, and no portico. Then, in support of the opinion that it was a basilica, the ancient marble plan of Rome afforded evidence that the Basilica Emilia was a large hall, divided into three naves; and, therefore, the building now under consideration was as much like that in its arrangement as it possibly could be. Mr. Burgess repeated that there was a great deterioration in the brickwork and the sculpture of Rome. Indeed, the sudden decline of the art, after the age of the Antonines, was most remarkable. The arch of Septimius Severus presented a striking contrast to that known as the arch of Constantine,—though, in fact, made of the materials of Trajan's arch—the sculpture in the former being far inferior to the magnificent bas-reliefs of the latter. The brickwork also of the time of Severus was very inferior to that in the aqueduct of Nero. Perhaps, however, the best proof of the date of the Basilica of Constantine was the discovery of a medal of Maxentius, in a portion of the vaulting which fell down in the year 1828. Upon the whole, therefore, he adhered to his nomenclature of the Basilica of Constantine. That the Temple of Peace was entirely consumed by fire there could be no doubt whatever. Mr. Donaldson's surmise was probably correct, that the Basilica of S. Clemente occupied the site of an ancient temple; and it was very likely that the materials were taken from a temple on or near the spot.

THE BUILDING FOR THE INDUSTRIAL EXHIBITION FOR SCOTLAND.

In the circular which has been issued by the committee of promoters of a Great Industrial Exhibition in Scotland, they announce that they have succeeded in acquiring the "option of a central and adequate site on the Calton Hill of Edinburgh, which combines, along with the present object, the completion of a Great National Edifice, and that a contractor is prepared to execute the work, and to rely for payment of half of the expense on the receipts." They give a view of the building they propose to erect on the Calton Hill—a large Doric temple, pseudo-dipteral, on a high basement; and in the section which accompanies it, the massive columns of the flanks are shown to be resting on slight props of iron in the lower apartment, so we must suppose that the columns are to be of some hollow framework or composition. It is to be hoped that the committee will not perpetrate such an absurdity as this would be, but erect an honest, truthful structure fitted for the purpose.

THE ISLINGTON DISTRICT SURVEYORSHIPS.

The election of surveyors for the Islington districts took place on Thursday, the 14th, when the following sixteen gentlemen were candidates:—Mr. Barnett, Mr. Cantwell, Mr. Carpenter, Mr. Field, Mr. Godwin, Mr. Hamson, Mr. Harrison, Mr. Hendrey, Mr. Hill, Mr. Kendall, Mr. Lane, Mr. Legg, Mr. Liddiard, Mr. Moseley, Mr. Porter, and Mr. Williams. The election fell on

Mr. Moseley, West Islington;
Mr. Carpenter, East Islington; and
Mr. Godwin, South Islington.

SIGHTS AND SCENERY.

Burford's Panorama of Mexico.—Mr. Burford's new panorama, representing the city of Mexico, is very interesting both as a subject and in execution,—recalling, as it does, Montezuma, Cortes, and all the wild story of their time, while it delights by the vigour and skill with which it is painted. The view is taken from the top of the cathedral: the town lies closely around, with every building distinguishable. Two peculiarities will strike every beholder—the flat tops which terminate the houses, and the amazing number of churches and convents as compared with the dwellings.



MEDIÆVAL KNOCKER, FRANCE.

MEDIÆVAL KNOCKER.

The accompanying engraving is the second example of a mediæval knocker from France, referred to in Mr. Clutton's interesting book, reviewed by us last week. The original has been carried away and is now unknown.

PUBLIC IMPROVEMENTS, AND THE MEANS OF REALIZING THEM.

The remarks made by you in your number of June 25, on certain suggestions of mine for providing the means of carrying forward public improvements on a large scale in the town of Liverpool, have induced me to follow up the subject by some further remarks, to which your large circulation may be the means of calling public attention much more widely than any mere local proposals can possibly hope to attain. The question is one of national importance. If, as it has been said, the man who points out the means of growing two blades of grass where only one grew before is a public benefactor, any scheme of finance which can enable one pound to do the work of two is not to be lightly thrown aside as chimerical, until it has undergone the strictest examination, and its absurdity has been sufficiently made patent.

From circumstances too familiar to need even a passing reference, the public mind, relieved from struggling with fiscal burdens, and enjoying the blessings of extended and extending commerce, has had leisure to direct its attention to the higher class of social wants, the beauty, order, and convenience of that artificial external world in which most of us spend our lives.

Public improvements in every shape, provision for the elevation of the masses in intellect and taste, are the order of the day. It becomes, therefore, a matter of the utmost importance to consider the easiest mode of providing funds for the purpose, to discover in what way the burden will weigh the lightest on the community, and be the soonest removed. The subject of finance, to judge by the hundreds of volumes written upon it, ought to be well understood, and yet there is, perhaps, none in regard to which there is a greater amount of stupid dogmatism on the one hand and of baseless visionary theory on the other. It is scarcely possible to approach it without becoming involved in the mazes of the currency question, and either being annihilated by the heavy artillery of the bullionists, or reduced to a discount of cent. per cent. by the paper pellets of Messrs. Muntz and Attwood. It may be, however, that the truth is exclusively possessed by neither side, though partially by both, and that some additional light may yet be thrown on the subject, if not by substituting new lamps for the old, at least by brightening up and enabling the old to emit their light with more clearness.

The usual method of raising funds for public improvements, and the mode sanctioned by the Public Health Act, is that of taking up money on bond for a limited term of years at varying rates of interest, according to circumstances, to be renewed from time to time. In addition to the regular interest, a further sum has to be invested by way of sinking-fund, so as to clear off the principal sum in about thirty years. This will ordinarily require an annual payment of six per cent. on the money borrowed.

The first improvement on this method which occurs as practicable is that of funding the amount borrowed, that is, of converting it into a marketable stock at a fixed rate of interest. This of course would not be practicable for small sums or in a small community, but in towns of the first class, such as Manchester, Glasgow, Liverpool, or Birmingham, the advantages would be manifold. To the community which has to pay the interest and redemption, the principal advantage is the lower rate of interest at which the money could be borrowed, arising from the fixed rate of interest and the facilities for transfer. The railway companies are beginning to find this out, and instead of taking up money on debentures, which when borrowed at a low rate of interest frequently has to be paid off by money borrowed at a high rate, they are proposing to issue preference stock, bearing a low but certain rate of interest, which can be bought and sold like railway shares or consols, and which can be reduced or extinguished with the

greatest facility by purchasing their own stock in the market.

A further improvement is capable of being effected by converting a portion of the amount borrowed into negociable bonds with attached coupons, bearing a low rate of interest, the bonds and coupons being the property of the bearer, requiring no transfer and no indorsement. This is a portion of the scheme of the Chancellor of the Exchequer in his recently developed plan for reducing the interest of the national debt. The advantage of this method in any great scheme of improvement would be the still lower rate at which money could be procured the security provided being, of course, supposed undoubted.

All these plans suppose the money to be borrowed, the interest to be regularly discharged, and the principal to be honestly paid back again in the course of time.

But what will be thought of a plan for expending large sums in public improvements, and of honestly paying for them too, without costing the public one farthing? And this not by taxing the benevolence of individuals to do for the public what they ought to do for themselves, but by a system of finance in which all are equally interested and equally responsible? Paradoxical as it may appear, it is not only possible, but it has actually been done, and may be done again with perfect safety under the same conditions. The principles and conditions involved are well worth inquiring into, quite as much in the way of warning where they are inapplicable as of encouragement where they may be applied with safety.

The instance to which reference has so frequently been made is that of a market in the island of Guernsey, which cost 4,000*l.* and was paid for in the following manner:—The amount was voted by the states (the legislative body) of the island, on the security of the entire property of the community. One-pound notes were issued to the amount, and made a legal tender by a resolution of the states. When the market was built and occupied, it produced a rental of about 400*l.* per annum. This money as it accrued was applied to the calling in and extinguishing these "market notes," so that in the course of about ten or twelve years the whole sum was paid off by the mere accumulation of the rents, without any cost whatever to the public.

The gold in California and Australia, however abundant it may be, requires severe labour to extricate it from the "diggins" and render it fit for circulation; but here is a creation of a property worth 4,000*l.* with scarcely an effort. Whatever may be thought of the principle, about the result there can be no mistake. It is a tangible historical fact. Let us approach it a little more closely, and examine its distinctive peculiarities. The first thing worthy of note is that the expenditure was a *reproductive* one. The building, when erected, produced a rental, which rental was regularly applied towards paying off the principal until all was wiped away. In this respect it was analogous to the case of money borrowed without interest, to be paid back out of the accruing rental.

The second circumstance worthy of remark is, that the notes issued were made a legal tender by the authority of the legislature, thus for every practical purpose converting them into money. In England this would be impracticable in the present state of the law, and it is to be feared that any change in the law in this respect would be fraught with great danger.

Where these two circumstances are both in existence—a reproductive power in the expenditure, and such a feeling in the community of the safety and advantage of the plan as would keep the notes afloat—the scheme is quite as applicable as in the case of Guernsey, and might prove the means of carrying out many objects of public utility at no risk and without any cost. It is not indeed absolutely necessary for the success of the plan that the reproductive income should be derived from the object for which the money is expended. If a fund exists, derivable from an independent source, sufficient to withdraw the notes gradually within a moderate number of years, the object may be equally attained with the same advantages. With prudence in the management, public confidence in the objects aimed at, and the means adopted, and an annual fund which is sufficient to withdraw the notes within a period previously calculated and declared, there is nothing to prevent the beneficial application of the principle to a very wide extent.

The lever which produces such apparently magical effects is the saving of the interest. Any other method of borrowing without interest would answer the same purpose. By being thus converted into a circulation, the small change, so to speak, of the community, the loss of interest is not felt, and the benefits are obtained without loss to any.

A little reflection will show that the limited and guarded principle here propounded is something very different from the inconvertible paper currency from which a certain school of financiers expect such mighty results. A currency-note is a promise to pay, at some defined period, a certain amount in something which has a value all the world over. If it cannot do this which it undertakes, it is "a mockery, a delusion, and a snare," and must sooner or later experience the fate of all delusions, however specious. If the perfect certainty of the convertibility of a paper currency is to be secured, it is difficult to see how a better *principle* can be adopted than that of Peel's Act of 1844, however much exception may reasonably be taken to some of its details. The principle of the Guernsey market notes, as applicable to public purposes, I believe to be perfectly compatible and consistent with the principle of our present monetary laws. Without public confidence it would be impossible even to attempt its adoption in any locality. With public confidence, there would be little difficulty or danger of its failure.

A plan ostensibly somewhat similar was adopted some years since by the corporation of the city of Toronto, in Canada. The city having urgent necessity for funds, which it could not realize by levies or loan, adopted the plan of issuing what were termed corporation or city notes, payable twelve months after date, and bearing interest at six per cent. To what extent this system may have been carried out I possess no means of knowing, but it seems to me to be about the most objectionable mode of borrowing money which could be adopted.

As the notes were to bear interest at the current rate, it is difficult to see what advantage was to be obtained by breaking up the loan into a small note currency, whilst the great uncertainty which must prevail under such a system as to the period when the notes might be presented for payment with their accumulations of interest, and the necessity for making provision for it, would go far to neutralise any advantages of a temporary nature. Add to this the temptation which would exist of extending the issues for the purpose of avoiding temporary embarrassment, and it will be seen that it is a system fraught with danger, and rather a beacon to warn than an example to imitate.

Perfectly agreeing with your remark that "This is a great question in all its purposes and aspects, and ought to be carefully considered and discussed with reference to public improvements, in all its possible modifications," I have thought it desirable, through the medium of your widely-circulated pages, to draw the public attention to what appears to me the rationale of the subject, that any errors in theory might be set right, and any practical difficulties pointed out and removed; and I trust that by the powerful aid of the *Builder* some progress may be made in the right direction.

J. A. Pieton.

Our Smiths.—I was very much gratified by reading your remarks on the smiths' work in last number but one, and was glad that you had the courage to take up the cause of that so-called *degraded class*. If you take both this country and the continent it is well known what the nerve of the smith's arm has done, and can do. If you look into the humble cottage, the stately mansion, the royal palace, all bear testimony to the skill and ingenuity of the smith,—from the needle to the anchor, from the smallest craft on the river to the 120-gun ship. Then look at the immense works that are going on throughout the length and breadth of the land—railways, manufactures, steamboats, steamships, and the tubular bridge—and say, have not the smiths, as a class, been the foremost in raising this country to its present exalted station?

E. M.

ALBERTUS MAGNUS, THE DESIGNER OF COLOGNE CATHEDRAL.*

Albertus, of the lineage of the Counts of *Ballstädt*, was born at Leiningen, on the Danube (between Ulm and Donauworth), in the year 1193. Little is known of his younger years. At an early period we find him at Padua occupied with philosophic, mathematical, and medical studies: he also visited Venice. A sermon, however, of the general of the Dominicans, *Jordanus*, induced young Albertus, then in the bloom of robust youth, to receive at his hands the white and black habit of an order whose most renowned member he was destined to be. He studied now theology, and followed then the vocation of a teacher at Hildesheim, Freiburg, Regensburg, Strasburg, &c. when the greatest men of the age prided themselves on being his pupils, as were Thomas de Champré, Humbert, Johannes de Freiburg, &c. At Cologne, Thomas Aquinas, then very young, joined Albertus, and from 1245 up to 1248 they remained both in Paris, perhaps for obtaining the degree of masters. Albertus's return to Cologne coincides closely with the founding of the Cathedral (*Dom*).

It has been already stated on several sides, that Albertus made the design of that huge building; and an old local tradition confirms it. That he really was an architect is positively proved by the choir of the Dominican church of Cologne, a building executed by him—a structure, however, which has fallen a prey to the destructive and renovatory mania of our times, but has yet been seen by some old inhabitants in all its pristine beauty. Already, when in Venice, Albertus was present at the rebuilding of the church of San Marco, and explained to the workmen the apparent wonder, how in the strata of a marble block the figure of a head with a crown could be found. Moreover, it was a thing quite usual in those times, that monks were architects, as it was also two Dominicans, who began the building of the fine church of Santa Maria Novella, in Florence. It is true that they were mostly churches of the order, which were built by conventuals, while the erection of the larger cathedrals, &c. appertained to the mysterious associations of the masons. But, if we consider that Archbishop Conrad was the real originator of the Cathedral of Cologne, it may be conjectured that he proceeded therein with the greatest freedom; and it becomes clear that he selected the man fit for his purpose, according to his own will and judgment. It must be also taken into account that the constraint of guilds (*Junungszwang*) began much later in the German cities, after the complete downfall of family-governments in the fourteenth century. Now it is to be considered, that three years after the founding of the cathedral, Albertus was chosen the arbitrator between the citizens and the archbishop; therefore appearing as a mind's power, to whom the most important, the peace of the city, was entrusted; so that we may fairly assume that much earlier, even perhaps before the election of Conrad to the archbishopric, some intimate connection might have existed between him and Albertus. Thus, when the latter went to Paris (replete then already with many fine buildings), the commission was probably given to Albertus to make a design (project) of the future cathedral; and as soon as he had returned, the laying of the foundation took place. This will explain why the name of the architect was not put forth ostensibly, as the affair was considered quite a private transaction and trust of the archbishop.

But there are, as well, reasons internally, why we should ascribe this immortal work to a deep philosophical thinker. *Gothic Architecture* had developed itself in France at the end of the twelfth century to a great *external* gorgeousness, still, without any degree of deep consequentiality of its component parts; it had progressed, even before its principles were firmly based, to the greatest richness of ornamentation—at times, heavy, light, fastuous or rough. In Germany, on the other hand, it preserved all its stern consequentiality, moreover, exhibited a hesitation of chasteness—until, like Pallas out of the head of Jove, it appeared quite perfect in the Cologne cathedral, and in the church

* Translated from the *Kolner Domblatt*.

of Altenberg. The principle of these two structures, which appertain probably to one and the same master, who had, there is no doubt, seen Paris and the north of France—the principle, we say, consists therein, that the *essential characteristics* of Gothic architecture, which lay hidden under the superfluous ornaments, are here seized with a gigantic power and unity, and are developed in the manner most beauteous and noblest to the very pitch of perfection. This, certainly, is one of the highest possible art-pursuits, "to bring back a style, already spoiled and overstrained, to its true fundamental principles." If to these probable achievements of Albertus Magnus are added his other performances, an *individuality* arises before us, such as the history of men exhibits few like. He was also the man who brought realism (*den Realismus*) into a regular system, and who, even before Roger Bacon, endeavoured to make a liberal knowledge of Natural History the fundament of philosophy, whence also his contemporaries considered him a sorcerer. Albertus, alike with Bacon, reaches far above the standard of his time; and it is natural, *why* his successors again endeavoured to eject Nature from the pale of human knowledge and ken. This relative conjunction of parties and views is well exemplified in the known anecdote of the automaton of Albertus. Thomas Aquinas went one evening into the cell of Albertus, when the figure rose towards him, saying "Salve Thoma!" He, however, thinking it to be an illusion of the evil spirit, dashed the figure to pieces with his staff.

The twenty-one folio volumes, which Peter Jammy published at Lyons in 1631, *et seqq.* do not comprehend more than the theological and philosophical writings of Albertus, and these even are not complete; and more than the half of what he wrote is either not yet published, or lost, and only known by the titles. How much light would be thrown on the history of the civilization of these times, if we possessed the writings of Albertus on music, arithmetic, on the unity of form, &c.; and still more those on geometry, on theatres and perspective, from which his relation to art would be ascertained with more precision! Although often called to different places of honour and importance, he still preferred and eagerly returned to his solitary studies in his cell of the Dominican convent of Cologne. When eighty-one years old, he went, in 1274, to the second council of Lyons, and three years later to Paris, to defend personally the controverted doctrine of his pupil Thomas de Aquino. He died when eighty-seven, and was buried in the splendid choir of the Dominican church of Cologne, which he had built himself. It is desirable to repeat that, besides the collecting of the Albertus traditions, a history of the philosophical and artistic life of this great man should be written.

PROVINCIAL NEWS.

Ely.—A successful attempt, says the *Cambridge Chronicle*, "has been made to deposit a tunnel of cast iron pipes under the river Ouze, about two miles below Ely. The object is to unite the drainage of two districts of fen land adjoining the river, and to relieve the proprietors from the cost of erecting and working an additional steam-engine. The tunnel is 110 feet in length, 1 foot in diameter, half an inch in thickness, and its weight 10 tons. It is encased in wood, bound with iron hoops, and is deposited in a trench excavated under the bed of the river, and about 10 feet below the ordinary surface of the water. This undertaking, planned by and executed under the superintendence of Mr. Harrison, of Prickwillow, the superintendent of the drainage works of Padnal, Waterden, and Burnt Fen District (and known as the Fen Poet), was completed on Monday last, without erecting a cofferdam or interrupting the navigation."

Fakenham.—Mr. John Brown's plans and drawings for the proposed new corn-exchange at Fakenham have been chosen by the committee. There were nine competitors, five of whom were London architects.

Kettering.—The town-hall and corn-exchange committee have decided that Mr. Henson, of Kettering, builder, is to have the masonry, plastering, &c. his tender being 838*l.* and Messrs. Wilson and Watts, also of Kettering, the carpenter and joining work, &c. at 797*l.* the total estimate being 1,635*l.* Several other tenders were put in. The edifice will be of brick, with Bath-stone dressing, and of modern architecture, with ornamental front. There will be a balcony on the first story, and colonnade on the top, with scroll, &c. The architect is Mr. Law, of Northampton. The exchange will probably be open to corn-dealers by the end of the year, but the entire building will not be completed before next spring.

Huntingdon.—The burial-grounds here are all within the town, and three out of the four of them have become so crowded that it is difficult to allot space for fresh interments. A cemetery for the four parishes has long been thought desirable, but the want of a general Act of Parliament to sanction such a measure has rendered it impolitic (from the great expense) to set about it. A requisition, however, to the mayor has been presented for a public meeting to take the same into consideration.

Hurstpierpoint.—The inauguration of St. John's College for the education of the middle classes has just taken place. The building is Middle-Pointed, and is constructed of grey-squared flint, relieved by copings and masonry of Caen stone. It stands on a picturesque spot, sheltered by the Sussex Downs, and is surrounded by a domain of its own. The internal arrangements comprise every department required in a building of this description. The chapel, it is hoped, will shortly be commenced, the inmates being at present restricted to the use of a crypt under the dining-hall. The architect was Mr. R. C. Carpenter.

Poole.—The chief stone of a church was laid at Branksea Island on 9th instant. The building is to be erected at the sole cost of Major and Mrs. Wagh, the proprietors of the island, who reside at "The Castle" there.

Ventnor.—The foundation-stone of a new Independent Chapel was laid here on 28th ult. The design of the building is Gothic, from the plan of Mr. Raffles Brown, of Liverpool. Mr. J. Spary has taken the contract for the sum of 1,436*l.* and it is expected the building will be completed by 1st March, 1854. According to the *Hampshire Independent*, nearly the whole of the amount required is collected.

Somerset.—The Wellington monument on the Black Down hills in this county, will probably be shortly restored. A considerable sum has now been raised, though not sufficient for the completion of the undertaking. Architects were invited by public advertisements to supply plans and specifications, and those of Messrs. Goodridge and Son have been selected. Mr. David Anst, builder, has been appointed to carry out the works.

Carmarthen.—The bridge at Carmarthen, which is to convey the South Wales Railway line across the river Towy, is being pushed forward, in order to insure a speedy opening to Haverfordwest. Five pile-engines are at work, and some of the work has been kept on night and day. The contractors are Messrs. Conder and Goode. On one side the masonry is much above water, and on the other the foundations are being laid. The pile-driving is nearly finished. The bridge or viaduct will cost nearly 10,000*l.* and will have two openings, one of 55 and the other of 35 feet. The construction will be singular, the part crossing the larger of these spans being drawn back up the line of rails on a slight incline, so that by its own weight it will be carried back again into position. The opening thus obtained will admit vessels up and down the Towy.

Liverpool.—At the sale of a large number of freehold and leasehold houses and shops, at the Clarendon-rooms, lately, out of forty-four lots put up, only four were sold. The bidding, according to the *Journal*, was very sparing, and was generally about one-third under the reserved sum. The lots included from a single house or shop up to half a dozen, many being new, situate in the favourite neighbourhoods of Edge-hill, Wavertree-road, Paddington, &c. and all, with three exceptions, well tenanted. Those under lease were chiefly for a term of seventy-five years, under the Marquis of Salisbury, &c. The bids ranged from 70*l.* up to 1,000*l.*, to which latter the reserved bid was 1,750*l.* The highest purchase was 810*l.*; and the average per centage by the rent upon the purchase amount would be about ten, being a purchase at ten years. The reserved bids were averaged at about twelve years' purchase. "Are these facts," adds the *Journal*, "evidence of a better market for capital? Are they evidence of a superabundance of building property, and the temporary and insecure nature of its value? Are they evidence of an anxious reserve on the part of capitalists, in anticipation of great changes 'looming in the future?' Are they evidence of money-holders having already embarked to their full extent in speculations?"

Coventry.—The committee for erecting new schools in the parish of Saint Michael have selected, from a large number of competitors, the plan of Mr. Murray, an architect recently settled in that city, under whose superintendence schools are in course of erection in Holy Trinity parish. The schools will be Gothic, of the Domestic Middle Pointed period, and will comprise a chapel and residences for the master and mistresses. They are to cost about 3,000*l.*

East Retford.—It has been resolved, at a committee meeting, that the sum of 2,400*l.* should be laid out in the restoration of the external masonry of the church, improvement of the internal fittings, and in the addition of about 300 new sittings. Of the required sum, 1,200*l.* have already been raised by subscriptions, including 200*l.* from the Duke of Newcastle, and 100*l.* from the vicar.

Chesterfield.—The project of building a comprehensive market-house at Chesterfield gains favour with the inhabitants, the most influential of whom are endeavouring to bring it to a successful termination. The sub-committee appointed to make preliminary inquiries into the probable cost of the building have been examining new plans and specifications. Shares have been offered to be taken to the amount of upwards of 1,000*l.*

Darwen.—A meeting of the waterworks directors was held on Monday in last week to fix the water-rates and inspect the progress of the water through the pipes for the first time. About 7,560 yards of piping had been laid, and the engineer, Mr. Bateman, and the directors, found that no joint in the whole length burst. In some parts of the town the water ascended in the air to the height of 130 feet. The whole works are not yet completed. There are two reservoirs in connection with the works; one a reserve, calculated to hold 12,000,000 gallons, and another for immediate service, calculated to hold 2,500,000 gallons. The large reservoir is expected to be completed in about two months, and the service reservoir in about a fortnight.

Hartlepool.—Preparations are going on for the erection of the new pier at Hartlepool. The outside of the masonry will be composed of large blocks of stone, and the interior will be filled with a composition, manufactured by Messrs. Aspden, Ord, and Co. The process is carried on at the beach, where the shingle and gravel of the sea-shore are converted, in a few minutes, into blocks of conglomerate of several tons weight. These materials are thrown together into a wooden frame, mixed with Portland cement and water, and in a few minutes become hard.

Edinburgh.—The external part of the new building on the Mound for the Scottish National Gallery and Royal Scottish Academy is nearly complete: it will be roofed, it is believed, in a month. The interior is divided into two sections or suites of rooms, each approached by an entrance-hall. The eastern one will be reserved for the Academy, and the western for the Gallery. The Academy will have in all seven exhibition rooms, including three octagons, two smaller ones for water-colours, another octagonal apartment at the south end for sculpture, and a room nearly as large as the principal room of the Institution at the north end. All these apartments will be lighted from above, the one to be reserved for sculpture being so constructed as to throw the light fully down from the sides of the ceiling. The council-room of the Academy is at the south end, beyond the sculpture-room, and the library, approached by a staircase, will be above the council-room. The suite of apartments to the west is, in most respects, the same

as those noticed: they are adapted for exhibition rooms.

Leith.—The dock commission propose to form a new graving-dock or patent slip. Mr. Rendel, the principal engineer of the docks, has sent a communication as to the project, accompanied by drawings and specifications for the repairs of the remaining portion of the old east breakwater, the cost of which he estimates at 4,800*l.* also drawings of the proposed graving-dock, with building-slip alongside, the expense of which, together with the necessary reclamation of three acres of land, he estimates at 30,000*l.* and drawings of an alternative plan of a patent slip, the cost of which would be 18,000*l.*

Dundee.—A company is being formed here (chiefly through the exertions of Lord Kinnaird) for the erection of a corn-exchange, literary institution, assembly-rooms, &c. Already upwards of 2,500*l.* have been subscribed by the neighbouring agricultural gentlemen. The plans of the new building are by Messrs Coe and Goodwin, of London. The style is Tudor, and the estimated cost 5,000*l.*

THE LABOUR MOVEMENT.

AN address has been circulated by a body calling themselves "The Nine Hours per Day Committee," of the London Operative Stonemasons, to urge a resolution passed at a meeting of their trade in May last, namely, that—

"It is the opinion of this meeting that long hours of labour are unquestionably very injurious to the natural development of man's constitution, both morally, intellectually, and physically. We therefore propose that the present hours of labour be reduced from ten to nine hours per day, as soon as we have considered it practical to put it into operation. And, further, we consider that a reduction in the hours of labour would be more beneficial than an advancement of wages, because it would thereby not only engage the surplus labour in the market, but also constitute a grand resource of employment to counterbalance the increasing population."

No one can be more anxious to improve the condition of the working classes than we are, but surely it must be apparent to all that something more is necessary to settle the number of hours a man shall work for a certain wage than the "declaration" of a public meeting: otherwise why stop at nine hours? Eight would be more agreeable: six still more so. Carried to the extreme it must at once be seen that the proposition is untenable. It is a question of political economy, and must be settled in quite another way.

The address commences with a congratulation on what seems to us, as we always said, a subject for no congratulation at all, namely, the success of their "agitation against *working over-time.*"

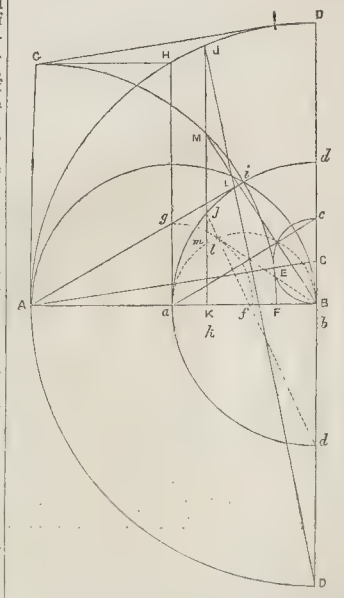
"We are happy to inform you," they say, "that their labour has been completely successful. There is not one firm in London, so far as the masons are concerned, at this date, working overtime! By the force of a well-organized moral combination, aided by a course of energetic, friendly deputations to the employers, this most baneful system of over-time has been completely abolished throughout London and its vicinity."

Over-time? Why, we must all work overtime at one period of our lives, if we would make any advance. That others should prevent it seems to us an infringement of the rights of man, as suicidal as it is unjust. What would the striving barrister, or architect, or author say, if his fellow-barristers, architects, or authors were to prevent him from working more than nine hours a day?

In London the appearances are not by any means satisfactory: the men in several large firms are unfortunately much disposed to strike, and it is impossible to say with certainty what will take place in a few days. This state of things, of course, does much harm: trade is unsettled and loss is caused to all parties. The masters, on the other hand, seem very determined against raising the wages of all alike, and feel assured of being able to obtain other men from the country should a necessity arise. It is a great question if the delegates from the carpenters have the confidence of the body. The agitation which prevails is greatly to be deplored: those who continue to excite it are not the friends of the working men.

EXERCISE IN MECHANICS.—No. 2.

Given a line AB, and another line BK, having a logarithmic relation to AB; to find BC, the modulus or constant of the system of logarithms to which BK belongs.



Upon AB describe a semicircle. Draw DBD′ at right angles to AB, and describe the semicircle DAD′. Draw KJ parallel to BD. Draw JLD′ and BLM. Describe the quadrant AF *i* MG. Make GI equal to GA. Draw AC parallel to GI, meeting BD in C, and BC is the modulus required.

Describe the semicircle $d\,i\,j\,a\,d'$, join A*i*, and draw *ac* parallel to A*i*.

The lines *ab* and *bk* being given, the modulus *bc* may also be determined by the construction described above.

The numerical values of the principal lines may be expressed by the following formulæ:—

BC = Unity × BC.

$AB = \frac{1}{2}\,(n - \frac{1}{n})$ BC . $AC = \frac{1}{2}\,(n + \frac{1}{n})$ BC.

AB + AC = *n* BC . BK = (hyp. log. *n*) BC.

bc = 2 BC = Unity × *bc*.

$ab = \frac{1}{2}\,(n^{\frac{1}{2}} - \frac{1}{n^{\frac{1}{2}}})\ bc.$ $ac = \frac{1}{2}\,(n^{\frac{1}{2}} + \frac{1}{n^{\frac{1}{2}}})\ bc.$

$ab + ac = n^{\frac{1}{2}}\ bc$. $bk = (\text{hyp. log. } n^{\frac{1}{2}})\ bc.$

Supposing BC and BK to be given, how is AB to be determined? And supposing AB and BC to be given, how is BK to be found?

Upon these two questions depends the solution of the following problem:—Given any two numerals, *m* and *n*, to find n^m the mth root or power of *n*.

J. P. W.

A NUISANCE BY THE TEMPLE.

I CRAVE space for the following facts, and am anxious to get the fearful nuisance abated of which I am about to speak.

About 100 yards due east from the Temple Gardens, is an inlet of the Thames; bounded on the west by lay-stalls for all the filth of the suburbs; on the east by the City of London Gas-works; and on the north by the unfortunate citizens, whose business obliges them to reside there.

I have, with two witnesses, counted, in the space of 5 yards (beginning at the head), twenty dead dogs, or other animals, all in a decomposed state, which, supposing the same average to continue throughout the 100 feet, the length of the inlet will show 400 animals lying in the state described, which at this season of the year is likely to produce serious consequences.

They seem to forget that this neighbourhood, a few summers since, was nearly the first that was visited by the cholera.

The inlet, as far as I can ascertain, has been free to the public, or, in other words, a public highway, which I have only seen cleaned once in seven years. Why do not the city authorities keep this inlet clean?

If the sewer, which now discharges itself at the head of the inlet, were carried to low-water mark, and the bar of river refuse and sand removed from the mouth, it could be kept as clean as scores of similar places now in private hands.

F. A. COOLING.

DECISION UNDER MICHAEL ANGELO TAYLOR'S ACT.

MR. HYAM, of 86, Oxford-street, was summoned some time since by the authorities of Marylebone parish for an alleged violation of the Street Act, commonly called Michael Angelo Taylor's Act, in having erected a spiral staircase at the back of his premises, which formed part of the Turk's Head-yard, stated to be a public thoroughfare.

The house is situated at the corner of a yard called Turk's Head-yard, which has but the one entrance from Oxford-street. This yard was formerly private property, inclosed with two pairs of gates. It was an abomination to the neighbourhood. It contained a slaughter-house, where cattle used to be killed. It was always considered to be private property. In rebuilding the premises, No. 86, the owner next this yard had an area 3 feet wide in the clear, covered with a flat iron grating, excepting at the east end next Mr. Bauer's, the complainant's, where a flight of stone steps, 4 feet wide, ascended from the rim of curb to the level of the ground-floor, which was 3 feet 6 inches above the level of the yard footway paving. In making an alteration to the premises during the present year, Mr. Hyam, wishing to increase the depth of his shop by removing the lower flight of a small back staircase, was advised by his architect, Mr. Lockyer, who originally built the premises, to remove the external steps, and to place over the area a small light iron spiral staircase, which should not project before the line of curb, ascending a height of 9 feet 6 inches above the ground-floor to connect with the landing of the upper back staircase. This was carried out by Messrs. W. Cubitt and Co.; but no sooner was it commenced than the neighbours of Nos. 85 and 86 laid a complaint before the Paving Board of St. Marylebone parish, convened a meeting of the committee unknown to Mr. Hyam or his advisers, but which was attended by Mr. Shaw, the paving surveyor, and Mr. Mayhew, on behalf of the complainants. Notice was served by the parish for the removal of the projection, which, not having been complied with, the case was brought before Mr. Bingham, the magistrate, on 22nd June, when it was argued by Mr. Huddleston, on behalf of the parish authorities, and by Mr. Ballantine on behalf of Mr. Hyam. It was contended, under the 72nd section of the Act 57 Geo. 3, cap. 29, that the spiral staircase was inconvenient and incommodious to passengers; and the surveyor of the pavements, whose judgment is directed to form the chief evidence for the complainants, admitted that, although he considered it an inconvenience, yet it did not obstruct either light or air, neither did it project over the footway any further than the steps had previously projected; and on the behalf of the defendant it was argued, that the staircase was not a projection over the public footway; that the neighbour derived a greater benefit than he had enjoyed from the steps, as the angles which the steps had formerly occupied were now paved level with the footway, in consequence of which his entrance was more easily approached; and that the yard, having been private property, the parish had no right, because they had first pitched it with pebbles and then paved it, to consider it their property, or the property of the public. The magistrate had a fortnight for the inspection of the yard and staircase, and then said he had carefully looked over the evidence and the Acts of Parliament applicable to the case, and the conclusion to which he had arrived was, that on two clear grounds he was bound to decide the case against the parish. For the last ten or dozen years at least the private rights of ownership had been exercised over the locality (Turk's Head-yard). It was true that during that period the commissioners of pavement had paved the spot; but whether by such a proceeding the occupants of the place had thereby abandoned their right to the parish was a question which he did not think a single magistrate ought to be called upon to decide. The second ground was as to the inconvenience to the public occasioned by this erection, and on that question he felt bound by the judgment of the surveyor. The summons must therefore be dismissed; but his judgment would not preclude any action in a higher court if parties wished to spend a fortune in deciding a point of no real importance.

COAST DEFENCES.—A lecture was delivered on the 12th inst. at the United Service Institution, Whitehall Yard, by Mr. W. Henry Smith, C.E. "On the applicability of the Recoil System to the Formation of Harbours of Refuge and Defence," practically illustrated by drawings and models, in the proposal for a harbour for the Godwin Sands.



THE "OLD BELFRY," CHICHESTER CATHEDRAL.

[See page 449, *ante*.]

PERFORATED BRICKS.

VICE CHANCELLOR'S COURT: BEART, &c. *v.* VEASEY.

In this case Mr. Bacon, on the 7th inst. moved for an injunction against the defendant, or his agents, servants, or workmen, restraining them from making or vending any perforated bricks upon the principle of the inventions belonging to the plaintiffs, and from counterfeiting, imitating, or resembling the same inventions.

No appearance was made on the part of the defendant.

For the plaintiffs it was stated that the defendant, Mr. Veasey, who is a brickmaker, and carrying on an extensive business in Huntingdonshire, was in communication with the plaintiff, Mr. Beart; dealt with him for bricks; and was in point of fact an agent employed by him for the sale of bricks; and being inclined to carry on some brickmaking on his own account, he applied to the plaintiff to sell him one of his machines. The plaintiff declined, and thereupon Mr. Veasey took upon himself to infringe Mr. Beart's patent. That he procured a person of the name of Armitage, a defendant in another suit, to make machines exactly in imitation of those in the plaintiff's patent, and to apply for letters patent; and that Mr. Armitage has recently procured letters patent, without notice to the plaintiff, and applied for them in such a manner and upon such a title as was very well calculated to draw the matter entirely from the plaintiff's attention; because the patent, being a patent for making bricks, the title of Mr. Armitage's patent is, "An improvement in dies for moulding plastic materials." That with Mr. Armitage's assistance, or without, Mr. Veasey has carried on the business of brickmaking, and has sold and has in his possession a great quantity of bricks. That it is clearly in evidence that the bricks sold by Mr. Veasey are made on the principle of the plaintiff's patent. That Mr. Armitage's patent is not a new invention, but a mere imitation of Mr. Beart's, and has been got up between Mr. Veasey and Mr. Armitage.

The Vice-Chancellor granted the injunction.

BEART *v.* JAMES AND ABRAHAM ARMITAGE.

A similar application for an injunction was applied for against James and Abraham Armitage, of Bury, in the county of Huntingdon, machine-makers, who also failed to appear, and the injunction was granted accordingly, in the terms prayed.

Notices of Books.

The Landlord's and Tenant's Guide. By ALFRED COX, Estate Agent. London.

This volume professes to be a compendium of information upon the procuring, occupying, and disposing of estates and houses, and many collateral subjects, with a gazeteer of Great Britain. Under the broad heads,—"The selection, purchase, hire, and management of houses and land;" "Features of residences and grounds;" "The laws respecting property, and landlord and tenant;" and "Topography,"—it does really contain a great deal of useful information. It is written in a plain, sensible manner, and is very unlike the nonsense in the shape of advertisements to which the author's name sometimes appears, in proof of which we will quote a paragraph from his chapter on professions and trades:—

"Let the choice of business for youth be made with reference to the station in life and sphere of influence of friends, the predilections of youth and his education, which latter ought to have been directed with a view to the future pursuits in contemplation. The notion is very prevalent, that if a boy receive a good general education he will be fitted for almost any pursuit: this is true to a certain extent; but vagaries ought if possible in all cases to yield to definiteness of action; and, as he grows up, the training and study should be especially bent to a proposed future plan of life, so that the schoolboy may not merely be educated for manhood, but for that particular calling which he, when a man, will follow; and then let the acquirement of a knowledge of the selected avocation be pursued with the utmost application, so that he be thoroughly qualified for eventually conducting a trade learned. Poor are the prospects of a youth who is not made thoroughly qualified in some sphere or other. Let him be famous for something, he may arrive at eminence by his own exertions, and is indeed to be commended if he does; but it is a discredit to friends who, by their neglect, jeopardise his success in after-life by not directing his mind to some prescribed pursuit, for the likelihood is, that if with the young man there be not definiteness of action, others who are definite will take the position which he might have occupied. At this time the recommendations of friends will accumulate, but unless these are subordinate to an actual course of action which they are calculated to modify or confirm, they will avail but little."

Miscellanea.

ANCIENT PAVEMENT IN SUSSEX.—The attention and interest which art and archæology are acquiring in influential quarters were pleasantly evinced in the Commons, last week, in reference to the extensive Roman pavement recently discovered at Bognor, in Sussex. Mr. Ewart expressed a desire to be informed by Sir R. H. Inglis, as a trustee of the British Museum, whether it was proposed to remove this pavement to the Museum; and Sir Robert, while stating that the tenant on whose land it was found was waiting till the Archæological Institute visited the vicinity at their approaching congress, and would not part with it, took the opportunity of submitting to the Government the propriety of establishing some authority to which the custody of such objects might be committed. He believed that England was the only country in which ancient monuments were not placed under commission from the Crown. The trustees, he added, were not in treaty for the purchase or removal of any mosaic pavement.

ARCHITECTS AND BUILDERS.—Much has been said, and will no doubt continue to be said, and not without wonder, of competition by architects. Still the evil is not mitigated, but seems rather to increase. As a builder, I feel for them, but cannot help saying they have brought it upon themselves. Did they not first introduce the system among us? Did they not set us against each other in hostile array? And therefore they must not make too much noise now that the serpent has bitten them,—that serpent they have so fondly cherished. The case is very hard, very cruel, and very unjust, to offer a man of talent and research 5*l.* to 10*l.* for that which is worth 50*l.* or even more. But is it not equally hard for the poor builder to toil and slave as he does in estimating what, in gaining, often proves a loss, independent of what he has to contend with in carrying out a contract? The day of reckoning has surely come; and that system which architects introduced is now proving a source of vexation and harassment, and will doubtless do more so. The only way I see to get over the difficulty, is to annihilate the competing system altogether; to do which all must be agreed. We may then hope to see better things both for architects and builders. Architects may rest assured, that if they continue to act as many of them do, they will and that builders will surely take upon themselves to supply plans as well as estimates, independent of any architects at all. I should regret to see this, considering that every man has a right to live by his just and proper calling, and obtain for his services a fair remunerating price.—W.

LIMERICK SCHOOL OF ART.—The first annual distribution of prizes and *conversazione* at the Limerick School of Art took place on Monday, the 4th inst. when an interesting and numerous assemblage of all classes met together. The Lord Bishop of Limerick presided, and in handing each successful candidate his or her premium, added a few judicious words of encouragement, which, to judge by the countenances of the recipients, greatly increased their gratification. The prizes were awarded in a somewhat novel manner, adopted by the committee at the suggestion of the head master. A jury of students, male and female, was empanelled to adjudicate upon the merits of the works in competition, and the result has been, we are told, a more general satisfaction as to the justice of the awards than is often the case. The rooms not occupied with the students' works contained a collection of paintings and engravings, liberally contributed by their owners for the occasion, which added greatly to the enjoyment of the evening.

VALUE OF HONOURABLE CONDUCT.—At the Bankruptcy Court, on the 7th inst. where Mr. Isaac Unwin, builder, came up to receive his certificate, the accounts showed the unsecured debts to be 2,732*l.*; secured, 1,267*l.*; liabilities, 636*l.* The assets were returned thus:—Good debts, 2,781*l.*; doubtful, 420*l.*; property held by creditors, 1,400*l.* The creditors expressed the wish that he should receive an immediate certificate of the first class. His Honour said, that this was a case reflecting the highest credit upon the bankrupt, who had commenced business with a surplus of no less than 3,000*l.* and who, when pressed for payment, came to this court, in order that there should be a fair distribution of his property between the creditors, the result of which would be that the estate would pay 20*s.* in the pound. The accounts were the most accurate he ever recollected seeing in a builder's case, and the Court had great pleasure in granting Mr. Unwin an immediate certificate of the first class. We are glad to record so honourable a testimony.

NEW WESTMINSTER-BRIDGE AND THE THAMES DRAINAGE.—A point of vital importance in the formation of every new bridge across the Thames, and indeed on any of our sluggish southern rivers, is the effect of the new structure on the drainage of the whole course of the river. The substitution of the new for the old London-bridge had the good—chance, shall we call it—to lower the level of the river above bridge at low water no less than 3 feet more than the cumbrous old bridge had ever allowed it to be before, so that a much greater body of water escaped with every receding tide than could possibly get out before; doubtless greatly diminishing the number and extent of the floods which 3 feet of rise in the river must have often assisted in producing on occasions when otherwise, and afterwards, they would cease to occur. It becomes a serious question, therefore, how far the floods which still do so much damage in the course of the Thames, might not be still further diminished by the substitution of new bridges of proper construction for the old, and the present is a favourable opportunity for calling attention to the construction of the proposed new bridge at Westminster, not only on account of the floods, but also of the drainage in a sanitary point of view. Considerations such as these have induced a correspondent, Mr. Felix Wakefield, of Upper Eaton-street, to address us on the subject, at same time enclosing copy of a letter on it, sent to Mr. Alcock, M.P. who took some interest, in the House of Commons, as to the new bridge at Westminster. It is to be hoped that this important point will be looked to and well considered, especially as we do not see that it should necessarily interfere with the effect of the new bridge in relation to the new Houses of Parliament. If the level of the river could by any means be further lowered, numerous and extensive inhabited districts now in a marshy and most malarious state would be drained and rendered healthful: and as observed by Mr. Wakefield, even apart from the influence of bridges, "the Board of Health might spend thousands in the most ingeniously-contrived drains and traps, and not effect a tithe of the good that the buying up the mill and navigation rights with a view to throwing down the dams and locks would do like a touch of magic." Rights such as these in these days of steam-power and railways are not for an instant to be regarded in the face of such sanitary improvements as might be effected by sweeping them away, as a nuisance, and as now a total misapplication of rivers, the populous valleys of which can never be efficiently drained and rendered healthful so long as such obstructions as mills and locks, and cumbrously-constructed bridges, are allowed to infest their course.

THE REQUIRED METROPOLITAN CENTRAL TERMINUS.—We hear of a scheme endorsed by a name that promises something like a practical realization,—that of Mr. John Henderson, of the firm of Fox, Henderson, and Co: who proposes, in a circular printed for private distribution, to raise the proposed structure over a suitable portion of the Thames, on the principle of a viaduct, following as nearly as possible the course of the river, and occupying, more or less, as an ultimate complete scheme, the distance from Westminster-bridge to London-bridge, though commenced, probably, on a small scale, as little more than a communication between the northern and southern railways, since it may easily be extended to almost any conceivable amount of accommodation. The level of the structure would be such as not to interfere with the traffic on the river and on the bridges, and its supports would not injure the views from Whitehall Gardens, Northumberland House, the Adelphi, the Temple Gardens, &c. The Station would divide the river into three parts; viz, one central portion for general traffic, and two side water-ways for the passage of the steamers, which would not interfere with the accommodation for passengers at the various piers and jetties.

TELEGRAPHIC PROGRESS.—Arrangements are said to be actually in progress for laying down a submarine telegraph between the United Kingdom and America: It is intended to connect the two countries, or rather, the Old and New Worlds, through Galway and Halifax, the two nearest points of communication. The distance is about 1,600 miles. The practicability of the scheme has been guaranteed, it is said, by nearly all the eminent engineers of the day, and various firms have sent in estimates for the execution of the work. These estimates vary from 800,000*l.* down to 300,000*l.* and some of the lowest estimates are said to have been sent in by some of the most respectable firms in the country.

BALL VALVE.—I see a notice of the case of Bateman and Grey in your paper. I know you will do me justice when I tell you that the invention of the Gutta Percha Ball Valve is mine; and because I only registered it, Bateman now claims it, although I was upwards of six weeks before him. Surely after paying 15*l.* as I did, I ought to receive protection.—FREEMAN ROE.

RAILWAY IRON REQUIRED.—The *New York Mining Journal* calculates that "the furnaces of the Northern and Western States, the fires of which have so long been quenched, will again be lighted up, and the iron men will no longer complain of being forestalled by foreign iron workers because they were not sufficiently protected by a tariff," and bases the prediction on an estimate of the quantity of railway iron required in Europe and America, for projects either now on hand or in contemplation. The quantity is declared to be 2,400,000 tons. "This," remarks the writer, "gives, estimating 100 tons to the mile, which is about the average of good rail, 24,000 miles of single track, enough to encircle the entire earth, or 12,000 double track: dividing it, half single and half double track, we have 18,000 miles of roads in process of construction. The cost of forming this extent of road (half double track) will not be less, at the present rates of iron, with complete equipments of locomotives, cars, depôts, than a sum total of 900,000,000 dollars. The iron for the rails aloue, as it is now selling, would amount to the respectable sum of 120,000,000 dollars. But there is to be added to these figures, enormous as they are, several roads in the States not taken into the account when these estimates were made, and late foreign intelligence states that subscriptions are opened for the northern railroad of Spain to connect the French frontiers at Bayonne with Madrid, a distance over 500 miles; also that a company is fully organised for the construction of a Central Italian Railroad, connecting Lyons with Rome and Venice, and Vienna with Leghorn and Genoa: Austria, Tuscany, and the Duchies of Modena and Parma, are parties to this enterprise: independent of this, a railroad from Lyons to Turin, the charter of which has been granted; and add to all a railroad to the Pacific, and we have the addition of 5,000 miles of railroad to attach to the above figures, involving a total cost of some 225,000,000 dollars, and 25,000,000 dollars for iron." The writer's calculations, however, have doubtless been slightly biased by an obvious eye to the state of the iron trade, and a desire to uphold the high-price system.

HAMPSTEAD HEATH.—The Bill brought into the House of Lords to empower building on land surrounding the Heath, has been thrown out. The *Gardeners' Chronicle*, commenting on the proposal in our pages to form here a noble park, says:—"If some strong and decided measure is not now taken, the opportunity of securing at least one scene of great natural beauty for the recreation of London is lost for ever. In our judgment the plan of Professor Cockerell deserves the warmest support; and the great metropolitan parishes, if they are wise, will proceed instantly to press upon Parliament the necessity of its adoption. London increases like a rolling ball of snow: no longer ago than June, 1736, the then Duke of Grafton proceeded at law against one Hilliard, for burning bricks upon some building ground at the back of New Bond-street. Where would the west of London have been by this time if the mass of houses had not been stayed by the impassible barrier of Hyde-park. Thirty, nay twenty years since, all that prodigious district consisting of Hyde-park Gardens, or Tyburnia, Bayswater, and Notting-hill, consisted of green fields: fortunately it is stopped to the south by Kensington-gardens, Hyde-park, and Lord Holland's ground, but the tide of buildings rolls resistlessly onwards to the west, and we shall soon find Oxford-street ending at Acton. So will it be with the north. The inevitable fate of the most beautiful, nay the only really beautiful spot near London, is to be covered with bricks and mortar, unless its doom is arrested by the speedy interposition of a public park."

SANITARY PROGRESS IN THE NORTH.—The Alnwick Local Board of Health having failed in making an arrangement with the trustees of the freemen for the supply of the town with water from Haydon Forest, the property of the freemen, have succeeded in obtaining an abundant supply from wells on Rugley, a farm about 3 miles distant from Alnwick, belonging to the Duke of Northumberland. As the wells are situated at an elevation upwards of 300 feet above that of the town, they offer facility for the course of transit. According to a Newcastle paper, his grace expresses his wish to assist by any means in his power the objects of the Board, and will grant them a lease of the water for 200 years at 1*l.* per annum, subject only to the payment, to the occupying tenant, for any surface damage that may be occasioned by laying the pipes to bring the water into the town. The duke has also agreed to take the soil produced by the sewerage for the next thirty years, and intends to erect tanks and other reservoirs to collect and prepare the accumulations to be converted into manure. Works of water supply and of sewerage will be completed by the several Local Boards during this year, in Penrith, Lancaster, Morpeth, Alnwick; and works of sewerage in Berwick-upon-Tweed.

ARCHITECTURAL SOCIETY OF THE ARCHDEACONRY OF NORTHAMPTON.—At the June committee meeting, the Rev. D. Morton in the chair, Mr. Worship sent for examination a MS. work on the heraldry in Great Yarmouth Church. The Rev. B. Hill, of Collingtree, sent, through the Rural Dean, an old hour-glass stand, and some fragments of painted glass, of the 15th century, to be committed to the custody of the society, on the understanding that they were to be restored, whenever wanted for the church. Plans of the re-seating and enlarging of Weldon Church, by Mr. Slater, were submitted for the consideration of the committee. A ground plan for the re-seating of Barnack Church was also approved. The work is intrusted to Mr. Browning, of Stamford, and is to be carried out in open oak sittings of uniform design for rich and poor. A paper was read by Mr. Morton, giving his former communication at greater length, respecting MSS. having relation to Northamptonshire churches. 6,763 of the Harleian MSS. in the British Museum gives notice of 32 churches in this county. A letter was read respecting the establishment of an Archæological Society for Leicestershire; and another from Mr. Sharpe, of Lancaster, on the best mode of extending the usefulness of Architectural Societies.

THE THAMES EMBANKMENT.—The committee, consisting of Sir W. Molesworth (chairman), Mr. Hayter, Mr. Williams, and other members, have passed the preamble of a Bill to give to her Majesty's Commissioners of Public Works and Buildings extended time and further powers for completing the embankment of the Thames between Vauxhall and Battersea-bridges, and a new street from Lower Sloane-street in connection therewith. The extended time is four years from the passing of the Act; and from the statements of Mr. Page, engineer to the commissioners, it appears that of the total embankment of nearly two miles, to be constructed between Battersea and Vauxhall-bridges, more than half a mile is already formed from Vauxhall-bridge to 400 feet above the Belgrave dock, and that on the passing of the Act the remainder will be actively prosecuted. The new street is to be carried out in connection with the Chelsea Suspension-bridge, now constructing, the works in connection with the foundations and abutments of which have been resumed, and the suspension chains and towers for which are in a forward state. The height of the embankment is to be continuously 4 feet above Trinity *datum*, and 70 feet wide in the roadway. Its general character will consist of brick walls, with granite coping, and its estimated cost is 100,000*l.*

THE DRAINAGE OF CROYDON.—I read your remarks on the drainage of this town with deep interest, and it appears to me that Dr. Neil Arnott and Mr. Thomas Page, *have both* overlooked an important matter. The Local Board of Health have caused every house to be fitted with an inverted extinguisher, or cesspool on a small scale. These miscalled water-closets *may* prevent escape of air from the drains, but the impossibility of keeping them clean, and the smell arising from decomposition and fermentation (in spite of the water supply), particularly in the morning, *is most injurious* to children and persons of delicate health; hence in my opinion a great cause of fever, &c. In your number of June 11th, you say "You are glad that the Society of Arts have awarded their medal for certain inventions," &c. Having faith in the *Builder*, I ordered a local plumber to procure three of the articles alluded to; and although the whole cost has not exceeded 10*l.* the result has been most satisfactory; and, as a father, I thank you, Mr. Editor, for having enabled me to get rid of the extinguishers recommended by the Board of Health, before the health of my family was utterly extinguished. I enclose you my card.—M. J. H.

SCHOOLS IN LAMBETH.—Schools for the parish of All Saints are about to be built in York-street, Lambeth Marsh. Mr. Rogers is the architect. The following tenders have been received:—Hayward and Nixon, 610*l.*; Myers, 593*l.*; Sherwood, 580*l.*; Pattrick and Son, 498*l.*; Gammon, 495*l.* The quantities were supplied.

ARCHITECTURAL ASSOCIATION.—At the meeting held June 24th, the following gentlemen were elected as Officers for the Session 1853-54. PRESIDENT—Mr. James Edmeston. VICE-PRESIDENT—Mr. J. K. Colling. COMMITTEE—Messrs. Arthur Allom, Alfred Bailey, B. J. Benwell, Robert Burt, Charles Hayward, Thomas Hill, V. T. Horder, Joseph James, George Truefitt, J. Drayton Wyatt. TREASURER—Mr. Charles Gray. AUDITORS—Mr. J. W. Worthington, Mr. Samuel Hewitt. HONORARY SECRETARIES—Mr. Arthur Cates, Mr. Arthur Billing.

TENDERS

For the construction of a pier at the Adelphi, for the Steam Gondola Company. Mr. H. H. Russell, engineer.

Hebert and Co.	£1,600
Wade, Lynn, and Parker	1,435
Jas. Chapman	1,395
Weaver and Oldham	1,355

For making roads and pipe draining on the Conservative Land Society's Estate, Ealing. Drainage at a schedule of prices. None accepted. Plans to be altered.

James Ellis (drainage included)	£3,200
J. H. Brown (drainage included)	2,600
Morton and Faithful (without drainage and curb)	1,700
John Coker (without drainage and curb)	1,580
Joseph Lockwood (without drainage and curb)	1,350
Joseph Lockwood (if gravel on estate be used)	1,149
E. Murray (without drainage, but with curb)	1,074

For rebuilding Nos. 60 and 61, Fenchurch-street. Messrs. Hambley and Cooper, architects. Quantities supplied.

Timewell	£2,720
Messrs. Piper	2,636
Grimsdell	2,525
Messrs. Brass	2,467
Messrs. Ashley and Horner	2,396
Prichard	2,367
R. Lawrence	2,359

For building a dwelling-house and offices in Cow-cross-street, West Smithfield. Mr. George Perry, architect. Quantities supplied.

Locke and Nesham	£1,863
Mansfield and Sons	1,805
Jay	1,770
Freeman	1,755

For the erection of a rectory-house and offices at Aythorpe, Roding, Essex. Mr. G. E. Pritchett, architect.

Lawrance, Braughin	£1,621
Gray, Sawbridgeworth	1,350

TO CORRESPONDENTS.

"*Stain.*"—A correspondent asks for "a stain for soft woods that will stand the weather out of doors."

"*Bakers' Ovens.*"—A correspondent asks "to be informed of the most economical mode of building bakers' ovens, both as regards the first cost, and the saving of fuel in the heating; the last question being the most important."

"J. G. B." "R. E." "R. K." "Subscriber" (chapel at Torquay has been already noticed), "Mr. J." "N. and F." "Reader" power of stopping it depends on special circumstances. Take advice), "H. W." "G. W." "O. H." "S. P." "W. F. C." (if he had been less stupid, he would have been less impertinent; he would not have appropriated a reply given to another inquirer), "A. S." (shall have attention), "W. T." "J. S. P." "W. C." "W. F. P." "J. F. W." "J. H. F." "F. S." (we do not recommend), "J. H." "A. G." "R. G. W." "W. T. M." (not our custom), "A. W. H." "A. C." "W. L. J." "A Correspondent," "R. S." (we cannot inform him).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

TO SURVEYORS AND OTHERS.

THE Tunstall Commissioners are in want of a competent person to fill the several offices of SURVEYOR or HIGHWAYS of the township, COLLECTOR of RATES, INSPECTOR of MARKET, and NUISANCES. The party applying must be well acquainted with road making, surveying, and building; will have to devote his whole time to the several duties which will devolve upon him; and must be prepared to enter into a bond, with sufficient surety, duly to account for all moneys which may come into his hands. Persons desirous of applying for the above appointment must send in to me testimonials, with the amount of the salary they will require, under seal, endorsed, "Tender for Surveyor," on or before 1st day of AUGUST next. Any further information may be had on applying to

THOMAS LLEWELLYN, Clerk to the Commissioners.
Tunstall, Staffordshire, 23rd June, 1853.

CARDIFF LOCAL BOARD of HEALTH.

WANTED, an ASSISTANT SURVEYOR and INSPECTOR of NUISANCES. Salary, 70*l.* per annum.—Applications and testimonials to be forwarded to the undersigned on or before the 21st instant. By order of the Board,

Cardiff, 9th July, 1853. T. WATKINS, Clerk.

FOREMAN CARPENTER WANTED.—The Melbourne and Colonial House and Investment Company require the immediate services of an active and intelligent FOREMAN CARPENTER accustomed to the construction of houses for export, and with a knowledge of drawing.—Application to be made, by letter only, with references, at the Offices of the Company. A. KINTREA, Managing Director.

13, Gresham-street, July 16, 1853.

ENGINEERING PUPIL.—The Town Surveyor of Bangor has a VACANCY for an ARTICLED PUPIL.—For further information address to The Town Surveyor, Bangor, North Wales.

TO DESIGNERS.

REQUIRED, a PRACTICAL DRAUGHTSMAN and DESIGNER, for an extensive cabinet and upholstery business in the country. Address, naming where employed, and terms expected, Mr. EDWARD WEBB, Copenhagen-street, Worcester.

TO BUILDERS' CLERKS.

WANTED, a respectable Young Man, thoroughly conversant with the work of a Builder's office. He must be quick at figures, and able to write a good and expeditious hand.—Apply, stating how previously engaged, age, and salary expected, to Y. Z. Messrs. Waterlow and Sons, London-wall.

TO FOREMEN OF BRICK AND DRAIN PIPE YARDS.

WANTED immediately, a thorough, practical MAN (none other need apply), who understands the management of men, and the best methods of making, dressing, glazing, and burning, such goods as are made in a side-yard, viz. bricks, ridge crease, oven tiles, border tiles, chimney pots, and various other goods.—Apply, by letter, stating particulars, age, and salary required, G. H. C. Post-office, Weymouth.

TO ASSISTANT SURVEYORS.

WANTED immediately, in the neighbourhood of London, an experienced SURVEYOR, qualified to measure and plot on a large scale, where the greatest accuracy is requisite.—Apply, between the hours of ONE and FIVE, p.m. on MONDAY, the 18th inst. at the Offices of Mr. FUNNESS, 14, Monument Chambers, Fish-street-hill, City.

TO WOOD AND STONE CARVERS.

WANTED, two or three hands in the above branches, thoroughly conversant with the Decorated Gothic style.—Applications, addressed to Messrs BROODBENT and HAWLEY, Leicester, with first-class references, will meet with attention.

WANTED, in Manchester, TWO STONE CARVERS; those who have been accustomed to Gothic work will be preferred.—Apply to T. R. WILLIAMS, Sculptor, Lombard-street, Lower Mosley-street, Manchester.

WANTED, in a Contractor's Office, a middle-aged Gentleman, thoroughly competent to take out Quantities, make Finished and Working Drawings, see to the carrying out of Contracts, and, in fact, to relieve the Principal in every possible way.—Apply by letter to J. W. care of Mr. Bright Stationer, Gracechurch-street.

WANTED, by a Young Man, constant EMPLOYMENT in a PLUMBER'S, PAINTER'S, and GLAZIER'S SHOP. He has been constantly used to the jobbing trade in the City.—Address, A. B. C. 3, Salisbury-court, Fleet-street.

TO BUILDERS.

WANTED, a SITUATION as JUNIOR CLERK or TIME-KEEPER, by a Youth aged 18.—Address, B. X. Office of "The Builder," 1, York-street, Covent-garden.

EMPLOYMENT wanted by a Young Man as CARPENTER and JOINER on a gentleman's estate or in any large establishment, if constant. Writes a good hand; can have twelve years' unexceptionable character; wages not so much an object as permanency.—Address, post-paid, O. S. P. 139, York-road, Lambeth, London.

A YOUNG GENTLEMAN, who has been for some time with a Surveyor and Engineer, and who has acquired great proficiency in his art, wishes to place himself for further IMPROVEMENT in the Office of an Engineer and Surveyor of extensive practice.—For particulars, apply to Mr. R. W. GEM, Jun. Solicitor, Birmingham.

TO BUILDERS.

A YOUNG MAN, who has had considerable practice in the bricklaying and plastering, wishes to ARTICLE himself, for Two or Three Years, to a BUILDER. Wages not so much an object as to perfect himself. No objection to town or country.—Address to G. P. 2, William-street, Hampstead-road.

WANTED, a SITUATION as FOREMAN or CLERK of the WORKS, by a person fully competent in every respect, as he has had great experience in the building trade during the twelve years he has been in town. N.B.—Good reference given, if required.—Address, A. B. Office of "The Builder," 1, York-street, Covent Garden.

THE Parents of a respectable Youth, who writes a good hand, and has been two years in a mason's shop, wishes to APPRENTICE him to a respectable master, to learn the art of a MASON, where he will be treated as one of the family.—Address to A. B. 21, Mount-street, Grosvenor-square.

TO BUILDERS AND OTHERS

TWO PLASTERERS, fully acquainted with the above trade, and quite conversant in all cements, wish to TAKE WORK, either in town or country. Good references, if required.—Address, A. B. 40, Henry-street, Pentonville.

AS CLERK OF WORKS, OR SHOP FOREMAN.

A YOUNG MAN (aged 26 years), a Carpenter and Joiner, who thoroughly understands his business, is desirous of obtaining a SITUATION as above. Can keep the books if required. Satisfactory references can be given.—Address, L. J. 37, High-street, Marylebone.

TO CARPENTERS AND BUILDERS.

WANTED, to APPRENTICE a respectable Youth, aged 15, to the Business of a CARPENTER. Has been twelve months at the trade. In-door preferred.—Address to S. S. 10, Vincent-street, Westminster.

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

A RESPECTABLE PERSON, aged 31 years, wishes for a RE-ENGAGEMENT in either of the above offices. He is a good draughtsman, can take out quantities, measure up work, superintend, and perform all the duties usually required. The highest references can be given.—Apply, by letter, to W. B. 20, Cadogan-street, Chelsea.—P.S. Would not object to partial employ.

TO MASONS AND OTHERS.

WANTED, by a highly respectable Young Man, a SITUATION as FOREMAN, or otherwise. Is a good architectural and monumental carver; can cut letters well, and would not object to filling up his time in masonry; can keep books, is a good accountant, and can measure off work with accuracy. The highest references can be given as to ability, steadiness, &c.—Address, post-paid, X. Y. 9, Hope-street, Hackney-road.

WANTED, a SITUATION as SHOP FOREMAN of Carpenters, or the general Management of Buildings, having had great experience in the same. Can make out working drawings, and take out quantities. Unexceptionable reference to character and ability. No objection to a little distance from London.—Address A. B. No. 18, London-street, Fitzroy-square.

TO BUILDERS AND CONTRACTORS.

A COMPETENT BUILDER'S CLERK is open to an ENGAGEMENT. Leaves his present employment on the 16th inst.—Address, W. B. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS

THE Friends of a respectable Youth wish to APPRENTICE him to the above business. A moderate premium will be given.—Address, A. C. care of Rixon Arnold, 29, Poultry.

AN ARCHITECT and SURVEYOR, with a capital of from 1,000l. to 2,000l. at immediate command, wishes to PURCHASE a SHARE of PRACTICE in a well-established office in the above profession, or in that of an Auctioneer and Estate Agent, with a view of ultimately securing the whole practice. None but principals treated with.—Address, G. W. E. 88, High-street, Worcester.

TO ARCHITECTS AND OTHERS.

MR. EDWARD L. PARAIRE is desirous of Meeting Gentlemen who require COLOURED ARCHITECTURAL DRAWINGS. External, Internal, Isometrical Perspectives got up; outlines of same neatly coloured, with background, on terms that will insure approval. Temporary assistance given in getting up Plans, Elevations, Sections, Detail, and Working Drawings.—Mr. E. L. P. makes a consideration in his charge where competition drawings prove unsuccessful.
Address, 8, Rathbone-place

BUILDING LAND TO BE LET, for Four-roomed Houses, for Ninety-nine years, direct from the free holder, a short distance from Nine Elms, in the best part of the Wandsworth-road. Ground rent moderate. 60l. clear per house will be advanced to respectable builders for a limited time, and without interest. No charge for leases or mortgages. The roads and drains are made.—Apply, personally, to Mr. PARSONS, Seaton Lodge (opposite Devonshire-road), Wandsworth-road.

FREEHOLD BUILDING LAND, Richmond-hill, adjoining the park, TO BE LET, on Lease for ninety-nine years, in suitable plots, for the erection of villas. Also, a few Plots on the London-road, near the railway.—Apply to Mr. BREWER, Architect and Surveyor; or Mr. J. JONES, Waterloo House, Richmond, Surrey.

BUILDING LAND to LET, at

CROYDON,	SLOUGH,
NORWOOD,	EDMONTON,
BRIXTON,	NORTHUMBERLAND PARK,
BLACKHEATH,	TOTTENHAM, and HIGH
GREENWICH,	STREET,
DEPTFORD,	ILFORD,
CAMBERWELL,	BARNES,
KINGSTON,	COLNEY HATCH.
WINDSOR,	

Advances made on most, and bricks are on some of the above estates, which are nearly all adjoining railway stations. Covenants are apportioned.—Apply to Mr. WILLIAM WALLEN, Jun. 25, Laurence-pountney-lane, Cannon-street, City.

REIGATE.—TO BE LET or SOLD, FREEHOLD BUILDING LAND, immediately contiguous to the railway station and town, a singularly favoured and picturesque locality, within one hour's journey of the metropolis, affording to the citizen and sportsman a most desirable site for a country residence, fox and stag hounds being kennelled in the neighbourhood. Respectable builders will meet with most liberal treatment.—For plans and further particulars apply to Messrs. PAGE and RELF, Architects and Surveyors, Reigate and Dorking.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 23, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Countinghouse on each estate.

BUILDING GROUND.—CRYSTAL PALACE, NORWOOD.—TO BE LET on LEASE, on the road from Anerley Station to the Crystal Palace, and opposite the ornamental grounds of the above building. The property consists of upwards of 30 acres, with a beautifully undulated surface, and thickly wooded, commanding extensive views in Surrey and Kent. It is accessible by good roads and railway, being within five minutes' walk of the Anerley Station, and one minute's walk of the station of the proposed Crystal Palace and West End Railway. There is good brick earth over the whole of the ground, and permission to make bricks would be granted to any one taking a considerable portion. Also about nine acres of very eligible Freehold Land, within three miles of St. Paul's, to be Let or Sold.—For plans and particulars, apply to Messrs. WEHNERT and ASHDOWN, Architects, 49, Charing-cross.

BUILDING GROUND.—TO BE LET, several PLOTS of LAND, for erecting villas, most eligibly situated upon high ground. Term, ninety-nine years.—For plans and particulars apply to Mr. A. BOOTH, 1, Carlton-hill Villas, Camden road, opposite the Brecknock Arms.

TO BUILDERS AND OTHERS.

FREEHOLD SITES for BUILDING PURPOSES.—TO BE LET, on Lease for ninety-nine years, SEVERAL ACRES of well timbered, park-like GROUND, admirably adapted for building purposes, situate close to the Maidenhead Station, and about one mile from the town of Maidenhead, on a cheerful eminence, with a fine southern aspect, commanding a delightful view of Windsor Castle and the surrounding country. The roads are excellent, the soil is gravelly, and the neighbourhood is proverbial for its remarkable salubrity.—Apply, by letter, to C. W. Post office. Maidenhead, Berks.

WIMBLEDON, NORWOOD, STRATFORD, POPLAR, and WEST HAM.—FREEHOLD BUILDING LAND.

TO BE SOLD, about Six Acres, at WIMBLEDON, suitable for family residences, and commanding very extensive views.

TO BE LET, for 999 years, eligible sites for small Villas, within two minutes' walk of the NORWOOD Railway Station.

TO BE LET, for 100 years, several plots near the Eastern Counties workshops, at STRATFORD, suited for small houses.

TO BE LET, for 80 years, a small plot eligibly situate in Stainsby-road, EAST INDIA-ROAD, suitable for a pair of semi-detached villas.

TO BE LET, for 999 years, several very eligible plots in the immediate vicinity of the VICTORIA DOCKS, Plaistow. Money advanced, if required

Apply to Mr. WILLIAM ELLISON, Architect and Surveyor, 19, Stainsby road, Limehouse.

CHINGFORD FLOUR MILLS, eight miles from London, available for the purposes of paper manufactory, blanket manufactory, or dye-works, with manager's residence, TOLLS, and Right of Fishery in the River LEE, TO BE LET on Lease, for five years, with immediate possession. The above desirable property comprises—the Flour Mills, containing six pairs of stones, with dressing tackle in proportion, situate on the river Lee, within 200 yards of the navigation, and possessing the command of the whole stream, with a fall of 6 feet, and a water power more than adequate to the requirements of the machinery, which is modern, and together with the fixtures belong to the landlords. The commodious Residence, conveniently situated with reference to the mills, being detached, and adapted for the occupation of a respectable family. The Tolls accruing from the road leading from Edmonton to Chingford, which, upon an average of years, have amounted to 190l. per annum; and the Fishery in the river Lee, and streams between the Lee Piles and Huxley's Corner, a distance of nearly two miles, abounding with fish to great variety. The above mills might, at a very trifling expense, be converted into paper or blanket mills, or dye-works, for which, in addition to the flour trade, they are eminently qualified, through the power being both abundant and pure.—May be viewed on application to the tenant, and further particulars may be obtained of JNO. MARCHANT, Esq. River Lee Office, Hertford, and 3, Great George-street, Westminster; and of Messrs. CRAWTER and DEATH, Surveyors and Estate Agents, Cheshunt, Herts.

LAND TO LET for BUILDING VILLAS on Lord Holland's Estate, at Hammersmith.—For plans and particulars apply to Mr. FREDK. ANDERSON, 12, Pall Mall East. Advances made to respectable parties.

BUILDING GROUND TO BE LET, on advantageous terms, for 99 years, in the Gloucester and Queen's-road, at the footjof Primrose-hill, and three minutes' walk from the Regent's park and the City station. There are five frontages for third-rate eight-roomed houses, and four corners for shops. It is the only spot left for building in that locality, where houses of that description are very much in request, and find tenants or purchasers immediately on their completion.—Apply to Mr. ELLOART, 9, Harrington-square.

COLNEY HATCH.—TO BE LET, on Building Leases for long terms, in this greatly improving neighbourhood, at moderate ground-rents, LAND for SIXES of NINETY PAIRS of VILLAS, situate within 300 yards of the Colney Hatch and Southgate Station of the Great Northern Railway. First-rate bricks can be had on the ground at 40s. the thousand. The land may be viewed on application at the Railway Hotel, and plans and particulars may be had on application to Messrs. PAGDEN and HODGKINSON, Solicitors, 71, Mark-lane, City.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money advanced, and bricks may be had if required.—For particulars apply to Mr. C. HAMBRIDGE, 73, Coleman-street, City.

FACTORY or WAREHOUSE.—TO BE LET, on Lease, a PLOT of GROUND, in the rear of Westminster road (near the Obelisk), having a frontage of 85 feet by a depth of 113 feet, suitable for the erection of a factory or warehouse.—Apply to PATRICK and SON, Builders, Belvidere-road, Lambeth.

POTTERY.—TO BE LET, in the South of England, a POTTERY, near a seaport town, where there is a railway at the station. Clay on the premises. Satisfactory references as to respectability and ability to carry on such a concern required.—Full particulars may be obtained by applying to W. G. 107, Holborn-hill

THE CONSERVATIVE LAND SOCIETY.

At the Public Drawing on Saturday, the 9th of July, at the Offices, 33, Norfolk-street, Strand, amongst all the uncompleted shareholders not previously entitled by drawing or by seniority, the following numbers for priority of choice on the Society's estates were drawn:—1299, 2496, 2092, 2803, 3978, 4856, 4614, 1234, 1245, 1247, 2806, 2809, 2816, 4048, 4868, 4642, 4645, 4647, 4647, 1493, 1816, 1848, 4874, 191, 1902, 1941, 1142, 744, 4718, 1066, 3180, 2096, 2141, 2168, 2170, 4971, 4972, 4974, 894, 3744, 1471, 3814, 3815, 2095, 3283, 3049, 2831, 4090, 2741, 2872, 1339, 1963, 4066, 4067, 2214, 4994, 3285, 977, 4838, 4837, 4838.

Shares Nos. 2884 and 4849 were also drawn, but the holders thereof being in arrear, lost the benefit of this drawing. The Ninth Public Drawing will take place at the Offices on Saturday, the 13th of August, and all who become members on or before that day will have the advantage of the drawing. Shares, 50l. Monthly payments, 8s. Applications for shares and prospectuses to be addressed to CHARLES LEWIS GRUNDISEN, Secretary.

THE GREAT BRITAIN FREEHOLD LAND SOCIETY.
Chief Offices, 209, Piccadilly.

The Hon. Robert Bourke.	John Williams, esq.
	E. H. Sirr, esq.
BANKERS.	
Sir Charles Price, bart. Marryatt, and Co. 3, King William-street, City.	

Shares, 40l. each. Entrance-fee, 1s. per share. Monthly subscription, 4s. Transfer-fee, 1s. per share.

A most eligible estate of thirty-five acres of first-class building-land, situate at Hendon, Middlesex, is now ready for distribution among the members of this Society.

Persons paying up their shares may have possession of their land immediately

The next ballot will take place at the London Tavern, on Monday, July 18, at half-past Eight o'clock, and the future ballots every fortnight. CHARLES TIDBURY, Sec.

FREEHOLD.—TO BRICKMAKERS, FREEHOLD LAND SOCIETIES, CONTRACTORS, BUILDERS, &c.

TO BE SOLD, by PRIVATE CONTRACT, a FREEHOLD BRICKFIELD, containing about 4½ acres, situate in the parish of Norwood, Middlesex. The field has been recently examined by a competent brickmaker, who reports that about 2,000,000 of good quality stock bricks can be made from the soil, and that Malm brick-earth of superior quality will be found. The bottom stratum consists of gravel and sand. The transit is easy, the field being about half a mile from the Paddington Canal, and from the Southall Railway Station, facing the public road from Southall to Northhyde.—Apply, by letter or personally, to Mr. W. BYERS, at Messrs. Branscombe and Co.'s, 84, Pall-mall.

SALES BY AUCTION.

TO BUILDERS, FREEHOLD LAND SOCIETIES, AND OTHERS.—CHESHUNT.

MR. DEBENHAM is instructed to SELL, or LET, on Building Leases, a small plot of FREEHOLD LAND, a few minutes' distance from the station, possessing a valuable frontage to the Prospect-road, commanding extensive views, and highly eligible for the erection of cottages or villas, which are in great request in the locality. Being a corner plot, the site would also be very desirable for a public house or chapel.—Apply at his Auction and Estate Offices, 80, Cheapside.

TURNHAM-GREEN.—Building Materials of Three Cottages, to clear the site for the new buildings to be erected for the Militia Staff.

MR. GOMME will SELL by AUCTION, by order of the Magistrates, on MONDAY next, JULY 18, at TWELVE for ONE, in lots, to be taken down and carried away by the purchasers, all the sound BUILDING MATERIALS and internal fittings of THREE COTTAGES, with the sheds and out-buildings, situate near the Barley Mow Public-house, Turnham-green, comprising plain and panelled roofs, sound stock brickwork, lead gutters and pumps, oak and fir timbers, girders, floors, joists, partitions, wainscoting, doors, sashes, mantles, marble and stone chimneypieces, stone paving and coping, about 200 feet of close-boarded fencing, iron guttering, road sand, and a quantity of general materials.—To be viewed three days before the sale, and catalogues had of F. H. POWNALL, Esq. Architect, 14, Whitehall-place; of Mr. GEORGE STIBBARD, on the Premises, of Mr. JAMES GOMME, Shepherd's-bush; and of the Auctioneer and Builder, Broadway, Hammersmith.

Freehold Building Land, Gravesend and Northfleet.

MR. H. MORRIS will SELL by AUCTION, at the MART, on TUESDAY, JULY 26, at ONE, in three lots, the most valuable BUILDING SITE now remaining uncovered at Gravesend. It adjoins the boundary of the railway station, with a frontage of about 325 feet, opposite to Woodville-terrace, running through to the road leading to the cemetery, to Perry-street, and the new church on the London-road, through which two handsome streets may be formed, giving a building frontage of upwards of 700 feet. The contents are nearly about six acres and three quarters, now cultivated as market garden. A Plot of eligible Building Land adjoining the above and the grounds of Charles Spencer, esq., and fronting to Arthur-street, containing about one acre and a half, and by continuing the street through the centre 700 feet of frontage will be obtained, from which a nearer communication will be given to the town and railway station at the north end. An Enclosure of Arable Land, containing 5a. 3r. 24p. situate in the parish of Northfleet, adjoining the land of Thomas Culver, esq. and the old turnpike road, to which it has an eligible building frontage of about 260 feet, now in the occupation of Mr. Philips. Particulars may be had, ten days prior to the sale, at the Mart; at the New Inn, Gravesend; of Mr. ACKWORTH, Solicitor, Chester; and of Mr. H. MORRIS, Surveyor and Land Agent, Maid-tone.

Freeholds in Southwark, BY AUCTION at GARRAWAY'S on MONDAY, JULY 18th, at TWELVE o'clock.

MR. ALFRED GWILT will SELL as above, by order of the Mortgagee, under a power of Sale, SEVEN TENEMENTS, Nos. 19 to 32, King's-court, Suffolk-street, producing 67l. 12s. per annum. The property is seldom unlet, as there is great demand for this class of houses in this neighbourhood. The outgoings are insignificant.—May be viewed, particulars to be had of the Auctioneer, 7, Union-street, Southwark; and of P. A. BURRELL, Esq. White Hart-court, Lombard-street, City.

Estates and Building Land.

MR. W. A. OAKLEY, 8, Regent-street, has FOR SALE the following ESTATES:—Nearly 1,100 acres of capital Land on the Great Northern Line, on most advantageous terms to the purchaser, price 32,000 guineas, or 4 per cent. will be given as interest for one year. Gloucestershire, 310 acres; price 11,300l. Somersetshire, 180 acres; price 10,300l. Valuable Building Land upon the Cheshire side of the Mersey; price 5,000l. Plans seen at the Estate Offices, 8, Regent-street.

FOREST-HILL, KENT. Freehold Houses and Building Land.

MR. W. A. OAKLEY begs to announce he has received instructions to SELL by AUCTION, at the MART, on MONDAY, JULY 25, at TWELVE, TWO FREEHOLD and substantially-erected semi-detached HOUSES, with gardens. Also Five Plots of Building Land, situate in the Southroad, West Kent-park, Forest-hill, five minutes' walk of Forest-hill Station, and about two miles from the Crystal Palace.—Particulars of H. J. GODDEN, Esq. Solicitor, 6, Gray's-inn-place; at the Mart; and at Mr. W. A. OAKLEY'S Offices, 8, Regent-street, Waterloo-place.

MR. HARCOURT QUINCEY'S PATENT CONVEX REVOLVING IRON SHUTTER.

BUNNETT AND CO. ENGINEERS, FOUNDERS, &c.

ORIGINAL PATENTEES OF REVOLVING IRON SHUTTERS,

NO. 26, LOMBARD STREET, LONDON; AND DEPTFORD, KENT;

Respectfully inform the Architectural Profession, Builders, and the public that they are now the only Licensees of the above Patent; the Licence granted to Mr. PATRICK CLARK having entirely ceased, and an injunction having been obtained against him by the Patentee, to restrain him from making, using, exposing, or vending the Shutters described in Mr. QUINCEY'S Patent. In 1850 Mr. BUNNETT became the Licensee of the Patent Convex Shutter for the sole purpose of enabling him to secure and bring before the public, his

"NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER,"

WHICH OBTAINED THE PRIZE MEDAL IN THE GREAT EXHIBITION OF 1851.

In this Shutter, the valuable points of the Convex Shutter are combined with all the improvements suggested by long practical experience in the very extensive use of BUNNETT'S Original Patent. The greatly increased demand, with additions to, and improvements in, their extensive plant and machinery, command of the best markets for material, and employment of experienced workmen, enable B. and Co. to supply this very superior Shutter at a price that will effectually supersede any of the inferior expedients now put forth.

BUNNETT and Co. respectfully caution parties contemplating the adoption of Revolving Iron Shutters, against being misled by fallacious statements in advertisements and otherwise, and recommend that direct inquiries should always be made of those who have them in use. The best proof for the necessity of this exists in the fact, that BUNNETT and CO.'s Revolving Iron Shutters have been in use in many of the first establishments (to whom reference can be made) for fifteen or sixteen years, and are now perfectly sound and good, while those of other makers, which have not been in use more than one-third of that time, are falling to pieces, and BUNNETT and CO. are repeatedly called in to repair and put them in working order, and in some instances to replace them altogether with their NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER.

REVOLVING WOOD SHUTTERS

Of a superior description, fitted with metallic hinges, and adapted to work in any required direction.

BUNNETT and CO. are also the Original Patentees and Manufacturers of

METALLIC SASH-BARS AND MOULDINGS FOR SHOP-FRONTS, SKYLIGHTS, &c.

and Patentees of

SELF-ACTING DOUBLY-TRAPPED WATER-CLOSETS, IMPROVED CLOSETS for SHIPPING, EFFLUVIA-TRAPS, &c.

PATENT VENTILATING FIRE-PROOF IRON DOORS, IMPROVED GLASS LOUVRE AND SLIDE VENTILATORS.

IMPROVED HOISTING AND LOWERING MACHINERY BY STEAM OR HAND POWER,

Unequalled for safety and convenience, as already erected by BUNNETT and CO. in many of the principal banks, warehouses, and hospitals in London and elsewhere.

POWERFUL AND COMPACT STEAM-ENGINES, SAWING, PLANING, MOULDING-CUTTING, AND OTHER MACHINERY, AND IMPROVED JOINERS' BENCH AND FLOORING CRAMPS, &c.

All works are guaranteed of the very best description, and Architects may depend on their designs being faithfully carried out. They are respectfully requested, when intending to adopt any of BUNNETT and CO.'s Works, to see that the name is properly inserted in the specification, much inconvenience having occasionally occurred from the omission.

ESTIMATES, WITH ALL NECESSARY INFORMATION, EXPLANATORY AND DETAIL DRAWINGS PROMPTLY FURNISHED.

By Her Majesty's Royal Letters Patent.

BRICKS MANUFACTURED BY

BEART'S PATENT BRICK COMPANY,

CAN NOW BE PURCHASED AT THEIR

LONDON DEPOT,

GREAT NORTHERN RAILWAY GOODS STATION, KING'S-CROSS,

EITHER DELIVERED INTO CARTS OR BOATS, AT

THIRTY SHILLINGS PER THOUSAND.

BEART'S PATENT BRICK COMPANY invite the attention of ARCHITECTS, BUILDERS, and others interested in the building trade, to an inspection of these very superior Bricks. Among the advantages they possess over the ordinary make, the following may be enumerated :—

The form of the Brick and the quality of clay used ensure great strength and durability.

The perforations enable a uniform drying in the clay, ensure an efficient and thorough burning, and cause them to bed with extraordinary firmness in either mortar or cement.

Being lighter, the cost of carriage is lessened.

Their slightly absorbent property especially recommends them where DRY walls are required, and being of a

BRILLIANT WHITE COLOUR

they may be used as well for EXTERNAL FACINGS as inside work.

Samples may be obtained and Specimens of work seen by applying as above.

N.B. Delivered without additional charge at any Station on the Great Northern Railway between London and Hitchin, in quantities of not less than 3,000.

WORKS: ARLSEY, BEDFORDSHIRE.

London, 1st July, 1853.

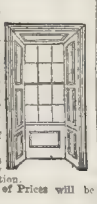
HUGHES and ROBERTS, 74, Goswell-road, SASH and DOOR MAKERS to the Trade.—Hovolo sashes, 4d. per foot; ditto with frames, 8d.; ditto, 2 in. 5d.; ditto, with frames, 10d. 1½ four-panel square door, 8d. per foot; ditto, moulded one side, 9d.; ditto, both sides, 10d. P.S. Estimates given in for shop fronts, &c.

NO. 18, CURSITOR-STREET,

CHANCERY-LANE

SANDS and EMERY,





Sash, Shop Front, and Door Manufacturers, beg to inform their Customers and the Public that they have removed to more extensive Premises, as above, where they have greater facilities for business, including Steam Machinery, and are enabled to furnish every description of Joiners' Work in well-seasoned Materials, and superior workmanship at the lowest scale of prices.

Glazed and Polished Goods in Wainscot and Mahogany securely packed for the country and for exportation. By inclosing a postage stamp, a full List of Prices will be returned.

DISSOLUTION of PARTNERSHIP.—HENRY PASK (late Johnson and Pask), Baker-street, Clerkenwell, Sash, Shop Front, and Door Maker to the Trade, begs to inform his customers and the public generally that he intends carrying on the business as usual, and solicits a continuance of their favours, which shall meet with his prompt attention.

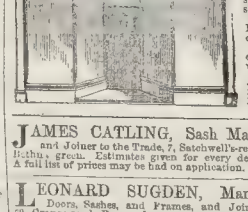




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M. late THOMAS WARD, SASH and SHOP FRONT MANUFACTURER and JOINER to the TRADE, 196, Upper Whitecross street, St. Luke's.

Established 1829.



Upwards of 300 good seasoned doors in stock.

Workmanship and Materials of the best description.

Estimates given for every description of work.

By enclosing a postage stamp, a full List of Prices will be returned.

JAMES CATLING, Sash Maker, Builder, and Joiner to the Trade, 7, Satchwell's-rents, Church-street, Bethnal-green. Estimates given for every description of work. A full list of prices may be had on application.

LEONARD SUGDEN, Manufacturer of Doors, Sashes, and Frames, and Joiner to the Trade, 20, Grange-road, Bermondsey, respectfully invites builders, and the trade in general, to an inspection of his STOCK of GOODS, from which they can always be supplied with every kind of joiners' work, which for superiority of workmanship, material, and low prices, will be sure to give the greatest satisfaction.

P.S. A full list of prices may be had on application.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, on spring rollers, 9d.; best Holland ditto, on rollers, 6d.; best ditto, 3s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 3s. Transparent blinds in great variety. Engravings, prices and discounts to builders and the trade, forwarded on application, post free.

VERY IMPORTANT TO BUILDERS AND UPHOLSTERERS.

J. T. SPOONER and CO. 17, Marquis's-court, Vineyard-yard, Drury-lane, the cheapest Window-Blind Manufacturers and General Wireworkers in London. Spring-Blinds in improved Japanned Barrels at 1s. 3d. per foot; mounted with holland on laths at 6d.; Venetians painted any colour at 7d.; Wire Blinds, best make, 1s. 6d. per foot. Shop Spring Roll-brat Reduced Prices. Wirework in all its branches. Made to order, Zinc Screens and Sieves, &c. &c.

THE LANCASHIRE INSURANCE COMPANY, Market-street, Manchester; Exchange-street, Liverpool; and No. 2, King-street, Cheapside, London.

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80 PER CENT. BONUSES, applicable as the Assured may prefer, triennially after the first five years.

Age.	20	30	40	50	60
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bonus	1 17 0	2 6 0	3 0 6	4 6 8	6 7 6
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80 PER CENT. BONUSES annually after the first three years.

The attention of Merchants, Brokers, Manchester, and other Warehousemen is particularly directed to the advantages offered by this Company, the rates being as low as those of the principal London Offices, with a return of fifty per cent. of the profits to the assured.

Insurances hitherto effected with other offices incur no expense in being transferred to this Company.

The British Assurance Company of London is now merged in the Lancashire Insurance Company, and the renewal receipts will be obtained from the agents as usual.

Prospectuses, memorandums of terms of proposal, and all other information, will be afforded at the Offices and Agencies of the Company.

JAMES B. NORTHCOTT, Secretary to the London Board.

NOTICE of DIVIDEND.

BANK of DEPOSIT.

NATIONAL ASSURANCE and INVESTMENT ASSOCIATION, 7, St. Martin's-place, Trafalgar-square, London.

The Warrants for the Half-yearly Interest, at the rate of 5 per cent. per annum, on the Investment Stock of this Association, to the 30th June, are ready for delivery, and payable daily between the hours of Eleven and Three o'clock.

Depositors residing at a distance from London, will, on application, have the Dividend Warrants, together with the proper receipts, forwarded for signature; the amount will then be paid on presentation at the Head Office in London, or transmitted through the Local Agents of the Association, Country Bankers, or in any other way, to suit the convenience of investors, so that the dividends may in all cases be received without difficulty or delay.

July 9, 1853. PETER MORRISON, Managing Director.

FRANCIS MORTON and CO.'S IMPROVED LIGHTNING CONDUCTORS, Points, Insulators, and Attachments complete.

Copper Lightning Conductors, made in one length, 7os. and 84s. per 100 feet. Glass Insulators, with galvanized iron attachments, for driving into brickwork, or screwed for roofs or woodwork, 10s. per dozen. Compound Metal Points, tipped with Platina, Electro-plated in gold, 30s. 42s. and 60s. each; Electro-plated in silver, 24s. 30s. and 33s. each, according to length.

Copper Window Sash Lines; Galvanized Wire Sash Cords, for hothouses, &c.

Wire Ropes of all kinds; Patent Wire Strand Fencing; Improved Patent Dry Hair Felt, in rolls of twenty yards long, for deadening sound, &c.; Patent Asphalted Roofing Felt, 1d. per superficial foot; ditto, for laying under slates.

FRANCIS MORTON and CO. Galvanized and Corrugated Iron Roofing Works, 10, North John-street, Liverpool; and 13, St. Mary's Gate, Manchester. Sole Agents for the Patent Fire Annihilator and the Patent Smokeless Furnaces.

MONEY on LOAN, at 3½ per Cent. per Annum.—ARNEWAY'S CHARITY.—NOTICE IS HEREBY GIVEN, that the Trustees of this Charity are enabled to lend out the Trust Moneys to poor occupiers or traders resident within the City and Liberty of Westminster, that is to say, within the parishes of St. Margaret and St. John the Evangelist, St. Anne, Soho, St. Clement Danes, St. George, Hanover-square, St. James, St. Martin-in-the-Fields, St. Mary-le-Strand, and St. Paul, Covent Garden. The amount of each loan is not to exceed 100l. is to bear interest after the rate of 3l. per cent. per annum, and is to be secured by the bond of the borrower, with two sureties. Printed Forms of Application, and all necessary information, may be obtained by applying personally, between the hours of Ten and Three o'clock in the day, at the office of the Clerk and Solicitor to the Trustees, No. 14, Great Queen-street, St. James's Park.

By order, EDWARD S. STEPHENSON
Clerk and Solicitor to the Trustees.

NOTE.—The Trustees meet on the second Wednesday in every month, to consider such applications for loans as have been sent in one clear week at the least before the first day of the month.—The sureties must be unexceptionable.

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing Pens of the best quality at the following prices:—

Steel Drawing Pens, with ivory handles	4s. 6d.
do. do. brass-jointed do.	4s. 6d.
do. do. German silver do.	4s. 6d.

And every other instrument of the best workmanship equally low.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

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FOR SALE, a well-built ONE-HORSE CART.—Apply to Mr. FARMER, Carman, College-street, Camden-town.

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TO BE DISPOSED OF, an Old-established BUSINESS, returning about 600l. per annum. The premises are very commodious and in a commanding situation, at the West End of London. About 1,000l. will be required.—Apply to Messrs. FULLER and HORSEY, 56, Bulstrode-street, City.

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NOW LANDING at the above Depôt, *ex Persian* and *Omero*, from Leghorn :—
FIFTY BLOCKS of superior STATUARY, VEIN, SICILIAN, BLACK and GOLD. BIASSI, &c.
Also a cargo of superior Black Marble of all thicknesses and dimensions in the rough and slabs and 15,000 cubic feet of St. Anna's.
Apply to Mr. FRANKLIN, Proprietor of the Quarries.

Medieval Works, Memorials, Fonts, Screens, etc.
AT A VERY ECONOMICAL RATE.
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MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.
A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.
A liberal discount to the Trade.
MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.
Circulars sent on application.
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MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS THOMPSON, Agent.

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RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.
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Great Western Railway Station....	PADDINGTON.
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Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

TO CONTRACTORS, BUILDERS, AND OTHERS.
CHEESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Princes-court, Old Broad-street, London, Agent; or to Mr. J. J. TRATHAN, Manager of the Works, Liskeard, Cornwall.
Notice of the column exhibited from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue."
By Professor ANSTED.—"The quarries which have produced this noble column have not hitherto been much worked, but are capable of great extension, the magnitude of the blocks obtainable from them being almost unlimited. The granite will be seen to be of excellent quality."

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.:—Good tooled Yorkshire Paving, at 23s. per 100 feet (retail, at 4½d. per foot); thicker ditto, at 25s. per 100 feet; very superior, 44s. ditto; thick rubbed Paving, in great variety of sizes, at 53s. ditto; Harehill and Selfaced Slab, of the finest quality; thick Selfaced Paving (viz. from 2½ to 4 inches); Sinks, large or small sizes, at 1s. 8d. per foot; Steps, Sills, 12 inch, and 18 inch Coping, all at very low prices; Duchess, Countess, and other Slates; Clay and Stone Pipes, Chimney-pots, &c.—A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

THE PIMLICO SLATE-WORKS.
Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freemen's Wharf, Millbank-street, also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

TO CONTRACTORS AND OTHERS.
WILLIAM PETERS (late Poynder and Mecl'cott), 7, North Wharf, Paddington, and Wouldham Hall, Grey Stone Lime-works, on the Medway, near Rochester, begs to inform all large consumers of Grey Stone Lime, he can supply them upon the most advantageous terms, in quantities of not less than 50 or 100 cubic yards, per barge, alongside any wharf in London or elsewhere.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. H. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

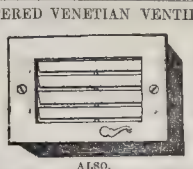
By her Majesty's Royal Letters Patent.
FREDERICK RANSOME'S PATENT.
THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.
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Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.
Specimens may be seen and further particulars obtained at the offices.
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VENTILATION.—PURE AIR.
Sheringham's Ventilator for the admission of pure air through an



EXTERNAL WALL.
With single pulley, from 6s. each; with leading pulley, from 6s. 6d.
These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 127, Union-street, Borough; and of all respectable ironmongers, builders, &c.

REGISTERED VENETIAN VENTILATOR.



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DR. ARNOTT'S VENTILATING CHIMNEY-VALVES at the following reduced prices:—

No. 1. Plain Valve	3s. 6d.
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White	1s. 8d.	per set.
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J. WARNER AND SONS, BELL FOUNDERS AND ENGINEERS,
who are prepared to contract for the supply of
CHURCH BELLS
of any weight or key, singly or in peals, of superior tone. Peals augmented, cracked bells recast, rehung, &c.



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Clock, House, Ship, Cattle, and every other description of Bells kept in stock.
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The Permanent Way Company's various Patents are now adopted to an extent of nearly 300 miles on railways in this country and abroad: the system of Permanent Way, patented by Mr. W. H. Barlow, is being adopted on one of the most important trunk lines in France, to an extent of 300 miles, resulting from a close investigation of its merits recently made by some eminent French Engineers.
The Company confines itself to the granting of Licences for the use of the different Patents, which is done on very reasonable terms.
Certificates of approval from the most eminent Engineers may be inspected at the Office of the Company, 26, Great George street, Westminster, where every information as to the cost of constructing the different systems may be obtained on application to CHARLES MAY, Esq. C.E.; or to WILLIAM HOWDEN, Secretary.

THE HIGHEST STYLE OF ARTISTIC LITHOGRAPHY WILL BE FOUND IN THE WORKS PRODUCED BY
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Landscapes, Architecture, Shipping, and Figure Subjects—Portraits direct from Life on Stone, or from Paintings, Drawings, or Daguerreotypes—Medical and Scientific Subjects, executed in a superior style peculiar to this establishment. Calotypes copied.
The large Staff of Draughtsmen required by Messrs. DAY and SON to execute the
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Offers to solicitors, engineers and surveyors, stationers and printers, throughout the country, great advantages for the rapid and economic execution of their Lithography. If required, a plan received by the morning post may be lithographed and despatched by the return post.
To meet the growing demand upon
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Messrs. DAY and SON have just erected the largest premises for the purpose in the world. In soliciting orders from Manufacturers and others for
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And every other description of Lithography and Colour Printing, Messrs. DAY and SON promise a style of work of unequalled excellence, with economy and rapidity of execution. The smallest consumers of the productions of Lithography in any part of the kingdom should apply to Messrs. DAY and SON for estimates, and it will be found, owing to the extent of this Establishment, that its manifest advantages, viz. superiority of work, great speed, and moderate charges, can be secured with satisfaction and saving to the customer.
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As perfected and practised by Messrs. DAY and SON, has assumed a position hitherto unattained for artistic excellence, rapidity of execution, and economy of production. The first and only perfect realisation of a painting in colours, "The Blue Lights" after Turner, executed at this establishment, secured for itself the designation of a Painting Print. Other examples of great merit, more particularly illustrating rapidity and economy of production, combined with artistic excellence, will be found in the three important works by
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Namely, "THE GEOMETRICAL MOSAICS OF THE MIDDLE AGES," "METAL-WORK AND ITS ARTISTIC DESIGN," and "THE INDUSTRIAL ARTS OF THE NINETEENTH CENTURY."
These works, although elaborately printed in colours and gold, have been sold at the price of uncoloured works. The last-named, consisting of 160 plates, issued in Fortnightly Parts of four plates, proves the possibility of adapting Chromolithography to Periodical Works—to book plates requiring low numbers cheaply and quickly—and to geological or other coloured maps.
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STEEL AND COPPER-PLATE PRINTING OF EVERY DESCRIPTION.
LADIES, Amateurs of Drawing, will find the reproduction by themselves of their own Sketches, by means of Lithography, a most delightful occupation for leisure time. Materials and instruction can be had of
MESSRS. DAY AND SON, LITHOGRAPHERS TO THE QUEEN,
17, Gate-street, Lincoln's-Inn-fields, London.

ROYAL ACADEMY of ARTS, TRAFALGAR-SQUARE.—LAST WEEK.—Notice is hereby given, that the EXHIBITION of the ROYAL ACADEMY will continue open until SATURDAY next, the 23rd inst. when it will finally close. Admission (every day from Eight o'clock till Seven) One Shilling; Catalogue, One Shilling.
JOHN PRESCOTT KNIGHT, R.A. Secretary.
Exhibitors are requested to send for their works on Thursday, the 28th, or Friday, the 29th inst.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS WILL CLOSE their Nineteenth Annual Exhibition on the 30th inst. Now open from Nine o'clock till dusk.—Gallery, 53, Pall-mall. Admission, One Shilling.
JAMES FAHEY, Secretary.

GALLERY of GERMAN PAINTINGS.—The FIRST ANNUAL EXHIBITION of the WORKS of MODERN GERMAN ARTISTS, is NOW OPEN daily from Ten till dusk. Admission, 1s. Lessing, Sohn, Achenbach, Hildebrandt, Leu, Schirmer, Weber, Tidemand, Gude, Burnier, Mucke, Bodom, &c. &c. have contributed to the above collection. Several new works have this week been added.—168, New Bond-street.

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ROYAL POLYTECHNIC INSTITUTION. Patron.—H.R.H. Prince ALBERT.
The Patent Needle Sewing Machine exhibited in use and explained daily at a Quarter to Three, in addition to the varied Scientific Lectures and Exhibitions.—On Tuesdays and Fridays, at Four o'clock, and every Evening, except Saturday, at Nine, the Grand Part of an Historical Incident of the "Thames," from its Source to its Estuary, by George Buckland, esq. assisted by Miss Blanche Younge, with appropriate Songs and Dissolving Scenery.
Open Mornings and Evenings. Admission, 1s.; Schools and Children under Ten years of age, half-price.

COLOSSEUM, REGENT'S PARK.—ADMISSION ONE SHILLING.—The original Panorama of LONDON BY DAY is exhibited daily from Half-past Ten till Five. The extraordinary Panorama of LONDON BY NIGHT, every evening from Seven till Ten: Music from Two till Five, and during the evening. A variety of favourite Songs by MISS A. POOLE.

CYCLORAMA, ALBANY-STREET.—LISBON and EARTHQUAKE.—This celebrated and unique moving Panorama, representing the destruction of LISBON BY EARTHQUAKE in 1755, is exhibited for a short time in all its original splendour, and by the aid of new machinery, with increased startling effects. Daily at Three; Evening at Eight o'clock.—Admission One Shilling. Children and Schools half-price to either Exhibition.

HEAL and SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post. It contains designs and prices of upwards of ONE HUNDRED different bedsteads; also of every description of bedding, blankets, and quilts. And their new ware-rooms contain an extensive assortment of bed-room furniture, furniture chintzes, damasks, and cimitties, so as to render their establishment complete for the general furnishing of bed-rooms.
HEAL and SON, Bedstead and Bedding Manufacturers, 196, Tottenham-court-road.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—
PACKED IN 100 FEET BOXES. THIRDS QUALITY.

Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.	Inches.		Inches.	Per 100 feet.
6	by	4	12s. 7d.	12	by	10	19s.	14	by	11	19s.	16½	by	12½	19s.	18	by	13	19s.	18	by	14	19s.
6½	"	4½		12½	"	10		14½	"	11½		16	"	12		18½	"	13½		18½	"	14½	
7	"	5		13	"	10		15	"	11		16½	"	12½		19	"	13		19	"	14	
7½	"	6½		13½	"	10½		15½	"	11½		17	"	12		19½	"	13½		19½	"	14½	
8	"	6		14	"	10		16	"	11		18½	"	13½		20	"	13		20	"	14	
8½	"	6½		14½	"	10½		16½	"	11½		19	"	13		20½	"	13½		20½	"	14½	
9	"	7		15	"	10		17	"	11		19½	"	13½		21	"	13		21	"	14	
9½	"	7½		15½	"	11½		17½	"	11½		20	"	13		21½	"	13½		21½	"	14½	
10	"	8	16s. 8d.	16	"	10		18	"	12		20½	"	13½		22	"	13		22	"	14	
10½	"	6½		16½	"	11		14½	"	12½		16	"	12		16	"	14		22½	"	14½	
11	"	9		17	"	10		15	"	12		16½	"	13½		16½	"	14½		23	"	14	
11½	"	9½		17½	"	10½		15½	"	12½		17	"	13		17	"	14		23½	"	14½	
12	"	9		18	"	11		16	"	13		17½	"	13½		17½	"	14½		24	"	14	
12½	"	9½		13½	"	11½																	

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BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to
T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for
RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of
ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, ribbs are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.
For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland.
N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER
Will be forwarded Gratis, on application, "post-paid," to
Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

THE LONDON and MANCHESTER PLATE-GLASS COMPANY have REMOVED to their large new warehouse, 61, BARGATES WHARF, WHITEFRIARS, FLEET STREET.—28th July, 1852.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Richly cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at moderate prices. Crystal glass for wax or gas chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, BROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration. All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD-STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new MACHINE, and, owning the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUPERFICIAL and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 86, SOHO-SQUARE.
ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

JAMES PARSONS begs to inform Architects, Builders, and the trade in general that he is enabled to supply excellent EMBOSSED GLASS from 12d. per Foot super.; White Borders, from 6d. a Foot run; Ruby or Yellow, from 1s. 6d. per Foot run; Embossed and Gilded Letters for facias, from 4d. per inch. Every other description of writing on glass equally low. Terms, cash. 20, Southampton-street, Strand.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT.—ASPDIN'S PATENT.
Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery patented by Mr. Aspdin, much improved the quality of this cement without any increase in price.
Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.
ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.
A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, MR. HENRY ROBINSON, 31, King-street, Liverpool.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.
6, South Wharf, Paddington.

PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only genuine Portland Cement can be and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. solicit the attention of their friends and the public to their superior Cement, confident that the great improvement in the manufacture of the same will recommend it for use, for effect and quality in colour, will ensure to them a continuance of that patronage with which they have so long been favoured.—Orders received at the Works, and at Great Scotland yard, Whitehall.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring. Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster; and Seel-street, Liverpool.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses. These well known hard stuccos dry quickly, and can be put down upon a few days' Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL-ROAD, KINGSLAND, BRIDGE; and at Thornhill Wharf, Caledonian Bridge; and No. 8, Wharf, Paddington.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.
Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.
ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.
SEYSSELS, PAVIORS', STOCKS, and other Bricks.
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WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and its great cementing power in which this kind of lime is held for buildings in wet and damp situations, such as wharf walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

ROMAN and OTHER CEMENTS. Manufactured by J. M. BLASHFIELD, successor to the Patentees, PARKER and WYATT, who in 1796 first introduced PARKER'S ROMAN CEMENT; also Tarras and Portland Cements, English and French Plaster, Terra Cotta Chimney Pots, Trusses, &c.
Manufactory, Mill Wall, Poplar; Depôts, Commercial-road, Lambeth; and Paddington-basin.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.
As used at St. George's Hospital, Hyde Park Corner.
JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tint d to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 800 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.
JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.
The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 23, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters, Centres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.
Machine Printing Works, Royal Mills, Wandsworth, Surrey;
Block Printing Works, 451, Oxford-street, London.

PAPER-HANGINGS.—JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper-Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and CO. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 8-9, OXFORD-STREET, where all goods can be obtained on the same terms as at the Factory.
GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 115, Whitechapel, near the Obelisk, and 500, Oxford-street.

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 22, Great Portland-street, Oxford-street, where Builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers	from 04d. per yard.
Painted Marble, Granite, and Oak Papers	from 06d. do.
Superior Dining and Drawing-room Papers	from 14d. do.
Satins and Flock	from 24d. do.

FIRE INSURANCE AGENCY.—TO BUILDERS, SURVEYORS, CLERKS OF WORKS, &c. The Directors of the Athenæum Fire Office have matured an original and important plan of Agency, which applies particularly to the classes referred to above.—Applications to be made to the Manager, HENRY SALTER, Esq. 30, Sackville-street, London.

The Builder.

SATURDAY, JULY 23, 1853.

DIRTY, dilapidated, and unwholesome dwellings destroy orderly and decent habits, degrade the character, and conduce to immorality. Bad air produces feelings of exhaustion and lowness of spirits, and these tempt to the use of stimulants—the fruitful parents of all crime. We have urged and re-urged this in many shapes: but repetition is necessary, improvement moves so slowly. The "New Lodging-house Act" is being pushed gradually yet firmly into use, and is, without doubt, effecting much good. "The sanitary policemen," as the Earl of Shaftesbury said on a recent occasion, "are looked upon by the poor as guardian angels." Admitting the general good of this measure, there is, nevertheless, one consideration which requires careful and immediate attention. While the new Act of Parliament is driving the poor from their close quarters, we say now, as we have said before, no adequate provision has been made for their reception elsewhere, and the consequence must be that rent for dwellings will be raised beyond the means of the destitute poor, *particularly those with families of children*, and they will simply remove *the overcrowding* to places not at present discovered by the police, or be compelled to seek shelter in the workhouses.

The following case shows the operations of the Act in this respect:—A widow, very poor, with three children, the eldest ten years of age, is charged 3s. 6d. a week for lodging in a house in "Short's-gardens," Drury-lane: this is an amount of weekly rent which it is totally out of the power of this woman, in her present circumstances, honestly to pay. The lodging-house-keeper says that having known the woman for some years he has, since his house was licensed, let her and the children sleep there for 3s. 6d. a week—a sum less than he ought to charge: the ordinary charge would be 4d. a night for the mother (2s. 4d. a week), and half-price for the children (3s. 6d. a week); in all 5s. 10d. This is a startling amount of rent, but the lodging-house-keeper, as he observed, since he dare not admit more than a certain number of inmates, must charge the amount allowed by law to enable him to live, and at the same time pay his rent and taxes.

Immediate and large provision of lodgings is required by the present condition of things, particularly for the very poor who have families of children.

Lodgings of a certain description are required where a man or woman with a family of children can be sheltered at a cost of from 1s. 6d. to 2s. a week. Surely the City of London should do something to supply this want. In all directions they are demolishing the dwellings which are at all likely to afford shelter to the poorest, and are driving poverty, vice, and ignorance out of the City. Yet, the "poor will not cease to be in the land," and as it is evident that those who formerly lodged, and are at the present time living, within the City must go elsewhere, it cannot be doubted that the effect of this must be to burden the surrounding parishes with the pauperism which they have turned from their own doors. We would gladly behold this demolition if other provision were made; and it is to be hoped that the Corporation of London, under these circumstances, will set an example in trying if wholesome shelter for poor families can or can not be provided, remuneratively, at the cost to which we have alluded, viz. from 1s. 6d. to 2s. a week. We do not care about the old-fashioned style of house being followed, but would wish that buildings should be erected on a strictly economical principle, dictated by the superior scientific knowledge of the present day; and we cannot but think places of this description could be reared, which, by judicious arrangements, might be made not only profitable to the builders, but at the same time to confer a great service on the whole community.

The importance of showing that suitable dwellings and other accommodations for the industrious poor can be made self-supporting, induces us to offer a few remarks on the last annual report of the "Metropolitan Association" instituted for the above purpose, particularly as we have a clear opinion that buildings erected for English working-men must not be institutions of charity. What are needed are houses, well constructed, let at a rent which will give a fair profit to the owners; and feeling strongly on this matter, we were sorry to perceive that the report of the Association in a money point of view was unsatisfactory, and that a dividend of little more than 1 per cent. had been paid to the shareholders. This, at a first glance, will damp the ardour of many warm advocates for the extension of similar buildings. We think, however, that there is no reason for despair if the position of the "Metropolitan Association" be carefully considered.

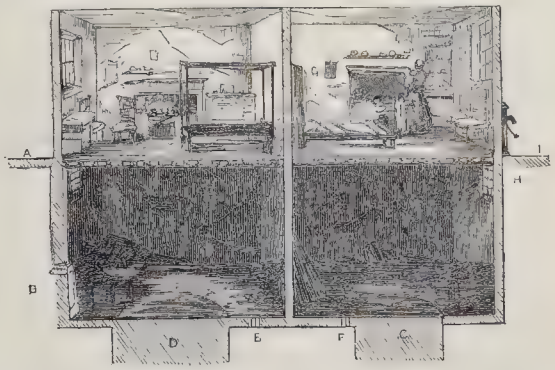
We have before given an opinion that the house erected in Spitalfields is injudiciously placed, in the midst of roomy houses, which the circumstances of the population have so reduced in rent that they return little more than the necessary current expenses. The Chambers erected for single men have proved an unsuccessful experiment. The Soho Chambers, says the report, are unlet in consequence of the badness of many of the rooms; this part of the establishment cannot be very remunerative, and we think for a sufficient reason. There cannot be the smallest doubt, however, that the building in the St. Pancras-road is paying a very large per-centage on the cost of its erection, which amounted, we believe, to 17,000*l.*

This building consists of 110 sets of rooms, the rents ranging from 4s. 6d. to 6s. 6d. a week; the rooms are seldom empty, and the average rent of each set of rooms is probably about 5s. 6d. or 6s. a week: indeed, we are assured that the rental of the St. Pancras building does not fall much short of 1,600*l.* per annum, a sum which would return more than 9 per cent. on the expended capital.

The accounts of each building of the Association should have been kept separate when putting them before the public, and the gain and loss of each fairly stated, in order that a true opinion might be arrived at as to the proper position of affairs. When the various expenses of procuring an Act of Parliament, the necessary expenses of management, the amount of capital not put to remunerative use, together with the losses on the other buildings, and which can be traced to certain causes, are considered, we think that the St. Pancras building holds out fair promise to any capitalist who, without Acts of Parliament, &c. could place similar buildings in proper localities. The report of the Society for Improving the condition of the Labouring Classes proves the same fact.

We were much shocked by the intensely ignorant condition of the children in Short's-gardens. Those whom we questioned, nine and ten years of age, could not read, and said they had "never heard of God." A dog-fight produced a scene such as we will not attempt to describe—a scene miserably sad: heads were in every window, and the dilapidated quarter seemed filled with vicious life. As the place, so the people. The yard in which the scene occurred was strewed with vegetables and other refuse; it was Saturday night, and the dust-heap was overflowing; the pavement was broken, and contained pools of unwholesome water; the whole place was filthy in the extreme.

The formation of sewers in this neighbourhood now going on is hailed with gratitude by the inhabitants. Some time ago we referred to the cesspools in use here, and we will now assist that description by a diagram which exhibits the condition of many houses in other places besides Drury-lane. The drains run in at A, B: D and G are the cesspools: the overflow is pumped away at H. C, C, are dark cellars: E, a drain connecting the two cesspools; with a grating at F. A whole volume of description would not speak so forcibly.



A supply of water in the poorer neighbourhoods on *Sundays*, particularly during the summer months, is greatly needed. At present, the water is generally turned on on Saturdays at about three o'clock in the afternoon, and no further supply is to be had until the middle of the following Monday. In hundreds of instances the water-tank is quite inadequate for the numerous families surrounding it, and many have no vessels for water in their own dwellings; the consequence is, that in most cases the supply is soon exhausted, and the people in these places are not only left without the means of washing their hands and face on the Sabbath-day, but actually have "not a drop to drink."

A little to the north of Hatton-garden and Leather-lane is a neighbourhood of the worst description, and which certainly requires some interference. Nearly opposite Hatton-garden this populous and dirty place is reached by steep descents, opposite Leather-lane, by a flight of steps. The latter brings us to the first platform, if we may so call it: here are two long rows of houses, with courts leading from them. These courts, as in fact are most of the neighbouring

houses, are occupied by the Irish and others engaged at Leather-lane market. One of them in particular we found in a shocking condition. A tank for water was placed for the convenience of the numerous inhabitants, in such a position as to cause the impurity of the water in a few hours; but on Monday, at one o'clock, there was no water in the cistern, nor had there been *a drop for the accommodation of scores of pent-up women and children since Saturday evening*. On Saturday, at three o'clock in the afternoon, the water is turned on, and, as we are told, continues to run for rather more than half an hour. The inhabitants rush out, and such of them as have any vessels contrive to fill them, after a struggle which suggests to the beholder the arrival of thirsty travellers at a spring in the desert. Many, however, have nothing which will hold a sufficient quantity of water; and even in the case of those who have, the water, after remaining in a room occupied by many persons, surrounded by impurities, must be rendered unwholesome before the Sunday morning. By that time the water has become precious. The costermongers return late on the Saturday night or early on Sunday morning, and require a supply of water to render themselves, after their dirty work, decent and comfortable on the Sunday. This, in the present state of things, is generally impossible. "I cannot be clean if I would,"—a poor young wife said to us. She was certainly not *nineteen*, but had a baby in her arms and one about two years old by her side!

When we visited the place the dust-bin was full, and the pavement strewed with vegetables and other refuse. The state of the exterior was so bad, that it was unnecessary to enter the dwellings in order to understand their condition. Here, King Fever and his friendly potentate, Cholera, may revel in all their terrors. And remember this place is in the midst of London.

Lucy's-buildings, another portion of this place, is singularly well adapted for the purposes of destroying health: continuing from the steps from the end of Leather-lane, and crossing at a steep gradient the street already alluded to, we come to three double rows of buildings, each containing twelve houses (rent, 3s. 3d. a week) of three rooms each. The lowest court is reached by nine steps: at the top of the steps is a sort of narrow back-yard, in which are conveniences, one for each two houses. Nothing can be worse than this arrangement,—but we cannot go into details. The backs of the rooms built against this bank are damp, and most unfavourable to health. In the lower court is an untrapped gully-hole, which is also most offensive: here cholera was a visitor, and fever seems to be held in terror. The water-cistern was empty on Saturday evening, and would continue so until Monday afternoon. This court, badly as it is situated, might be materially improved in condition by two things, viz. an unlimited supply of water, and the application of proper traps to the closets and gully-holes.

Pursuing this point, namely, the supply of water, we started on a voyage of examination, and in more than fifty houses, entered between the hours of two and four o'clock in the afternoon of Friday last, there was *not a drop of water!*

In Charlotte's-buildings, Gray's-inn-lane, a place swarming with people, there were not three gallons of water at six o'clock on Saturday afternoon.

For those, then, who say our general subject is too vast for them to touch, here is a simple practicable point for their operations,—a supply of water for the poor on Sunday mornings.

Many unwholesome parts of London in the fashionable west—in Mary-le-bone, in Bloomsbury, &c.—are hidden behind the large squares, and in passages leading from good streets. These little "Rookeries" are so numerous, and individually of such small extent, that our space obliges us to give only two or three examples.

In Great Coram-street, leading from Tavistock-square, close to the Russell Institution, is a narrow, squalid-looking turning, Little Coram-street, running north to Tavistock-place. A stranger visiting this street will not fail to be struck with the immense number of children, women, and others, who swarm in crowds evidently too great for the visible houses. A careful inspection shows narrow passages leading from this street to collections of small houses inhabited by very poor people. One of these courts (Coram-place) *is* 15 *feet below the surface of the street*, and is reached by a flight of steps. Having said this much, and considering the poverty of many of the inhabitants, and the ill-condition of the houses, none will wonder at bad results. Surrounded on all sides by tall buildings, and planted below the surface of the ground, it is scarcely possible for a breath of even comparatively pure air to reach the inhabitants.

In the map in "Chamberlain's London," dated 1770 (only eighty-three years ago), all this district is marked fields, the farthest houses on the north being Ormond-street, Queen-square, Southampton-place, and the British Museum. The Foundling Hospital, with the burial-ground at the back, was an isolated building.

By the way, we wonder how many persons, not living in this neighbourhood, know what is called "the Colonnade," running out of Grenville-street, Brunswick-square, parallel with Bernard-street and Guildford-street,—a row of about forty houses (about 500 feet in extent therefore), where the one-pair floor projects and is carried on a row of wooden columns, with a raised walk beneath, over the basement, in front of shops on the ground-floor, like the "Rows" in Chester? The effect is singular. We are dealing, however, with more serious matters than *appearances*.

In a narrow street leading from the south side of Clipston-street is a place very similar to the courts mentioned above. From this street two passages lead to underground courts; on one side by a flight of steps; on the other, by a steep descent. Their condition is so similar to that of the courts we have just described, that it is unnecessary to enter into particulars, except to say that there is no proper drain, and that in the court on the right-hand side is a cesspool, belonging to some of the neighbouring houses, which flows through the flag-stones of the court. Some of the women are afraid to trust their children to play, lest the covering should fall in, and they be suffocated in the receptacle.

Any one taking the trouble to inquire into this matter will not fail to be surprised at the little knowledge the persons living in these places have of their unhealthiness. In answer to the question as to the health of their family, they usually reply, "It is very good, except at times." The appearance of the children generally contradicts this statement; and if you inquire of a person who has had a large family the number living, the answer too often shows a sad amount of loss. One woman, whom we thus questioned in this court, where she had lived twenty-three years, had had thirteen children, and but three were then alive.

Since the publication of our observations on the amazing number of children, now in the streets of London, who are being educated in vice,*—forbidden from good, and prepared for a life of misery,—as we then ventured to say, Lord Shaftesbury has brought into the House of Peers a Bill to meet part of the evil. Earnestly we hope it may do so; but in the meanwhile individuals should remember how much is in their own power in their several districts, and not leave all to an Act of Parliament. Let us each

"LIVE FOR SOMETHING."

* See page 437.

THE GREAT INDUSTRIAL EXHIBITION OF 1853, IN DUBLIN.

ALTHOUGH we have in previous numbers described the Dublin Industrial Building and the Exhibition, yet as each week develops something new and interesting, we may be pardoned for again referring to the subject. The attendance of visitors averages, daily, between 8,000 and 9,000, and for some time the railways have been pouring in a stream of tourists, who, *en route* to view the natural beauties with which Ireland abounds, take advantage of the opportunity to have a peep at the "Temple of Industry" in Dublin.

The exterior of the building can scarcely yet be said to be in a complete state, for it would appear that the parties to whom the colouring of the roofs has been entrusted, are in a quandary as to what the permanent tint is to be. All the woodwork of the principal front is of a light buff colour, slightly relieved with blue and white (which by the bye is too tame for the character of the structure): the roofs have been white, but are now being coloured dark brown. How far we may be reconciled to this disposition of colours when the painting is finished, we will not now determine.

In the great or central hall, there are several eyesores which materially diminish the effect of this fine apartment. We allude to the stalls of the Colebrook Dale Company (an ornamental tent of iron, in verandah style, which is placed central or nearly so); of Messrs. Houldsworth and Co. of Manchester; Messrs. Price, Brothers, of Dublin; Mr. Forest; and many others, which in them have objects of attraction and merit, but are by no means effective in their present position. The centre plateau, designed by his royal highness Prince Albert, and executed by Messrs. R. and S. Garrard and Co. of London, is a feature of attraction. Among the other interesting works of this class, are the Emperor's Vase, and the Goodwood Cup, contributed by the Earl of Eglinton. A *jet d'eau* of cast iron, designed by Lienard, is exhibited by M. André, Paris. Messrs. Atkinson and Co. of Dublin, display some rich gold tissued and brocaded Irish poplins. An ingenious machine, turned by steam power, and manufacturing original patterns in silk figured ribbons (made by Sharp, Odell, and Jury, of Coventry), is exhibited by Messrs. Todd, Burns, and Co. Messrs. Chance, Brothers, and Co. Birmingham, have contributed, amongst other articles, a first order dioptric lighthouse apparatus, with catadioptric zones. The carvings in bog oak of the round towers and antiquities of Ireland, ancient bracelets, vessels, brooches, &c. are very numerous, and in some instances display skill and taste. A large model equatorial achromatic telescope of 12 inches clear aperture, and 20 feet focus, is exhibited by Mr. Grubb, and attracts much attention. The equestrian statue of her Majesty, by the Baron Marochetti, contributed by the committee of the Queen's statue at Glasgow, forms a principal feature. The statue of William Dargan, by J. E. Jones, before mentioned by us, is eagerly sought after by the visitors to the Exhibition. Messrs. Elkington, Mason, and Co.; Waterhouse and Co.; Achison, Bennett, and some others display several artistic specimens in electro gold and silver plate, copies of antique Irish brooches, ancient jewellery, &c. A suit of diamonds and turquois of great value, and presented by Napoleon I. to Madame sa Mère on the day of his coronation, is exhibited by Mr. Asken, of Dublin, and attracts much notice. Mr. Griffith, LL.D. Chairman of the Board of Public Works, displays some cabinets of carboniferous and silurian fossils collected in Ireland, also several geological drawings of interest. The church and turret bells, &c. by Messrs. Murphy, Sheridan, and Hodges, are admirable specimens of workmanship, and sustain the credit of the respective establishments. Messrs. Hunt and Roskell exhibit a testimonial presented to the Marquess of Tweeddale, representing an interesting incident in the reign of Kenneth III. A.D. 980. Messrs. Telford and Bevington have contributed respectively two fine organs, which add materially to the gratification of the visitors during the hours in which two professors of eminence perform on them. The stone cross of SS.

Patrick and Columba from Kells forms a great feature for antiquaries in the central hall. Casts of St. Boyne's stone cross and the great stone cross at Monasterboice, as also those of Kilcrispeen and Kilkeeran, are also exhibited. A choice collection of the marbles in which Ireland is rich is displayed by the Royal Dublin Society, in various shapes and forms. The native mining and mineral products are also well represented, and many interesting specimens of rock-salt, manganese, emery-stone, copper and silver lead ores, &c. are exhibited. We noticed to the left of the principal entrance, a colossal figure of a Madonna and Child (intended, we were told for the new chapel at Rathmines, previously described in the *Builder*), contributed by Mr. Farrell, sculptor; but we must confess it is the least artistic of that artist's works. Many well-executed specimens of tesse'ated tiles, drainage pipes, hollow bricks, &c. are displayed principally by English manufacturers. Irish flax and hemp in all their stages, from the raw material to the finished fabric, and samples prepared by the respective processes of Schenk (hot water), and of Watt (steaming), are exhibited by the Royal Society of Belfast, and many eminent manufacturers. Iron and general hardware, in great variety, are exhibited by a number of English, Irish, and Scotch houses. The sculpture is tastefully distributed in the central hall, and comprises some very interesting groups and figures, with a large collection of busts by Messrs. Bailey, Barter, Farrell, Hogan, Jones, the late T. Kirk, W. B. and J. Kirk, Moore, and many other native artists, as well as a large number from the studios of several Belgian, French, and German professors. The Zollverein contributes many handsome porcelain vases, services, &c. cast-iron statuettes and groups, ivory alto-relievos, portfolios, portmonnaies, fancy casts, artificial flowers, carvings in cork (by L. Castan, in which the principles of perspective are practically illustrated by a view of St. Peter's church, &c. at Louvain), inlaid marble, and composition tables, &c. &c. The contributions from the United States are not so numerous as might be desired; but we presume that in this respect the New York Exhibiton has proved detrimental to that at Dublin. The French department is daily assuming a more interesting appearance; the Sèvres porcelain, and the contributions of the "Vieille Montagne Zinc, Mining, Rolling, and Casting Company," consisting of a variety of small figures, inkstands, medallions, &c. &c. attract much admiration.

Some beautiful designs, embroidery, specimens of marquetrie and mosaic work, gobelins tapestry, jewellery, bronzes, &c. have been contributed by some of the first manufacturers, including those of the Imperial manufactories (of porcelain) at Sèvres, (of tapestry) at Paris and Beauvais. H. Lorin, of Paris, exhibits some figures and groups modelled in clay; and generally speaking this department is very attractive.

His Majesty the King of the Belgians displays the exquisitely wrought chimney-piece, in statuary marble, executed by A. J. Leclerq, which was in London in 1851, and the latter some works of the same class executed by himself. Ornamental tables and various articles in spa-wood, carpets of the ancient manufacture of Anderœrda, bas-reliefs, patented extracts of liqueurs, models of machines, samples of *fils de mulquinerie*, millstones, drainage-pipes, a Gothic chapel carved in wood, an optical instrument for perspective drawing, by Van Schendell, Brussels, carved furniture, antique cabinet of coins and curiosities, &c. are the leading features of the Belgian department. Holland displays an interesting collection of Japanese articles of various uses and descriptions taken from the museum at the Hague, and contributed by the Government of the Netherlands. The Hon. East-India Company exhibit a large number of articles of curiosity, consisting of stone figures in intaglio, metal figures, vases, goblets, jars, elephant and Howdah in ivory carving, musical instruments, &c. &c. The Royal Asiatic Society and Lord Gough have contributed several war-like implements, models of Buddhist and other temples, manuscripts, idols, Chinese gongs, robes, &c. and many other exhibitors, by their varied contributions, have rendered the East-Indian department peculiarly attractive. Stepping into the Archæological Hall, we find a choice collection of antique weapons, rings, trumpets, spurs, and miscellaneous articles, relics of the Celtic race, presented by the Royal Irish Academy, Shannon Commissioners, Commissioners of Public Works, and many private individuals, especially district engineers. The Cross of Cong, presented by the late J. McCullagh, LL.D. and several torques, bracelets and bangles, curious ancient harps, fonts, model of window and doorway, stone crosses, sarcophagi, &c. &c. are replete with interest.

In the Mediæval Court are a series of ecclesiastical ornaments, lecterns, candelabra, chalices, remonstrances, &c. contributed principally by Mr. Hardman, of Birmingham, with some stained glass decorations, tesselated pavements, &c. Two altars have been fitted up to display the furniture, but the collection is much smaller than was expected.

The Fine Arts Hall and Vernon Gallery present a number of pictures, consisting of the *chefs d'œuvre* of the most renowned ancient and modern masters, perhaps never equalled. The Kings of Prussia and the Belgians are principal contributors, and the spectator can compare the productions of the Dutch, Flemish, French, Italian, German, and English schools. Here is a fine study for the artist, and an exhibition of vast importance in itself. The peculiarities of the respective schools are fully illustrated in the varied specimens, and as we have on several occasions noticed, the Fine Arts Hall appears to be the rendezvous for visitors to the Exhibition.

We now look into the Furniture Court, where are exhibited many fine specimens of carving, panelling, imitations of woods and marbles, pier-tables and glasses, walnut and marquetrie loo-tables, arbutus chess and work tables, antique carved and gilt girandoles, oak chairs, Elizabethan and other book-cases, &c. &c. by Messrs. Beakey and M'Dowell, Boylan, Boswell, Byrne, Jones, Lombard, Rogers, Sparks, and many others. At the rear of the Dublin Society's house have been erected temporary continuous sheds for the display of agricultural implements, locomotives, models, carriages, stained glass, &c. Some handsome cabriolets, britzkas, broughams, &c. are exhibited, as well as the State carriage for her Majesty, made by Messrs. Hutton, of Dublin. The stained glass department is far behind hand, very few specimens worthy of special notice being exhibited. The Naval and Railway Machinery Court is interesting, and contains many ingenious models. In the Machinery Court we find a variety of looms at work, driven in motion by a 50-horse high-pressure engine, by Fairbairn and Co. Here we have a number of working-models, thrashing, bruising, planeing and other machines, patent steam-pumps, Gwynne's centrifugal pump, hydraulic presses, &c. In the southern gallery are civil engineering and architectural designs, models, &c. few in number, and in many instances devoid of interest. Messrs. Neville, Caldbeck, Geoghegan, Cuthbert, Lyons, Armstrong, Farrell, Sloane, and Eyre are among the exhibitors. Possibly the architects may be holding back their contributions for the Royal Hibernian Academy Exhibition. Musical, philosophical, and surgical instruments, wax models, cutlery, the industrial productions of poor-law unions, gaols, &c. are amply distributed through the building. The porcelain manufactures of Messrs. Kerr and Co. of Worcester, the produce of Ireland, in which material Shakspeare's "Midsummer Night's Dream" is illustrated from designs by W. B. Kirk, for a desert service,—though to our idea the production does not merit the rapturous praise with which the Dublin press teemed,—and the collection by Messrs. Gregg and Son, Westenholz, &c. &c. deserve notice.

We cannot doubt that the Dublin Industrial Exhibition will serve to develop the resources of Ireland and the capabilities of the Irish, and we advise our readers to go and see it.

COMMERCIAL TRAVELLERS' SCHOOLS, PINNER.—The first stone of the schools for orphan or necessitous children of commercial travellers, was laid on the 20th inst. at Pinner, near the station, by Mr. Masterman, in the absence of Prince Albert, who was prevented by indisposition. The architects of the building are Messrs. Lane and Ordish.

THE ARCHÆOLOGICAL INSTITUTE AT CHICHESTER.

BY ONE OF THEMSELVES.

MY DEAR BUILDER,—Why am I here? You will say that *I* ought to reply to that query. Well, then, I suppose it is to improve my general knowledge by the aid of local experience and information; and one of the great advantages of these annual gatherings ought to be the development of all the historical events in connection with the places where we meet; and, in return for the hospitality which we receive, to give our entertainers some knowledge that they did not before possess:

> For if our virtues go not forth from us,
> 'Tis all the same as if we had them not.

If this principle be correct, then I am afraid the Chichester meeting has not been a successful one, and is only illustrative of an anecdote that was told me by one of the most genial members of the Institute. George III. was walking at Windsor with Lord Chancellor Loughborough and Lord Howe, and his majesty appealed to the former on some point of law, to which Lord Loughborough replied, that he would refer, and inform his majesty on the following morning. He having departed, the king turned to Lord Howe, and said, "Lawyers know no more of law than you and I do, they only know better where to look for it."

To secure the permanence of the Institute, there must be more pre-arrangement; the committee should decide on the style and character of the papers to be read, and should exercise some judgment as to the appropriate time for their delivery. To aid my argument I would instance the opening meeting, where, after the address from the corporation giving us a welcome, we had nothing better to offer than a long and dreary paper on Earl Godwin, by Mr. Freeman, which must have created anything but a favourable impression of our studies and pursuits in the minds of the worthy corporators. Many an earnest archæologist positively expressed a wish to his neighbours that he might be allowed to pull Mr. Freeman down. Before I proceed to give a cursory account of our other proceedings I would call your attention to the necessity of the Institute appointing harbingers (would not Alderman Wilson do it?) to make arrangement for the comfort of members when there is no local committee to do this. I remember in the olden time the programme always gave the names of the hotels, and lists of private lodgings, with the agreements that had been made with regard to prices; but there was nothing of this sort here, and on my arrival I was told that the hotel was full, but they would get me a bed out; and they did, for which I had to pay five shillings a night. I should be intruding upon your space too much, or I would give you a sketch of my cupboard, for it was nothing better, to place among your engravings of "the dwellings of the poor," to aid the progress of the sanitary movement which you are so laudably advocating.

Then, again, the charges at the hotel were very extravagant, but the excuse given was, that we were only mulcted at the same rate as during "the race week." Of course this argument was unanswerable.

On Wednesday, the great feature, as it always is, was Professor Willis's discourse on the cathedral, when he displayed that eloquence and perspicuity in the illustration of the subject, for which he is distinguished. To such of your readers as are desirous of knowing more of the learned professor's remarks, I would refer them to an epitome contained in the *Brighton Herald* of the 16th inst. I would also refer them to a succinct account of the cathedral, written by Charles Crocker, and published by W. H. Mason, East-street, Chichester, the local secretary, for whose courtesy and attention I am sure every member of the Institute must be deeply grateful. At the dinner, in the afternoon, the speakers were very prolix, with the exception of the Bishop of Oxford, who came to the rescue, and enlivened the proceedings with a speech replete with great humour. In the evening we were hospitably received by the Bishop, at the palace: great preparations had been made to contribute to our enjoyment: the grounds were illuminated, but the rain, which fell most unmercifully, com-

gelled us to remain in the house, where the choir executed some glees; but as the remembrance of the Cologne singers was fresh in my mind, it is no ill compliment to say, I was not much charmed with the performance.

The principal objects of interest in the palace were, the ceiling of the dining-room, which was of oak, divided into square compartments; in the centre of each is painted a circular medallion, containing the arms of the previous bishops, with the initials repeated at the corners of the squares; and an authentic likeness of Queen Elizabeth. His lordship received us most cordially; and when I saw his venerable and benevolent face beaming with kindness among his guests, I was forcibly reminded of that enjoyable evening we had at the palace at Norwich, under the kind auspices of the prelate whose loss has been so severely felt by the Institute.

On Thursday morning we started in the rain to visit Boxgrove Priory, and here was more fully illustrated that want of information of which I have before spoken. Mr. Turner, the rector, undertook to be our guide, but we were not much enlightened thereby. He kept us a long time at the end of the south aisle, requesting our conjectures on what could be the use of two square holes which he had discovered. It was evident to every one that they were the holes used for scaffolding, and his marvelling must have caused some amusement to those who are not very enthusiastic ecclesiologists. The best thing in the church was seen only by a few who struggled up a very narrow staircase to the tower, around which is an arcade of exquisite beauty. Now, if the worthy rector were to remove the flooring, which serves no purpose but to conceal this, he would be doing good service, and adding greatly to the appearance of the church. I would here pause to do honour to the ladies who accompanied us, and who, undeterred by the rain, kept up the march through the wet grass and mud with the noblest courage, and I am sorry that the information afforded them was not more deserving the perseverance they had manifested to procure it.

We then went to Halnaker, but there was not the slightest vestige of character about the ruins,—the walls alone remaining.

From Halnaker we went to Goodwood House, which we were shown over by the housemaid. How different our reception at Alnwick! The house is as bad a specimen of a nobleman's residence as I would wish to see: it is a multangular building (in humble imitation of the penitentiary at Millbank) of flint, without stone or other dressings: there are openings, in which are placed old-fashioned sash-windows, and on the left as you enter the principal object of view is a large black board with white cross-bars painted upon it, with the hope of creating a delusion that it is a window.

From the hall we were taken through the dining-room, which is a most cold and uncomfortable "sham." The walls are composed of scagliola, and the doors and decorations are Egyptian, which, in a climate like ours, gives one a chill to think upon. There are some very nice pictures, but they are very little cared for. There are two Canalettis fast going to decay for want of attention: one has had a candle or something of that sort dropped against it, which has caused much damage. The picture that charmed me as much as any was Lely's picture of La belle Stuart, who married the first Duke of Richmond. She is in the character of Britannia, and it was to this picture we owe that impress on our copper coins. It is pleasing to contemplate this portrait, as she was virtuous in an age when virtue was neither popular nor profitable, and the picture has a charm which will not be found in the portraits of her contemporaries with which it is surrounded.

After viewing the house we were taken to the Tennis Court, which the duke was kind enough to lend us on the occasion, where we dined. The speeches after dinner were very poor, and again illustrated that want of arrangement of which I have before complained. The Earl of Chichester, who was in the chair, proposed the health of the Queen, and then called on the Bishop of Oxford to propose the health of Prince Albert. Now what could be more injudicious than this? We all know that illustrious Prince's virtues and merits so well, that is impossible at this day to enlarge upon them. The Earl should have proposed that toast himself, and then called upon the bishop to speak in connection with the object of our meeting, and his never-failing eloquence would have aroused a very different impression of our views and motives in the minds of the strangers present. As it was, he made a very brief address, and introduced the only novelty in connection with the toast, viz., the measles, with what taste I will not stay to inquire. Dr. Bruce's was the most successful essay, till towards the conclusion, when he said, "Archæology teaches, by the records of the past which we discover, what were the feelings of our most remote ancestors. We dig up an urn, and thus we find that the Roman, with feelings like our own, had dropped a tear for the loss of his dear, dear daughter. We find he has consecrated a monument to his wife—that wife with whom he never had a moment's disagreement!" This was rather too much for the ladies, who united in one universal titter. In the same evening, there was a meeting of the Historical Section, when Dr. Bruce read a quaint and amusing paper on the Bayeux Tapestry, of which he exhibited a well-executed copy. Without assenting to his conjectures, I think his paper, if compressed a little, will be a valuable addition to the important period of our history which it touches.

On Friday, the morning was dull and unpromising when we started for Petworth. Some went by way of Bignor to view the Roman pavement, but our party went by way of Duncton, which was a most agreeable road, and we arrived about an hour before those who had gone round. Here we revelled in the beauties of art. I should quite fill your paper if I were to attempt to transfer to it all the exclamations of delight and pleasure that were made as we paused before the Vandykes, the Claudes, the Holbeins, the Titians, the Giorgiones, the Cuyps, &c.; each one's enthusiasm developing itself before the master who was his greatest favourite. Nor are modern artists unrepresented: there are several Turners, exhibiting all the phases of that eccentric genius; such, for instance, as two views on the River Thames, and another "Evening," that one could scarcely believe were painted by the same hand that perpetrated "The rock limpet." But farther on we see his progress *upwards*, we suppose Mr. Ruskin would say, till we come to "Brighton Pier," where will be discovered more of the peculiarities of his later style; for instance, we have a red buoy, a green fisherman, a yellow anchor, a blue boat, &c. &c.; and in the next picture, "Sunset in Petworth Park," we have, as some one by my side said, his most "*castoresque* style," from the amount of mustard and cayenne pepper brought to bear on the subject. There are many of Leslie's Shakspeare gems, and that beautiful thing "The Rape of Europa," by Hilton. Besides the beauties of the canvas and the marble, the principal drawing-room is enriched by much exquisite wood-carving by Grinling Gibbons, and a great deal executed by Jonathan Ritson, no unworthy successor to such a master, and able even to endure comparison with him. Our guide could only tell us "that he was a dreadfully dissipated fellow." Thus do our vices adhere to us, eclipsing our fame!

From Petworth we went to Lodsworth, where we were received in a pleasant chateau-like house commanding a beautiful view, by Mr. Hesler Hollist, whose "salve," which we met on the mat at the threshold, we found not a mere empty word, for he conducted us to lunch laid out with a taste worthy of a Gunter. After partaking of the good things provided, we walked—our host being our guide—through Cowdray-park. There was a bright clear sunshine, and the country most beautiful. If some of our friends who spend their time in riding up and down the esplanade at Brighton were to do what we did—go to Petworth—and they were not charmed with art, let them afterwards come to this park, and if they have any soul alive to the beauties of nature, they will see something that will make their hearts glad; and should they then be unmoved, let them descend to the avenue of Spanish chestnuts, and let them walk up and down that mile till the spirit of the place overwhelms them with remorse. At the end of the park at Easebourne we were met by Sir Sibbald Scott, who became a guide, and who was a contrast to the one we had at Boxgrove. He had taken great pains to make himself conversant with everything touching on the history of the place, and at the Cowdray Ruins, the old hall was reproduced to our imaginations by his description. In the evening we returned to Chichester, where we were entertained by the mayor; but here the elements were our great antagonists again; for what was done at the bishop's by the rain was here done by the wind,—the lamps could not be lighted, and so we were compelled to remain in the house. I was much delighted to see that the first in the throng was our *young friend* Mr. Britton, who appeared in excellent health and spirits. We all spent a very agreeable evening, and left delighted with the courtesy and attention of the mayor, and the grace and elegance with which our hostess did the honours. On Saturday a special train conducted us to Lewes: but here I must stop, as your patience will be exhausted.

The museum was very good, and contained many objects of great interest. There was a collection of original letters belonging to the Duke of Richmond. I send you a copy of one, which was written in a very clear hand, and which, I think, is characteristic.

"My lord,—If the Swedish history which I took the liberty to send lately to your grace proved a tedious offering, this friend of mine will not be so; and if my works have ever tired your patience, I cannot make amends in a surer way than by presenting M. Tiriot to your grace. He is my old friend, as fond of England as I am, and I envy him the honour and the pleasure he shall enjoy to pay his court to the Duke and Duchess of Richmont. I must own my vanity has been so great with him as to make me *coaft (sic—covet?)* often of your protection. Pray, my lord, do not disown this my boldness: let me flatter myself that I am not quite out of your mind: let me improve this opportunity of showing your grace, that I'll be sensible all my life long of the favour you have honoured me with, and repeat to you and to my lady duchess that I am with the highest sense of respect and gratitude, my lord, your grace's most obedient humble servant, VOLTAIRE."

In the foregoing remarks there may be much that you may deem querulous, but I am sure I am only expressing the sentiments of many of the members. If we are to endure as an institute, we must only accept such invitations as we know are from those who will receive us in a cordial spirit; and in return for this, we must show ourselves worthy of their consideration; and I trust that those in authority will take the hint to correct that which is wrong, to extend and increase that which is right; by which means the enjoyment of the visitors and the visited will be reciprocal. F. S. A.

THE DECORATION OF ST. PAUL'S CATHEDRAL.

I HAVE so great a veneration for the name of Sir Christopher Wren, that I hesitated to bear any part in the discussion as to the decoration of St. Paul's Cathedral at the Royal Institute of Architects; but having since taken every opportunity of studying the subject on the spot, I would venture to offer a few suggestions; and I do so quite unknowing the opinion of the eminent architect who has the advising of the dean and chapter.

The present state of the cathedral is this:—Nearly the whole of the stonework throughout is painted or washed of an uniform white, hiding the vein of the stone, and giving it nearly the appearance of plaster.

The main feature of the whole, the beautiful dome, is now lighted by the row of large windows at its base, and by a row of very small windows in the cupola at the summit. This latter admittance of light is very trifling, and during the part of the year when most required, it is altogether stopped by a thick curtain being drawn across it to prevent, as I am told, the currents of cold air coming down.

The principal portion of the light being admitted at the base, and the part above being darkened by the paintings upon it, the aeriel effect obtained in the Pantheon, St. Peter's, and other great examples, by a mass of light

from the top, is lost, and any decoration put upon it will appear as though seen by twilight.

I have seen in Italy a church where the dome was stopped at some little distance above the springing, the ceiling being flat and painted black.

I carefully studied the effect of this, and I believe that with the present lighting, the dome of St. Paul's might, on a dark day, have a black curtain drawn across some 10 feet above the lower windows without its being at first sight perceived, or the present effect much lessened.

I do, therefore, venture to suggest that not only ought no decoration to be proceeded with now, but that it is a matter of impossibility for any one, however competent, to form a decided opinion as to the system of decoration that should eventually be adopted, unless the points previously referred to, viz. the clearing of the ground of the stone, and pouring in a flood of light from the top of the dome, be first carried out.

But after a careful study of the finest examples in Italy, I have no hesitation in expressing my conviction, that were the dome *well lighted from the top*, the first point upon which there could be no doubt whatever, about which all would be at once unanimous, would be, that Thornhill's paintings, or anything else that should serve by false perspective or by the appearance of columns and arches and distances where none really exist to break up the beautifully simple contour of the dome, should be at once and at any sacrifice got rid of.

T. H. L.

GAS-LIGHTING.

Amongst our last accumulation of materials for an article on this subject, we find a collection of matter transmitted to us on 20th ult. and "duly acknowledged" in our number of 25th, as to the unseemly persecution and disgraceful squabbling at Sheffield, by which the attempts of a Gas Consumers' Company there to lay their pipes and commence operations have been met. The only notice we feel called upon, however, to take of this communication, which professes to be sent from the old company's office, and indorsed with the name of "Edwin Unwin, Managing Director," is to remark, that we are requested to "peruse," amongst a good deal of other matter, a closely-printed pamphlet of twenty-four pages as to these squabbles, and to inform our readers in our "next publication" of the important fact which that pamphlet discloses, that the new company have *not* got a verdict in the Court of Queen's Bench; and that a statement made by "a deputation appointed to visit Sheffield" by the Burnley gas consumers, and reported in our columns of the 18th ult. to the effect that "Mr. Flintoff" was "formerly secretary to the London Great Central Gas Consumers' Company," is not correct. The pamphlet referred to was accompanied by six or seven newspaper reports, all more or less connected with the sickening squabbles alluded to; but the only farther remark we need make on the whole subject, is in explanation to our readers of the circumstance, that the gentleman just named seems to be now the secretary of the new company, to the name of which company our correspondent appends a scurrilous epithet, which, coming from such a quarter, might, we think, have been spared.——The principle, which we long since pointed out as established by the Parliamentary returns of the gas companies themselves, that to a limit not yet reached reductions of price almost always yield increase in profits, is being brought to bear upon the company at Tewkesbury, where complaints are still made as to the highness of the price, and endeavours are being made to induce the company, on the principle indicated, to repeat their previous experience in raising their dividends by lowering their prices.——"Almost every tradesman in Blackburn," says a local paper, "is now grumbling at the amount of his gas bills, especially when he knows that the people of Burnley are only paying 3s. per 1,000 feet for their gas. Several influential tradesmen in Blackburn have taken the matter up, and they are now in communication, we understand, with Mr. George Flintoff, of Sheffield, the 'gas reformer.'"——Quorndon and Mountsorrel, the one famous for its Quorn hunt, the other for its granite, are about to have gasworks erected for the supply of both. A capital of 3,000*l.* has been raised; and plans and specifications having been solicited from three engineers, those of Mr. Bower, of St. Neots, have been accepted. The works are to be completed by the end of September. Spirit like this puts to shame the inhabitants of larger villages and towns.——The following are the tenders for the construction of the Spilsby gasworks:—Mr. Mason, Alford, 1,740*l.*; Messrs. Newton and Payne, London, 1,743*l.*; Mr. Dales, Louth, 1,785*l.*; Mr. Peters, Peterborough, 1,860*l.*; Mr. Maulkinson, Spilsby, 1,880*l.*; Messrs. Booth and Waite, Boston, 1,985*l.*; Mr. Wilkinson, Grimsthorpe, near Sheffield, 1,940*l.*; Messrs. Ellis, Fleet, 2,020*l.* The tender of Mr. Mason was, with a few deductions from the retorts and other trivial alterations from the works, ultimately accepted for 1,564*l.*; the works to be completed by 30th September next.——In an appeal brought from a conviction obtained by the Berwick Gas Company against David White, for a fraudulent and surreptitious use of their gas, the judges have decided that the abstraction of gas was not simply a fraud but a *stealing* of that which was properly the property of the company; thus laying down a rule of vital importance to some hundreds of gas companies which have manifested great anxiety that the conviction should be sustained.——The Banff Gas Company have resolved to reduce the price of their gas from 10s. to 9s. per 1,000 feet.

THE IRON AND COPPER TRADES.

The quasi-rulers of prices in the iron trade have had their quarterly meetings in Staffordshire, and have felt themselves obliged to homologate the reduction previously acknowledged at the preliminary meeting, though anxious to recal it, at least to some extent. It is rather a curious circumstance, that some of those who have usually affected to receive the dicta of the "great masters" on the subject of prices as in*fall*ible oracles, while they announced a *rise* in price, are now beginning to open their eyes to the fallibility of their oracle as prices fall. "The absurdity," says one of these, "of the system which exists among the ironmasters is becoming more and more apparent, tending only to derange and mystify the trade. It is well known that iron cannot be purchased so well now by 10s. per ton as it could prior to the so-called reduction: the wonder is, that with the great intelligence known to exist amongst the manufacturers, such ineffectual attempts to control the prices of an article on which half a million of people are dependent for their daily bread, and 50,000,000*l.* of capital are employed, should be so long tolerated. It is evident that the price of iron, like every other article where large numbers are engaged, cannot be controlled by paper circulars, but only by supply and demand." We are glad to see that our efforts for years to show up this mischievous oracle are not only appreciated, as of late they have been in disinterested papers such as the *Times*, but even in class papers themselves, where the raising of prices—the great object always of that nominal authority—has usually, though erroneously, been regarded as always an unquestionable advancement of the interests of the trade.

In the copper trade, the reckless imitation of the same suicidal process of forcing up prices till they seriously damage the interests of the trade, is giving rise to a revulsion of feeling and opinion of a like order. Copper, within the last few months, rose 27*l.* 10s. a ton, and declined to the same extent "without the intervention," as now admitted, "of any alteration of circumstances to account for these violent fluctuations." The state of the market has been, and still is, most seriously affecting large interests involved in the arbitrary decisions of "the Smelters' Association," who, it seems, are the "great masters," and the heretofore infallible oracle of the copper trade. The reasons on which they are alleged to declare for a rise or a fall are rather amusing. "Sometimes a refractory member of the trade, who kicks against the regulations of the smelting body, has to be coerced, and the price has to be regulated accordingly for this purpose. The last reduction is stated to have taken place because the Russian Government, having a considerable quantity of copper to dispose of, and certain parties having succeeded in contracting with the Russian Government for the purchase of it to the exclusion of the smelters, these parties were to be punished for their interference by an immediate reduction in the price." Whether this be the true solution of the matter or not, it is certain that the present system is a very unwholesome one, and ought to be put an end to.

PROVINCIAL NEWS.

Louth.—The laying of the foundation-stone of the new town-hall and public buildings here on the 16th ult. was made a very important affair. The day was observed as a holiday, and about 1,000 of the poor and the working classes were feasted at the corn-market. The stone was laid with masonic honours and a procession nearly a mile in length, and the day was wound up by a dinner, at which the Earl of Yarborough and Lord F. Beauclerk were present, and also by a concert and ball. The building will occupy an area, including the courtyard, of about 1,500 square yards, fronting East-gate and Cannon-street. It is in the Italian style of architecture, with Ionic entrance from East-gate. Over the entrance in Cannon-street will be placed a figure of "Justice." The ground-floor contains magistrates' court, magistrates' retiring-room, town-clerks' and magistrates' clerks' offices, muniment-room, and other necessary offices, and cells and police-stations, with a residence at the back of the premises for the superintendent of police. Above the whole of these is a public-room, nearly 100 feet long, 30 feet wide, and proportionately lofty, with a council-chamber adjoining. The length of the main front is 120 feet, its total height being nearly 60 feet from the ground. The base of the building is to be rusticated with strong cornices and stone dressings, the upper portion being finished with red brick, cement, and stone dressings. The building is contracted for at 5,927*l.* The architect is Mr. P. Bellamy, of Lincoln and Louth; the builder, Mr. Dales, of Louth.——On the 1st inst. the spirited inhabitants of Louth had another field-day in laying the foundation-stone of a corn-exchange, which will be entered from the corn-market, through wide folding-doors, with glass panels, reaching near the floor, placed at the top of a flight of steps 9 feet wide: the exchange will be 74 feet long, 34 feet 6 in. wide, and 25 feet high, lighted by skylights which cover the whole area of the ceiling, divided into bays by cross-beams, supported by carved trusses at each end. Attached to the corn-exchange will be offices, which may be let off to merchants or others. The front façade is to be executed entirely of stone: it is in the Italian style of architecture, of three orders. Surmounting the whole is a balustrade, capped by carved urns. The design was prepared by Mr. Bellamy. The contract, amounting to upwards of 2,600*l.* has been entered into by Mr. Levitt, builder, Louth.

Keal (*Spilsby*).—The tower of Keal Church, which a short time back had fallen from decay, is being rebuilt by Mr. Andrews, of Stickford, contractor, whose tender, we hear, was the lowest by 100*l.* The required amount of subscriptions is about 600*l.* of which 500*l.* have been realized. Some curious old brass coins have been found in excavating the foundations.

Isle of Axholme.—It is said to have been discovered that the scum which accumulates on some of the drains in this locality, when dried, can be spun like cotton.

High Roding.—The following tenders have been lodged for the restoration of the parish church, new vestry, bell turret, &c. Mr. G. E. Pritchett, architect:—

Glasscock, Bishop Stortford...	£927	0	0
Brown, Norwich.....	781	14	0
Lawrance, Braughin	727	0	0
Gray, Sawbridgeworth	501	0	0

Reading.—The Reading Corn Exchange and Market Act lately received the Royal assent, but, according to local papers, "a difficulty lies in the way of its being carried into effect imme-

diately, as intended, viz. the failure of the architect to show to the satisfaction of the committee that this plan can be carried out for anything like the amount stated, and evidence of which was offered when the Bill was in committee in the House of Commons. As the sum to be expended by the corporation upon this building is limited by the Act to 7,000*l.* it is generally supposed the court will have to adopt some other than the prize plan, and that the prize-holder will have to refund the amount of his prize, not having fulfilled one of the conditions of its obtainment." The Corporation, we have since heard, have appointed Mr. F. Hawkes, jun. and Mr. J. B. Clacy, architects, to carry out the works, &c. It will be recollected that these gentlemen obtained the prizes for the two best designs in competition, which will now probably be amalgamated.

Canterbury.—Designs have been prepared by Mr. Hardwick for the erection of a School on St. Thomas's-hill, Canterbury, for the orphan sons of clergymen. The ground has been purchased by Dr. Warneford. He has also given 4,000*l.* towards the building, and 6,000*l.* for scholarships. The school has hitherto been at St. John's-wood, Regent-park, London. It is proposed to appropriate to the girls the present building at St. John's-wood, and on St. Thomas's-hill a building will be erected sufficiently large to contain 200 boys.

Mottram.—There is a prospect of the old church here being rescued from decay. The wardens have commenced a subscription to enable them to take down and rebuild certain portions of the edifice, besides other works connected with the church and yard. About 2,000*l.* will be expended.

Bedminster.—It is proposed to erect the new church on the south side of the present structure, which will remain till its successor be completed. The tower, however, will be speedily taken down. Workmen are removing the cross, the site of which will be covered by the new edifice. The cross is to be reconstructed on the north side of the churchyard.

Devonport.—The contract for erecting the first wing of the new barracks, with military chapel and school-house, has been taken by Mr. Clift, of Plymouth, for 54,086*l.* 11s. 8d. The work is to be commenced forthwith. The site is that of the old Picquet and Cumberland barracks, extended by subsequent contracts on the sites of Ligonier and Frederick squares.

Holyhead.—The new harbour-works are now so far advanced as to afford refuge to vessels, which run in for protection in large numbers.

Cardiff.—On Thursday, the 14th, considerable excitement was manifested at the Bute Docks on the occasion of laying the first stone of the Sailor's Home, which was performed by the young marquis under the guiding hand of Mr. J. Evan Thomas. As we mentioned some time since, voluntary subscriptions having failed, the Marchioness of Bute and the trustees to the Bute estates (Mr. O. T. Bruce and Mr. J. Boyle), as representatives of the young marquis, determined to carry out the proposition solely at his expense. The proceedings were well arranged, a procession being formed, in which the sailors in port took a prominent part, bearing their national colours. The site is well chosen, being close to the dock head. Mr. A. Roos, of London, is the architect, and furnishes the plans gratuitously. The building will be 180 feet in frontage by 100 feet. Tenders are advertised for.——The statue of the late Marquis of Bute is now completed, and was uncovered last week, at which time its formal inauguration was to have taken place, but many of the committee being absent, attending their public duties in Parliament, this is postponed *sine die*.

Clynnog Fawr (North Wales).—The parish church of Clynnog Fawr, in Carnarvonshire, is to be restored at a cost of 1,500*l.* of which 1,171*l.* have been subscribed. The nave has already been restored at a cost of 500*l.*

Doncaster.—Cottage building is very actively in progress here, and tenants, according to the local *Gazette*, are rushing in before the walls are plastered, or even the floors boarded. This is partly accounted for by the establishment of the "plant" of the Great Northern Railway here, which requires some 700 hands, of whom only one-half have been transferred as yet from Boston.

Treales (Kirkham).—A church for the township of Treales, Wharles, and Roseacre, is to be erected at the expense of the Earl of Derby, from designs by Mr. Sydney Smirke, and at a cost estimated at 2,000*l.* The edifice will be in the Early English style of thirteenth century. Length, 60 feet; width, 34 feet 4 inches; chancel, 25 feet by 21 feet; height of church, 20 feet; to the top of the ridge, 40 feet; number of sittings, 350. Messrs. Cooper and Tullis, of Preston, are the contractors for the masonry, and Mr. John Hornby, of St. Michael's, for the woodwork. The chief stone was laid on Saturday in week before last.

Bradford.—The Roman Catholic Church of St. Patrick, in Westgate, has been formally opened. It is of Early English style, and consists of a nave, aisles, chancel, chapel of the sacrament, and vestry, over which is the organ-choir. The roof interiorly is open, and the church is fitted up with stalls, the alleys laid with blue and red tiles, and the chancel floor inlaid with Minton's encaustic tiles. The chapel of the sacrament has a stained window, the gift, jointly, of the architects and Canon Harrison. It is painted by Wailes. Exteriorly, the church is simple. The roof is covered with stone. The gables are surmounted with crosses, and there is an octagonal turret, with belfry over, at the east end of south aisle. The cost, including site, has been about 4,000*l.* of which only about one-half has yet been raised. The architects are Messrs. Weightman, Hadfield, and Goldie, of Sheffield.——The new Wesleyan Chapel in Norcroft-road, has also been opened. It is of modern Italian style, from a design by Messrs. Mallinson and Healey. The internal dimensions are 47 feet by 72 feet; and with galleries on three sides, there is accommodation for about 1,100 persons. The chapel is lighted by twenty-seven windows, and provision is made for ventilation. There are school premises attached, with master's house. The total cost will be some 2,800*l.*

Snaith.—At Cowick, Pollington, and Hensall, all near Snaith, the foundation-stones of three churches were laid on Monday in week before last. Mr. Butterfield is the architect; Mr. Norris, clerk of the works; Mr. Charles Ward, of Lincoln, builder. The churches are to be built in the Gothic style of architecture, with red bricks and stone dressings, and tiled, with open roofs. The interior fittings will be of stained wood, and moveable. The Cowick Church is to accommodate about 400 persons, and the others upwards of 300 each. The buildings are all to be erected at the cost of Lord Downe. "We believe this," says the *Doncaster Gazette*, "to be the first account on record of the foundation-stones of three new churches being laid on one day, in one parish, all founded by one man, all laid by one man, and all to be erected by the same party." A parsonage-house and schoolroom are to be erected near to each church. A supper to upwards of sixty workmen and others connected with the buildings was given at Snaith on the evening of the day on which the chief stones were laid.

Bolton.—The streets committee of the town council have determined to recommend an increase in the salary paid to Mr. Sharp, the board surveyor, from 170*l.* to 250*l.*

PARIS.

IT appears that the late Prefect of the Seine, who has just become a member of the senate, and who has presided over the municipal works of Paris since the 2nd of December, not being a sufficiently *fast man* for the superior authorities, has been succeeded by M. Haussman. Report says that he is to propose a loan of 200 millions of francs (eight millions sterling) to be devoted to works! At this rate Paris will in ten years be completely altered, and, except the larger monumental buildings, the completion of which was mainly due to the late Louis Philippe, its whole aspect will present an entirely new physiognomy. The greatest improvement would result from the abolition of the octroi, and substitution of a house tax. This would allow of the unlimited extension of Paris beyond its present narrow and inadequate limits, and introduce life, energy, and private building operations into the suburbs, as we see in London.

EXPEDIENTS IN TRAVEL.

SOUTH AFRICA.*

A WORK has been recently published by Mr. Galton, containing the description of a part of Africa hitherto unknown to Europeans, lying between Cape Colony and the western Portuguese settlements.

The aborigines seem a highly pastoral race, and the most northern certainly are careful agriculturists: the land is of great fertility.

The author had to rely entirely upon his articles of exchange for his money, and a very heterogeneous collection he took with him from the haunts of Wardour-street and Drury-lane: he had the satisfaction of crowning a monarch "in buff," with a theatrical crown, at "Ondonga," the capital of Ovampo," and of whom the author gives a portrait.

He started from Walfisch Bay August, 1850, and returned to it in December, 1851. The following extracts may be useful:—

"There are two kinds of timber trees in Damara Land, one is 'unna,' which is soft and porous, and of very little use, and looks something like an elm; the other is the 'camel-thorn,' which is a fine tree, and more gnarled, almost too hard to be worked, very heavy and brittle, but can be used for carpentering." The author, however, found it of great service, as for axle-trees. He learned how to season wood in a hurry: "A trench was dug, a good fire made in it, and after a time the ashes swept out, then water poured in, which steamed the hot earth. The wood was then placed in and covered up, and left to lie for a day." He vividly describes the method of "crowing," digging either for planting or for water. For planting uprights "I should have used spades, and in default of these I really do not know what I should have done, for the natives each took a common stick, pointed at one end, and, holding it like a dagger, broke up the ground with it; they then scratched out the loose earth with their left hand, working in this way until holes were burrowed deeper than the elbow, and only some 6 inches in diameter: they dig thus for roots and water."

His activity of mind and method of getting out of a mishap are exemplified in the following anecdote:—

"His waggon and oxen on one occasion came to a sticking-point on a steep sand pitch, of about 6 feet high out of a river bed. The oxen drew the waggon till its fore-wheels reached the top of the pitch, and there it stuck: we tried everything, but the pull was entirely beyond their power. I recollected the manner in which our ancestors, in the time of the Druids, are said to have managed their large stones, and tried that plan on my waggon;—that is to say, I lifted one wheel, and had a flat stone put under it; then the other, and did the same to that; and so I continued raising the hind wheels alternately, until the back end of the waggon was lifted up some 3 feet on piles of stones, scotching the front wheels. I now built a causeway from the piles to the fore-wheels, and put smooth stones not only under these, but a few paces in advance. Thus, with flat stones, and with the help of ten or twelve men to carry the flat stones, I completed my task, and my inspanned team trotted away quite easily."

It seems that amongst these tribes salt is not regarded as a necessary, nor does it seem to be required, as the author, his companion, and three others used only a small pill-box in six weeks, living on nothing but meat and coffee. The Aborigines feed chiefly off meat and milk, and many off nothing but pig-nuts.

"The houses are absurdly small, circular, 5½ feet across, and 3 feet high, with a conical thatched roof, and door about 2 feet high and 1½ broad. Each hut is occupied by an entire family, husband, wife, and children; a mat serves as a door, and fire is made in the centre."

The following is a useful hint. He says,—

"If I am travelling again on a shooting tour, I should certainly take a large opera-glass with me. It is one of the most perfect of nigh glasses, besides being the most useful of telescopes; I think it would put a man's sight in the dusk upon a par with that of a wild beast's generally. * * Since my return to England I have tried its powers at night. At the

* "The Narrative of an Explorer in Tropical South Africa." By Francis Galton, esq. John Murray. 1853. 1 vol. 8vo.

sea they are coming into general use, and naval officers assure me they are superior to ordinary telescopes. A powerful magnifying telescope is of little use in tropical Africa. The air is always seething and waving with heat."

He remarks also "that it is very important when *en route* not to have a compass that is too delicate, as when you raise it up to look at it, so long a time elapses before it settles, that the animal becomes fidgetty, and disturbs the needle again. The best pocket-compass to have is one that has a glass top of about 1 inch across the pivot on which the needle turns is fixed, in a hole drilled through the bottom glass concentric with the needle, and turning stiffly round its cap, is a small piece of brass, shaped, say like a fish, so that its head could never, even by the faintest light, be mistaken for its tail. The top glass of the compass should unscrew. Before starting, having determined on which direction you intend to proceed, take off the top glass and adjust the head of the fish, so that it shall point in that direction. When it becomes dark, you have simply to hold the compass between your eye and the sky, and the fish can be seen quite plainly; but an ordinary compass can never be discerned after dark. It is better to hang the compass by three threads, like a scalepan, than simply to hold it on the hands. The threads take the place of gimbals, and are more compact in the pocket."

Speaking of soap, he describes an article that he made himself, and says what to travellers or missionaries it may be useful to know,—

"It took us a week or ten days to complete, and proved a very superior article. The cook having saved as much fat as he could from the meat, until this store amounted to about half a bucketful; and a great quantity of wood or shrub ashes being collected, those plants alone being used whose ashes taste acrid; two large clay pots were formed: in one we put the ashes, and let water stand upon them; in the other, under which a fire-place was built, we placed the fat. Then a Damara superintended the process until the end, keeping up the fire under the grease-pot, and from time to time ladling into it a spoonful of the ash-water or ley. This ash-water is sucked up by the grease, and in ten days the stuff is transformed into good white soap. The difficulty lies in selecting proper ashes. Those of most plants make the soap too hard, those of others too soft; but when the '*juste milieu*' is hit, all goes on excellently."

THE OPERATIVE MASONS' BENEFIT SOCIETY.

On Tuesday last, the annual dinner of this association—commemorative of the completion of its 43rd year—was held, under the presidence of Mr. George Myers, at the Highbury Barn Tavern, Messrs. T. Stirling, H. W. Cooper, Gates and George, Holmes, W. Wright, Yates, Bowack, Thomas, Bailey, Rutherford, and Delay, being present, with many other members and visitors, to the number of about 120 in all.

The chairman, in proposing prosperity to the Institution, said, it was perhaps scarcely necessary for him to state that the purpose for which it was established was the relief and assistance of one another,—dependance, in fact, on the accumulation of capital, for the means of living in the event of disease or incapacity; but he would, he hoped, be excused, if he extended the principle to a wider sphere, it being one he desired much to see, and which he did not doubt, on a better understanding being come to, would be the means of terminating a state of affairs not profitable to the men and comparatively ruinous to the masters,—he meant the entire mutual dependance, either in trade or commerce, of labour on capital,—as of the employer on the employed.

The secretary having read the report, and a list of subscriptions,—

Mr. Joseph Kay begged to make a few remarks which were to the effect that although the dinner was not arranged for begging purposes—for, after the report they had just heard showing that the Society was in a state of positive affluence, with an income up to January, 1853, of over 234*l.* with liabilities against it of only 134*l.* and an amount of stock, invested to July last, of, in round numbers, 775*l.* it could not, he thought, be urged that the society was in a needy condition;—but at the same time, such a list of contributions as had been just made should not be passed over without more than ordinary remark. It was the largest sum, with but one exception, that had been raised on a similar occasion since the society was instituted, namely, upwards of 50*l.*; towards which they found the name of their chairman, Mr. Myers, 10*l.*; Mr. Thomas Stirling, 5*l.* 5s.; Mr. Cooper, 5*l.* 5s.; Mr. Thomas Cubitt, 2*l.* 2s.; Mr. Thomas Jackson, 2*l.* 2s.; Messrs. Gates and George, 2*l.* 2s; Mr. Charles Balam, 2*l.* 2s.; Messrs. Daniel and Son, 2*l.* 2s.; Messrs. Grieve and Grellier, 2*l.* 2s.; Mr. Watkin Morris, 1*l.* 1s.; Messrs. Smith and Appleford, 1*l.* 1s. &c. &c.; and with such a substantial assurance he thought it could be scarcely advanced that the well-being of the employed was unthought of by the employer.

The meeting passed off very satisfactorily.

CONWAY CASTLE.

Through the powerful aid of your valuable journal, perhaps you can convince those who have the preservation and care of this noble old relic of former ages—the Castle of Conway—"that a stitch in time saves nine." The castle and walls round the town are mouldering fast, not so much by the hand of time as by the want of care and attention, very little of which would go a long way, and at very little expense, too. All the small breaches should be made good, and the foundations underpinned where stones have been allowed to be taken away for various purposes. Those who hold gardens inside and outside the walls of the town should be obliged to keep the foundations in repair, instead of being permitted to take stones from them whenever they want them. Manure-pits are made outside under the walls, so that, in emptying them, a certain quantity of earth is annually disappearing, causing an undermining of the foundations. The railway engineer has built a forge against the wall, where it is in a most dilapidated state, blackening the wall with smoke by the way he has contrived the chimney, and thereby showing much bad taste. I have been told by several at Conway, that there is a certain *sum of money allowed* for the purpose of repair; query, is it expended? as it does *not show*, and is much wanting to preserve to the tourist the remains of one of our finest specimens of castellated architecture. A Tourist.

VALUE OF BUILDING LAND IN ISLINGTON.

On Friday, the 15th inst. a special jury was summoned at the Sheriff's Court, Red Lion-square, to assess the value of six and a quarter acres of the Hargrave estate, abutting on Maiden-lane, near the new Small-pox Hospital, required by the New River Company, under the powers of their Act (1852), for the purpose of erecting large reservoirs thereon.

A phalanx of learned counsel and a host of surveyors appeared on either side. For the claimants, Messrs. Roumieu, Donaldson, Tite, Baker, Barnett, and Legg, attended. It was proved that the land in question was admirably adapted for building, and that it contained good brick-earth; that it was worth about 100*l.* per acre ground-rent, exclusive of 2s. per thousand royalty on all bricks made: it was contended also that, by the Company's take, the remainder of the land would be depreciated, in consequence of the great height of the intended embankments, and the necessary alteration of contemplated roads and frontages. The trial occupied the whole day, but before the claimant's evidence was completed, a verdict was taken by consent for 14,500*l.* which was understood to be 10,000*l.* for the land, and 4,500*l.* for the severance or depreciation. The claim made, as we understand, was for 26,187*l.*

Messrs. Lee, J. Shaw, Pownall, Clutton, and Hunt, appeared on behalf of the Company, but were not called.

The costs will be enormous, and we forebode no diminution of the heavy water-rates of the New River Company; but as our professional brethren carry away so much of the spoil, we suppose we have no right to grumble.

BUILDERS' CLAIMS FOR MAKING ESTIMATES.

Having seen notices of several claims by builders and architects in your valuable journals (Nos. 450, 468, 469, 475, 492, 517, &c.), and the decisions of the judges in different County Courts, I have taken the liberty of forwarding you the particulars of an action tried in the County Court at Romford, Essex, on Saturday last, July 9th, which may not only be interesting to your readers, but of service to my brother builders.

Hammond v. *Francis*.—This was a plaint to recover 6*l.* 11s. 6d. for work and labour in preparing and making out specifications and estimates, at the defendant's request, for the repairs and alterations required at two farms at Great Warley, Essex.

The defendant admitted that he employed the plaintiff (who is a builder at Warley), in November 1847, to give him specification and estimate of some repairs, which amounted to 42*l.*; but the work was not done; and in August, 1848, he again requested an estimate and specification, which amounted to 396*l.* 10s. and stated that he, the defendant, acted, in giving the plaintiff directions, as agent for Mr. R. B. Sheridan, M.P. as owner of the farms, and not on his own account.

The plaintiff and defendant were examined, and His Honour gave judgment for the amount claimed, as the defendant admitted in his cross-examination that the works had been done under his superintendence by different mechanics whom he employed; and he (the defendant) had charged his landlord for the amount of work done, which nearly amounted to the plaintiff's estimate, although there was not so much work performed as was specified.

His Honour remarked, that although a builder, and acting as a surveyor, he (plaintiff) was fully entitled to the amount claimed, and that great injustice had been done to the plaintiff. J. H.

HOLBORN THOROUGHFARES.

I wish to call the attention of the City authorities to the want of an additional thoroughfare from Smithfield to Holborn, by Gowcross-lane, across the Fleet to Charles-street, out of which there are two openings into Holborn, viz. Hatton-garden and Brook-street. Any person of feeling passing up and down Holborn-hill and Skinner-street must be pained to see the "cruelty to animals" that is obliged to be resorted to by the drivers of omnibuses and cabs to urge their poor animals up those steep and difficult hills; and it requires no great share of observation from any one who may go from the Bank of England to Charing-cross to see how completely blocked up Fleet-street and the Strand are with ponderous waggons, which are obliged to take this way from Finsbury to Westminster to avoid these hills. If a bridge and passage were made across the Fleet Valley, from Smithfield to Holborn, at the points mentioned, they could be so constructed as not to interfere hereafter with the proposed new railway, and it would take all the waggon traffic to and from the Eastern Counties Railway, relieve Fleet-street and the Strand, and give a shorter line to and from the West-end to either Houndsditch or the Eastern Counties Railway. A. Z.

THE LABOUR MOVEMENT.

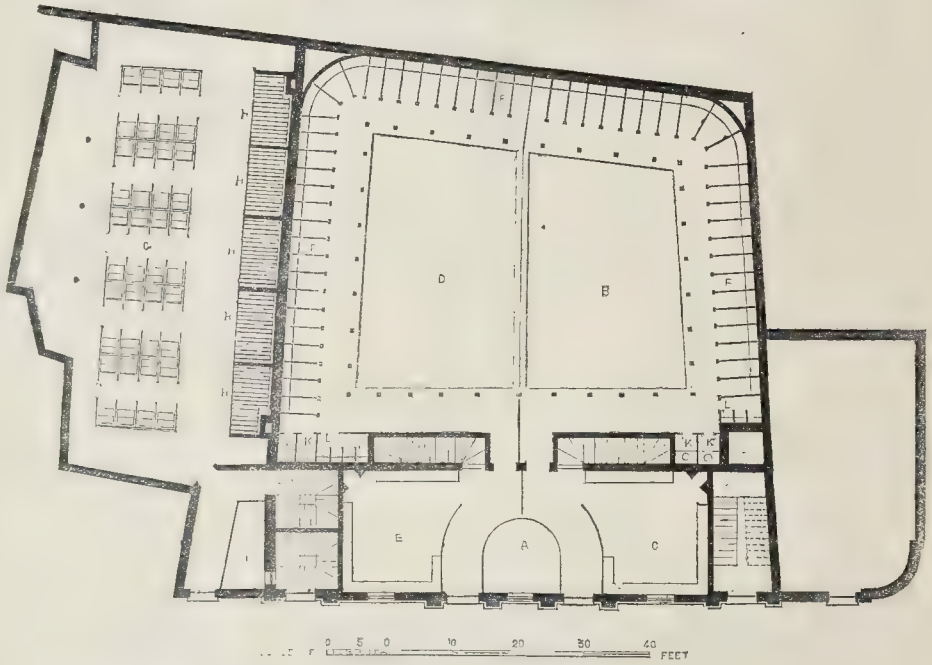
The dispute between the Southampton journeymen painters, plumbers, and glaziers, and their masters still existed by last accounts, in consequence of four of the principal employers declining to accede to the demand of the men, which is, that their wages shall be increased 6d. a day. It was expected that the men would strike.

At Altrincham, on the 4th inst. the men in the employ of Mr. Samuel Delves, joiner, struck work for an advance on present wages, or a rise from 18s. to 1*l.* a week. Their employer offered them half their demand, which they agreed to take, making their wages 19s. a week.

At Ashton-under-Lyne the joiners have ceased work, because the masters do not think it reasonable to give them 1s. a week advance of wages and at same time to reduce the working hours by half an hour a day.

At North Shields the masons who were out on strike have resumed work, the masters having complied with their demands for an increase of wages. The strike of the masons' labourers in South Shields is also now at an end, the masters having agreed to give the men 18s. a week instead of 15s. as formerly. The masons' labourers in Sunderland sent a loan of 20*l.* to the secretary of the masons' labourers in South Shields for the purpose of assisting them to carry out the strike.

BLOOMSBURY BATHS AND WASHHOUSES.



GROUND PLAN.



PLAN OF ONE-PAIR FLOOR.

REFERENCES TO PLANS.

GENERAL PLAN.

A. Pay-office, men's baths.
B. Plunge bath, first class—men.
C. Waiting-rooms.
D. Plunge bath, second class—men.
E. Waiting-room.
F F. Dressing-closets.
G. Second class laundry.
H. Drying-closets.
I. Pay-office to laundry and females' baths.
K K. Closets.
L. Urinals.

FIRST FLOOR PLAN.

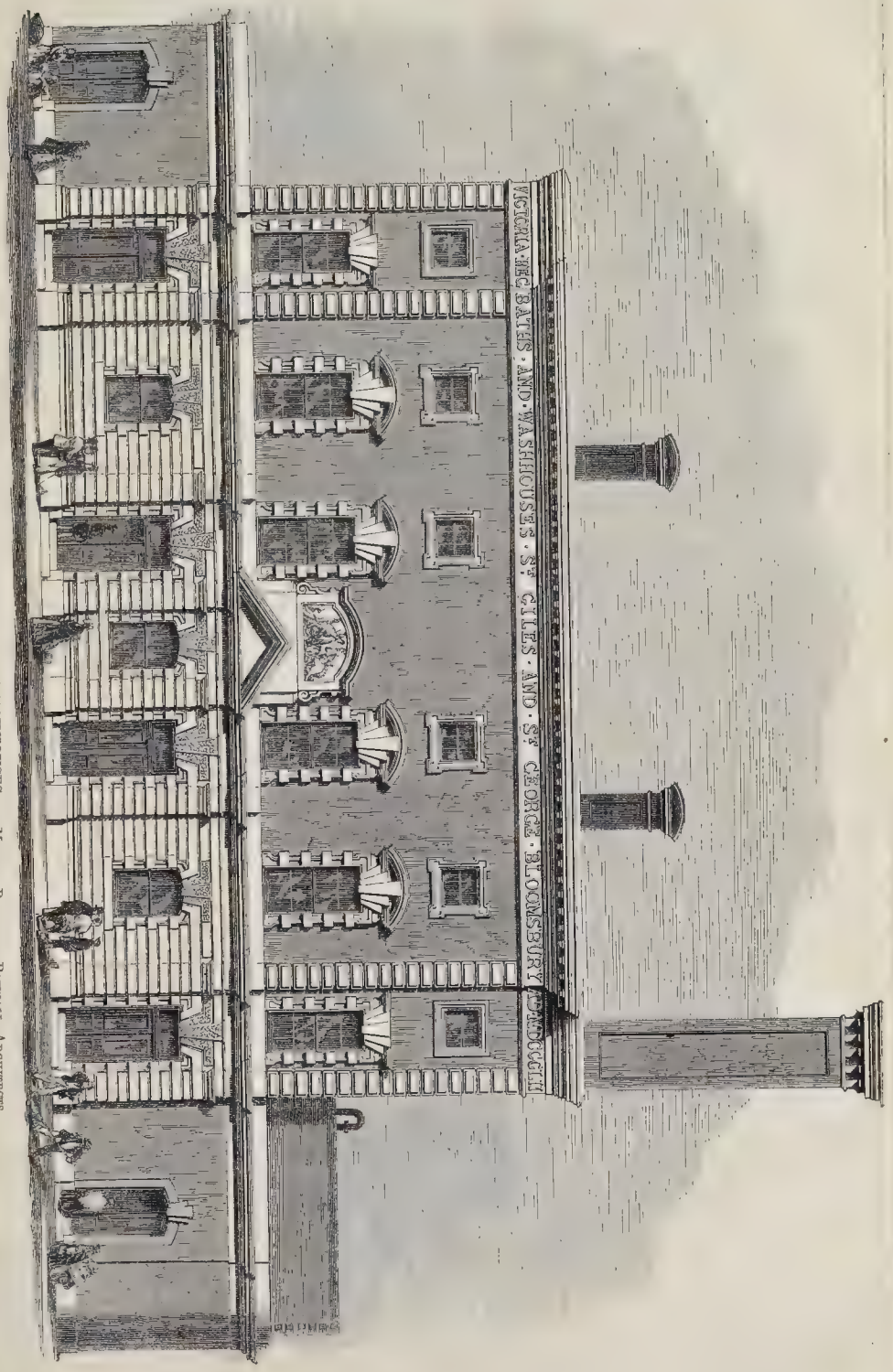
A. Women's first class baths.
B. Waiting-rooms.
C. Women's second class baths.
D. Waiting-room.
E. Men's first class baths.
F. Men's second class baths.
G. Closets.
H. First class laundry.

ST. GILES AND BLOOMSBURY PUBLIC BATHS AND WASHHOUSES.

THE completion and inauguration of public baths and washhouses in Endell-street for St. Giles, and Bloomsbury, we mentioned a few weeks ago, when we promised illustrations. We now give a view of the building and plans of the upper and lower floors. Hereafter a section will be given. We may repeat the statement that the structure comprises two swimming-baths, seventy-three private baths, and fifty-six washing-places, with approved mechanical arrangements. Each swimming-bath contains about 25,000 gallons of tepid water, constantly flowing through the bath. The private hot and cold baths are of various materials,—porcelain, enamelled iron, and zinc. Each washing-place has a boiling-tub, supplied with hot water or steam, a trough supplied with as much hot and cold water as the washer requires, and a separate compartment in a hot closet for drying. A warm bath of the second class may be had for 2d. and one of the first class for 6d. For the swimming-bath the charge is 2d. second class, and 4d. first class. In the washhouses, for one hour, including use of wringing machine, drying-closets, mangling conveniences, and ironing, 1½d. is charged in the second-class, and 2½d. in the first-class.

The whole of the floors of the building are constructed on Fox and Barrett's fireproof principle. There are three boilers and a tank, to contain 21,000 gallons.

Messrs. Baly and Pownall were the architects, and Messrs. Sissons and Robinson, the contractors.



ST. GILES AND BLOOMSBURY PUBLIC BATHS AND WASHHOUSES.—Messrs. Baly and Pownall, Architects.

PRESERVATION OF OUR NATIONAL PICTURES.

MR. J. S. PARTRIDGE has favoured us with a article on this subject, which we shall ndeavour to bring within the limits of our pace. Mr. Partridge maintains that there is o necessity for the removal of the national ictures from some central and convenient loca- ion (not the present) within the metropolis, nerely with a view to preserve them, and sug- ests a mode which, in his view, would obviate ny such necessity, by effectually preserving the ictures against all the damage to which a entral location exposes them. This mode con- ists, as he figuratively describes it, in embalm- ng them, as it were, in some elastic composi- ion, such as those containing caoutchouc and utta percha, with glass in front, the whole nclosing the picture in a hermetically sealed nvelope, with a thin sheet of brass or copper, qual to stencil plate, screwed on the back, both or protection of the composition and for any ecord of artist's name, date, descriptive matter, r other particulars that might be deemed xpedient. The process, as detailed, includes, s preliminary steps, desiccation of the wood of he frame, and the use of creosote as a preserva- ive against insects. The first cost of the pro- ess, he remarks, would not be great in compari- on with the subsequent advantage to be gained, nd the trouble and expense afterwards would e almost *nil*.

Notices of Books.

History of the Ruined Church of St. Mary Magdalene, Doncaster. By the Rev. JOHN E. JACKSON, M.A. of Brazenose College, Oxford. London: George Bell, 186, Fleet-street.

As many of our readers may recollect, the ruins of an ancient church were disclosed within the old Town-hall of Doncaster in 1846, while pulling down the building, in order to erect a new one on the site. To effect the purpose in view, it was found impossible to preserve the ruins, interesting as they were, and shortly thereafter the whole were destroyed. In order, however, that some record of this curious glimpse of antiquity should be preserved, the present author, at the suggestion of his brother, Mr. Charles Jackson, of Doncaster, has created the present handsome volume, which is illustrated with various lithographs, prepared by Mr. John P. Seddon, architect, and contains a complete record of the whole, comprising what little is known of the ancient history and origin of the edifice.

An Essay on the History and Management of Literary, Scientific, and Mechanics' Institutions. By JAMES HOLE. London: Longman and Co. 1853.

THIS is a prize essay of the Society of Arts, Adelphi. The author is the hon. sec. of the Yorkshire Union of Mechanics' Institutions, and the especial purpose of the treatise is to show how far Literary, Scientific, and Mechanics' Institutions may be developed and combined, so as to promote the moral well-being and industry of the country. The essay is of course published under the sanction of the Society. It discusses the subject in chapters on the history of such institutions, their objects, and methods of adult instruction, business management, and union, with appendices on the proposed central institution of arts and manufactures, on amusements, on subjects which ought to be known in various trades, on exhibitions of works of art, on itinerating libraries for villages, and on museums.

Railway Reading.

A NEW budget of Messrs. Longman's "Traveller's Library" and of Mr. Murray's "Railway Reading," remains to be noticed. The former comprises "A Tour on the Continent by Rail and Road in the Summer of 1852," by Mr. John Barrow; a sketch of "Swiss Men and Swiss Mountains," by Robert Ferguson, the author of "The Pipe of Repose;" a treatise, in two small parts, on "Our Coal and our Coal-pits, the People in them, and the Scenes around them," by "a Traveller Underground," and which, did space and time permit, would of itself form a good mine for an article on the subject; a reprint of Mr. Macaulay's well-known "Essay on Lord Byron and the Comic Dramatists of the Restoration;" and lastly, a sketch of "The Life of Marshall Turenne," by T. Oswald Cockayne, M.A. of St John's College, Cambridge. Of "Murray's Railway Reading," we have a small but able treatise on "History as a Condition of Social Progress," by Samuel Lucas, A.M. barrister-at-law; and a reprint of those well-remembered "Ancient Spanish Ballads," translated by J. G. Lockhart, and published at a very high price,—with illustrations, to be sure, which cannot be expected to appear in a two-and-six-penny volume, but with nothing else that is not now offered to the million at a comparatively insignificant cost.

Miscellanea.

SKIMMING THE WATER.—A new PRINCIPLE IN SHIPPING.—A pamphlet has been published by Mr. D. S. Brown, and has reached a third edition, titled "America in Forty-eight Hours; India and back in a Fortnight; being Suggestions for certain Improvements in the Construction of Steam Vessels, in which the practicability of Mechanical Flying is set forth, as evinced in the Animal Creation, as well as by the deductions of Science." A railway carriage, Mr. Brown remarks, goes *over* its fulcrum, whilst a steam vessel goes *through* it, "ploughing the deep," as it is termed, but with as little necessity for doing so as there is for a locomotive "ploughing" the land. "Those who think that a vessel can only be sustained on the water by half burying her in the element have a very elementary knowledge of the laws that pertain to physical science. Let any object strike the sea with sufficient force, and it will rebound from its surface like a tennis-ball. Whatever can be done with an *unyielding* fulcrum, can also be done with a *yielding* one. In a *sailing*-vessel, a certain depth of hold is necessary to give stability to the ship, and the very resistance of the fluid through which she moves is made subservient to her progress. With a steam vessel, however, the case is different: not being propelled by any external agency, she has to urge herself forward through the water, and in doing so encounters but one constant resistance at the bows, to diminish which is the chief end of all modern improvements in shipbuilding. From the principle on which steam-vessels are at present constructed," the author continues, "this resistance is much greater than it should be, and is found to increase in a much quicker ratio than the velocity of a ship." He therefore proposes to remove this obstacle to the "go-ahead" progress of steamers, by "sustaining the hulls of ships on the surface of the water when in motion, by an upward pressure resulting from such motion, or from other motion or action, instead of allowing such hulls to be supported by the upward pressure obtained from simple immersion only; and which may be accomplished by balancing the ship in such a manner that her bottom (which is flat) shall form an inclined plane to the surface of the water. The effect of this will be, when she is in motion, to raise her whole hull to the surface of the water, thereby removing entirely the resistance at the bows, which has already been shown to be the great obstacle to her progress. This is but another illustration of a principle well known to every schoolboy who has thrown a stone slantingly on the surface of the water, making what is vulgarly called a duck and a drake. The stone striking the water in an inclined position, continues to glide over its surface until its motion is expended." Many of our readers will be reminded by this illustration, that we before noticed Mr. Brown's scheme. He has now elaborated it, however, and even secured patents for it both here and in America.

THE VIEW OF ST. PAUL'S.—I have this day witnessed a sight which confounds me: how I came not to see it before I do not know, perhaps because I thought it impossible,—I mean the huge unsightly pile of building, "flour mills," erected on the banks of the Thames between St. Paul's and Blackfriars-bridge, masking in a great degree the magnificent architectural view previously enjoyed from the bridge. I thought it was always in contemplation to make arrangements to preserve a view of this grand spectacle, a scene unrivalled in any city, but now sacrificed to private speculation. Shame! In no civilized country, save England, would the Vandal act have been permitted. But are we civilized? are we not the "varnished barbarians" after all? I see no reason now why the magnificent scene cherished by all lovers of art should not in the course of time be blotted out altogether. It is really too bad. A man would not fare worse in losing his nose, than London will in being deprived of this fine feature.—A. W. H.

*** We pointed out the evil while the building was in progress, but, of course, without effect.

STAINED GLASS, &c.—Messrs. Wilmshurst and Oliphant have just completed and fixed three stained-glass windows for the east end of a church at Wiston, formerly Wissington, near Chelmsford. The church is Norman in style, and is supposed to have been built about the year 1130, and many parts are considered good specimens of the Anglo-Norman period. It is dedicated to the Virgin Mary. The centre window contains the Crucifixion, beneath which is the Entombment; and the side-windows contain, respectively, Christ bearing the Cross, and the three Marys at the Tomb. The old foundations of the chancel were recently discovered, and nearly perfect, upon which the present walls are built. During the restoration, several frescoes of a very early date were discovered. The rector is the Rev. Chas. E. Birch, who has shown great interest, and taken much trouble during the progress of the works.——Mr. David Evans, of Shrewsbury, has just placed an obituary window of stained glass in the south aisle of Winchester Cathedral. The architectural character of the window consists principally of two tiers, forming six lights, each of which contains a full length figure, viz. in the centre of the upper compartment a representation of Christ as the "Good Shepherd." On either side is the Virgin and the "beloved disciple" John. The division below has in the centre a figure of King Solomon, clothed in a purple mantle lined with ermine. The lateral divisions are occupied with Isaiah and Aaron with the budding rod and golden censer. An octofoil in the apex is filled with an emblem of the Trinity, and a quatrefoil division on each side with a rose. The several figures are surmounted with florid Gothic canopies, the inscriptions being pencilled in the old text character. This memorial-window forms a sequel to a similar one containing six figures, executed by the above artist, and erected at the expense of Mr. Charles Morley, two years ago, in the corresponding north aisle of same building.——Two new stained-glass windows by Mr. Bell, of Bristol, are to be put up in the chancel of the cathedral in that city, and two more of plainer character are to be placed in the south aisle. Two pillars for gas-lights are also to be erected, the organ repaired, and monuments rearranged. These and other alterations and improvements are to be carried out during the next three weeks, when the edifice will be closed for the purpose.

THE ADELPHI THEATRE AT EDINBURGH.—The ruins left by the fire are being cleared away, and a new theatre on an improved and enlarged plan, by Mr. David Bryce, architect, is to be erected on the same site; indeed, very extensive alterations had been determined on a few months previous to the fire. The new theatre will cover the same area as the former one; but the interior arrangements will be such that the accommodation, both for actors and audience, will be very much greater than previously. The position of the stage will be altered, while its length will be increased from 84 feet to 60 feet, and its width at the proscenium from 24 to 30 feet. The dress boxes will be much nearer the stage than in the old theatre —the horse-shoe form having been adopted in place of the oblong. The dress circle will run round the entire building, instead of embracing only two sides as before. The entrances to all parts of the theatre will be considerably improved, the chief alteration being in the main entrance, which it is proposed to place at the corner of Broughton-street and Little King-street, instead of in Broughton-street as before. It is calculated that the theatre will hold 2,000 persons, there being sittings for 1,750, or 400 more than there was accommodation for in the old house. The contract for the building has been given to Messrs. M'Gibbon at 7,000*l*.; and the decorations and fittings will cost some thousands more. The erection will be commenced forthwith.

NEW COLLEGE AT EPSOM.—The foundation-stone of the new Medical Benevolent College was laid on Wednesday in last week. The site of the new building is on elevated ground, near the race-course. His Royal Highness Prince Albert had promised to lay the stone, but was prevented from doing so by indisposition. The ceremony was performed by Lord Manvers. The objects of the college are—to secure an asylum in which 200 pensioners, medical men or their widows, are to be provided with three furnished rooms each, and additional assistance; and to provide a school for 100 boys, sons of medical men. The outlay for site, building, fittings, and furniture, is estimated at 20,000*l*. The sum already subscribed amounts to nearly 20,000*l*.

"HALTING-PLACES."—A number of what would seem to be very compact halting-places, of cast-iron, have been put up in Glasgow by Messrs. Lister and Co. The *sole-plate* is cast in one piece with matrices, to receive the tennons of the upright. The sides are cast in four plates all the height: the cornice is cast in one piece, and also the roof; and the standard for a lamp in centre is cast separate, but attached to the roof before leaving the foundry. The water runs in a sheet down the inside.

IMPROVEMENT OF WHITECHAPEL, LONDON.—The House of Lords' Committee appointed to consider the Bill for improving Whitechapel, have passed its provisions for sanitary and other purposes. In the evidence adduced, it was stated that Whitechapel contains a population of about 37,000, with 4,700 inhabited houses of the ratcable annual value of 100,000*l*. The principal object of the measure is to improve the paving, lighting, watering, and cleansing of its eight principal and twenty-three minor districts, and to consolidate its twenty-eight distinct jurisdictions into one. The Bill is also intended to affect the vast number of back streets and courts, where a large amount of dirt, disease, and misery exist sin juxtaposition with comparative wealth, respectability, and comfort. Out of the 213 streets in Whitechapel, 114 are without any proper or adequate jurisdiction for enforcing the common necessaries of paving, cleansing, and lighting. The measure also contemplates the removal and prevention of nuisances, and among others, that of smoke. A sum of 4,000*l*. is also to be raised under its authority for repair of the parish church. The committee passed a clause to the effect, that after Jan. 1, 1854, all furnaces throughout Whitechapel shall consume their own smoke. On the subject of smoke consumption, Professor Brande, as superintendent of the coining department of the Mint, deposed that the furnaces there were supplied with smoke-consuming apparatus, and that the volumes of smoke that formerly annoyed the neighbourhood were now done away with. Carbonic acid gas was evolved, however, in invisible smoke, but not, he assured the committee, to an extent deleterious or injurious to health. A material saving resulted in the cost of the coal burned. One or two of the breweries in the City, the smoke from which used to be a great nuisance, now consumed it entirely, and the saving effected in the fuel was calculated to pay the first cost of apparatus in the course of three years.

THE STUDIOS OF ROME.—Bryant, the American poet, is making a tour through Europe, and relating his adventures in the *New York Evening Post* Speaking of American artists at Rome, Crawford, he says, is occupied with his equestrian statue of Washington, designed for the city of Richmond. Around the principal figure, not yet fully modelled, will be placed statues of the contemporary great men of Virginia. Two of these, the statues of Thomas Jefferson and Patrick Henry, are already modelled, and plaster casts of them have been obtained. They are of a colossal size. The other American sculptors at Rome, Mozier, Richard S. Greenough, Rogers, and Ives, are all zealously pursuing their art. Mozier has a statue of "Silence," a female figure, in an attitude of command, with the forefinger of the left hand pointing to the lips. Greenough is modelling a figure of a shepherd attacked by an eagle. Page is here, he says, "analyzing the manner in which Mr. Titian produced his peculiar colouring, and reproducing some of his heads." He has painted a portrait of Charlotte Cushman. Terry is occupied with a picture of "Samuel and his Mother." G. C. Thompson is looking at the works of the great Italian painters, and now and then making a copy of a head or a single figure. Nichols has transferred the calm glow of Claude's landscapes into some copies which he is making. Wotherspoon is luxuriating on the sylvan beauties of Nemi. Gibson, the English sculptor, showed his party a work in basso-relievo, representing Phæton attempting to guide the chariot of the sun, "and it equals in fire and spirit anything the imagination could conceive of such a subject." He describes Gibson's tinted statue of Venus with unqualified approval.

LEEDS TOWN-HALL.—I have no doubt but you will have a communication from Leeds in reference to the competition for the new Town-hall. The amounts of the tenders are as follow:—

Mr. Robert Neil, of Manchester	£46,240
" W. D. Boothman, Leeds	45,402
" S. Atack, Leeds	41,835
" W. Wilks, Leeds	41,562

You will perceive that in the report in the local papers, they say I have annexed to my tender certain conditions which the committee could not agree to; and it is necessary that I should explain what these conditions were. In consequence of the quantities having been got up by a gentleman of London, and sold by the architect for him to the contractors, and inasmuch, as neither the town council nor the architect would guarantee the correctness of them, nor the surveyor be in attendance to give any information as to the mode of measurement, I deemed it necessary to insert at the foot of my tender this clause:—"That if the tender should be accepted, I should require time to examine the quantities before signing the agreement;" and therefore the committee did not think proper to accept it on these conditions. W. WILKS.

*** Fifty tenders were sent in, but with the exceptions above named, these were for separate branches of the work. Mr. Atack's tender has been accepted.

BRICK-BURNING AS A NUISANCE.—On a recent motion before Sir W. Page Wood on behalf of three persons resident between Fulham and Hammersmith, for an injunction to restrain a defendant from burning bricks on his land, situated about 200 yards from their residences, the Vice-Chancellor said that Lord Eldon had thought it doubtful whether brick-burning was a nuisance at all; but he could not assume that the case would be decided in the defendant's favour. As to the effects of brick-burning being a nuisance, the case of Walker *v.* Selfe, decided by Lord Justice Bruce, when vice-chancellor, established that they were, under certain circumstances, such as contiguity, and in certain conditions of the atmosphere, when it affected the health or the comfort of the neighbours, not being persons of a capricious or peculiar idiosyncracy. The defendant was about to burn several thousand bricks, and intended to continue the operation until September. The evidence showing that at times some of the parties were injuriously affected in their health, and experienced nausea, and were obliged to close their doors and windows, he should grant an order restraining the defendant, until after trial, from burning any other bricks than those on the existing clamp, and from continuing to do so after that day week, the plaintiffs undertaking to proceed to trial with their action at the next Surrey Assizes, and to submit to such order as the court might make in respect of damages sustained by the defendant in consequence of this order.

METROPOLITAN BUILDINGS ACT AMENDMENT BILL.—Last November, Viscount Hutchinson presented a Bill to the House of Lords, called "Metropolitan Buildings Act further Amendment Bill." On Tuesday, the 12th, it was read a second time. Sect 1 provides, that a foul-air tube be put in the ceiling of every apartment of buildings hereafter erected; and sect. 2, that a patent apparatus of Mr. Donald Grant, of Greenwich, may be used,—schedule F of the Buildings Act notwithstanding. My object in writing to you is, through your columns, to ask the noble lord to make a provision that the foul air shall ascend the said tube of sect. 1, and to ask Mr. Grant to give a description of his apparatus.—DISTRICT SURVEYOR.

SCHOOLS FOR ISLINGTON POOR ESTABLISHMENT.—With reference to the competition for the schools for the Islington Poor Establishment, I understand the premium has been awarded—the first, 50*l*. to Messrs. Jones and Parker, Islington; the second premium, 30*l*. to Mr. Birch, Regent's-park. Several very good designs have been submitted, twenty-eight in number. It is two months since the drawings were sent in.—A CORRESPONDENT.

IRON WORKING IN ANCIENT BRITAIN.—A correspondent, "A lineal Descendant of the ancient Sages of the British Isle," indignantly calls in question the assertion so usually made, that our aboriginal forefathers were barbarians, and were ignorant of the use of iron. True, he admits, it was the policy of the Romans to exterminate the bards and their "barbarous" practice of poetry and music, which they cultivated to a very high perfection; and to introduce the more "civilized" practices of dog-fighting, cock-fighting, bull-baiting, and gladiatorship; but the British were not so ignorant of the working and the use of iron and the other metals as is so commonly imagined. If they were so ignorant, what were the scythes attached to the war chariots of Caswallon or Casivalinus made of? With these he compelled the Romans to fly home in shame and disgrace with Cæsar's miserable excuse of a hurricane, and they never would have set foot again on ground where such hurricanes were to be met with had they not been invited and assisted in civil contentions fifty years thereafter. It was not iron alone that the sages of Britain made use of: the crescent-shaped knife used in cutting the sacred misletoe was made of gold: their garments were adorned with ornaments of gold as well as of pearls and precious stones: the ancient Britons worked the tin mines of Cornwall and traded with the Phœnicians centuries before Cæsar was born, and copper was equally well known to them as well as lead. Our correspondent recommends perusal of a little work by Mr. James, Curate of Almondbury, on "The Patriarchal Religion of Great Britain" to all interested in its early history.

LINCOLN'S-INN FIELDS.—A correspondent, "Paxonion," suggests that the gates, walls, and forecourts in this square should be swept away, a good pavement formed close to the houses, the central area enlarged, with a similar pavement outside the railing, and a glass-domed conservatory (or a reading-room), useful to the students of the college and surgeons'-hall, as well as ornamental to the neighbourhood, erected in the centre. A statue of Lord Erskine, who improved the area, might, he suggests, be erected in front of the central building. The Lincoln's-inn benchers, he thinks, would contribute largely to the improvement. Something, he adds, should be done to provide a carriage-way to King's College Hospital.

SAVE-ALL WATER-TAP.—A great proportion of the water supplied to the poorer districts of large towns is absolutely wasted. This is particularly the case with public taps in yards and courts. From negligence of one sort or other, more than half the water is lost. Frequently the taps are "left running" all night. I would suggest a water-tap and box for public places, which it is presumed would entirely prevent the possibility of waste. It consists simply of an ordinary tap, fitted at the side with a lever and *weight*. When the weight is raised by the hand, the water flows; but the instant the weight is released, it falls into its vertical position, and shuts off the water.

TENDERS

For the construction of roads, embankments, and drainage on the estate at Barnes, belonging to the Metropolitan Freehold Land Society. Mr. Edmd. Woodthorpe, architect.

Clellan	£3,600!
Bowack	3,489
Coker	3,400
Murray	2,474
Newby	1,845!

For building twenty-eight cottages, two shops, and outbuildings, &c. on the Preston Hall Estate, Aylesford, Kent, including repairing Aylesford Church, for Mr. E. L. Betts. Mr. John Thomas, architect. The quantities taken out by Mr. Pearson.

		Allowance for old buildings.
Holloway, Maidstone	£9,201 14 7	£210
Cusse and Church, East Malling	9,098 12 8	200
Jay, London	8,453 0 0	10
Wood, Gravesend	8,414 0 0	—
Reading and Co. London	8,395 0 0	15
Carter, London	8,223 0 0	12
Clifford, Strood	7,959 0 0	23
Naylor, Rochester	7,280 0 0	20

For building the East London Union Workhouse at Homerton. Mr. H. Jarvis, architect.

Cooper	£30,130
Patil	28,700
Rowland and Evans	28,968
Rigby	28,600
Trego	28,400
Marsland	28,300
Myers	26,770
Tunewell	25,874
Sanders and Woolcott	25,580
Tarrant	25,570
Sissons and Robinson	24,996
Hill	24,067
Hopkins and Co.	24,950
Jay	24,910
Wilson	24,853
Norris	24,700
Hack and Son	22,567

For building baths and washhouses for St. George's, Hanover-square, at Pimlico. Mr. Baly, engineer.

Locke and Nesham	£10,400
Hayward and Nixon	10,350
Glenn	10,300
Sanders and Woolcott	10,200
Chatter	10,150
Carter and Co.	10,130
Kirk and Parry	10,060
Myers	10,040
Oliver	9,999
Sissons and Robinson	9,930
Cooper	9,872
Brown	9,325
Hopkins and Co.	9,282
Rowland and Evans	8,956

For alterations, repairs, &c. to the Duke of Clarence public house, Commercial-road East. Mr. Charles Grey, architect.

Clemence	£1,047
Rowland and Evans	973
Pask	940
Richlieu and Niblow	926

For erection of four fourth-rate houses for Mr. Oldman. Mr. E. Harvey, surveyor.

Wells	£1,085
Brown	805
Harnden	795
Tolley	780

TO CORRESPONDENTS.

"G. J. R." "W. F. P." (question depends on the terms of the advertisements), "H. H." "J. D. F." (declined with thanks), "X Y. Z." (such an arrangement could be made without difficulty), "Stain for soft woods" (in reply, Nixon's *oil* stain is recommended), "Englishman" (we reviewed such a book some months ago; look back), "F. P. H." ("pugging" the floor will lessen the evil), "Viaduct, Stockton Line" (we have not heard; write to the secretary), "J. G. jun." "O. H." (will appear), "W. C. S." "A. C B." "D. T." (is apparently not clear on the special point), "A Journeyman Mason," "J. S." "W. H." Hackney (our notice attaches no blame), "R. B." "J. L." "L. P. and Co." "T. F." "R. W. M." (a notice was already in type), "J. B. W." "F. H." "I. B. W." "*Instar Omnium*," "J. E." "Mr. S." "R. L. S." "W. C."

ERRATA.—*London University.*—The gainer of the second certificate in the first year's class of construction was Mr. C. Luck, of Onslow-square, *not* Mr. Britton. Mr. H. A. Leonard had the third certificate in the second year's course of architecture as a fine art.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

SALES BY AUCTION.

SALE POSTPONED.

MR. H. MORRIS begs to inform the public, that the SALE of FREEHOLD BUILDING LAND, at GRAVESEND and NORTHFLEET, advertised for July 26, at the Mart, London, is for a short time POSTPONED.
Maidstone, July 16, 1853.

TO BRICKMAKERS AND OTHERS.—HARROW RAILWAY STATION.

MR. EDWIN FOX begs to draw the attention of Brickmakers and others to the SALE by AUCTION, at the MART, on FRIDAY, JULY 29, of Lots 11 and 12, being 30a. or 39p. of FREEHOLD BUILDING LAND, situate at Harrow, and containing an immense quantity of the purest brick earth specimens of which may be seen Particulars, with plans are now ready, and may be had of W. B COOPER, 11a, Solicitor, 3, Verulam-buildings, Gray's-inn; at the Mart; and at Mr. EDWIN FOX's Offices, 41, Coleman-street, Bank, and Westcroft-place, Hammersmith.

FREEHOLD BUILDING LAND—HARROW RAILWAY STATION.—Headstone Estate.

MR. EDWIN FOX begs to announce that he has DISPOSED OF, by Private Contract, lots 3 and 8 containing 39a. 3r. 39p. and 24a. 0r. 21p. of this valuable FREEHOLD ESTATE; the remaining portion will be offered by PUBLIC COMPETITION on FRIDAY, JULY 29,—41, Coleman-street, Bank.

HARROW RAILWAY STATION.—Beautiful Sites of Freehold Building Land, commanding splendid views of the surrounding country.

MR. EDWIN FOX has received instructions to offer to PUBLIC COMPETITION, at the MART, on FRIDAY, JULY 29, at TWELVE for ONE precisely, the remaining portion of this truly valuable FREEHOLD ESTATE, amounting to 386 acres, free from land-tax. The whole will be divided into large and small lots, from five to forty-five acres, to suit the requirements of all purchasers. Many of the plots produce capital brick-earth, specimens of which may be seen. The estate is situate at Harrow Station, and is bounded on all sides by public highroads, and intersected by two new roads, called Harrow View and Pinner View, leading to Harrow, a saving of at least half a mile, and to Pinner a saving of a mile and a half from the railway station. The centre of the estate is planned for a market-place, so as to concentrate all shops and trades required for the neighbourhood, and must afford the advantage of good society. One moiety of the purchase may remain on mortgage. Particulars and plans are now ready, and may be had of W. B. COOPER, Esq. Solicitor, 3, Verulam-buildings, Gray's-inn; at the Mart; and at Mr. EDWIN FOX's Office, 41, Coleman-street, Bank, and Westcroft-place, Hammersmith.

Freehold Building Land, on the Brighton Railway.

MR. EDWIN FOX has received instructions to SELL by AUCTION, at the MART, early in AUGUST, in lots (unless a suitable offer for the whole in one lot be made prior to the day of sale), 19 acres of superior BUILDING LAND, and RAILWAY INN erected thereon, abutting on the station at Horley, 24¾ miles from London, intersected by excellent roads.—Plans of the estate are now ready, and may be had at the Auctioneer's Offices, 41, Coleman-street, City.

important Sale of Freehold Building Land, situate at the Southgate and Colney-hatch Station of the Great Northern Railway.

MESSRS. DUNN and GIBBS beg to announce that they have received instructions to SUBMIT for SALE, by PUBLIC AUCTION, at the MART, on WEDNESDAY, AUGUST 10, at TWELVE for ONE, in 40 lots (unless previously disposed of by private contract), about 30 acres of very desirable FREEHOLD BUILDING LAND, within two minutes' walk of the Southgate and Colney-hatch Station, and fifteen minutes of London by railway, and distant from Muswell-hill three miles, from Holloway two miles, from Highgate by public or six miles, from Stamford-hill five miles, from Tottenham four miles, from Barnet four miles, from Southgate one mile. This estate has a park-like appearance, and is surrounded with thriving trees, and belts of plantations, and the facilities for building operations are increased by a good supply of bricks near the ground. The neighbourhood of Southgate and Colney-hatch is proverbial for its salubrity and beauty of scenery, and from its contiguity to the above places, must increase materially in value, the demand for houses being great. The estate has the advantage of a constant supply of pure water, with capital roads, and is thoroughly drained.—May be viewed. Particulars and conditions, with plans, are now ready, and may be had at the Railway Tavern, Colney-hatch; Torrington Arms, Finchley-common; Messrs. MARTEN, THOMAS, and HOLLAMS, Commercial Sale Rooms, Mincing-lane; Messrs. CHAMBERS and PORDEN, Surveyors, 7, Great Tower-street; and of the Auctioneers, 7, Great Tower-street, and Croydon, Surrey.

PLAISTOW, ESSEX.—Freehold Building Ground, and Two Freehold Cottages.

MESSRS. DUNN and GIBBS will SELL by AUCTION, at the MART, on WEDNESDAY, AUGUST 3, at TWELVE for ONE, in nineteen lots (unless previously disposed of by private contract), valuable FREEHOLD BUILDING GROUND, with frontages on Howard's-road, Balaam-street, Plaistow, Essex, within an easy distance of Stratford, the new Victoria Docks, and Blackwall; adapted for the erection of cottage property or the creation of ground-rents, and giving votes for the southern division of the county of Essex.—being the last portion of this desirable property. Also, Two Freehold Cottages, in Howard's-road.—Particulars, with plans, may be had at the Greyhound (opposite the premises), Balaam-street, and Abbey Arms, Plaistow; the New Globe, Stratford; of Messrs. MARTEN, THOMAS, and HOLLAMS, Solicitors, Commercial Sale Rooms, Mincing-lane; of Messrs. CHAMBERS and PORDEN, Surveyors, 7, Great Tower-street; and of the Auctioneers, 7, Great Tower-street, City, and Croydon, Surrey.

CHAPPLE END, Walthamstow, within six miles of the Metropolis.—Seventy Acres of Freehold Building Land.—To Building Societies, Builders, Brickmakers, and Others.

MR. G. R. NOBLE has been instructed to SELL, by PRIVATE TREATY, with immediate possession, Seventy Acres of good and ARABLE and PASTURE LAND, with a very compact and well-built FARM-HOUSE, convenient and well arranged farm-yard, with every requisite agricultural building. The land is desirably situate, and most eligible for building purposes. The greater portion consists of brick earth, of excellent quality. The property may be viewed and particulars obtained of Mr. NOBLE, Surveyor, Woodford.

WOODFORD, ESSEX.—Desirable Freehold and Copyhold Land and Houses (Land tax redeemed), and a Brickfield, now in full operation, very near to one of the proposed Railway Stations.

MR. G. R. NOBLE is instructed to SELL by AUCTION, at the MART, on THURSDAY, the 28th day of JULY, at TWELVE o'clock, two compact, newly-erected cottage RESIDENCES, with gardens and premises, of the estimated value of £64. per annum. Twelve very eligible plots of Freehold BUILDING GROUND, and a BRICKFIELD (if not previously disposed of by private contract) of about three acres, containing an almost inexhaustible supply of brick-earth, together with the Stock, Trade, and Implements thereon. The demand for bricks in the neighbourhood is very far beyond the supply. Numerous Buildings are in contemplation, which with the railway will very much increase it. The houses and land are worthy the attention of members of building societies and others, offering a safe investment for their capital.—Particulars are in preparation, and may be obtained of Messrs. NORTON and SON, New-street, Bishopsgate; at the Mart; and of Mr. G. R. NOBLE, Auctioneer and Surveyor, Woodford.

SALES BY AUCTION.

CITY IMPROVEMENTS.—Threadneedle-street Widening—Important Sale of Building Materials, Threadneedle-street and Finch-lane.

PULLEN and SON respectfully announce that they are favoured with directions to SELL by AUCTION, on the PREMISES, on MONDAY, JULY 25, and following days, at TWELVE, the whole of the valuable BUILDING MATERIALS of FIFTEEN HOUSES, in Threadneedle-street, Finch-lane, and Spread Eagle-court; comprising about 800,000 sound stock-bricks, several tons of lead, plain and pan tiles, prime timber in roofs and floors, plate-glass and other shop-fronts, glazed sashes, doors, partitions, chimney-pieces, and interior fittings, bell-hanging, spirit-fountain, and fixtures of a public-house, erection of four large ovens, and an immense variety of useful materials and modern fittings-up of a superior character.—May be viewed two days prior, and catalogues had at the Architect's Office, Guildhall; of HENRY CURREY, Esq. 4, Lancaster-place, Strand; and of PULLEN and SON, 80, Fore-street, Cripplegate.

TO TIMBER-MERCHANTS, BUILDERS, BARGE-BUILDERS, WHEELWRIGHTS, AND OTHERS.

MR. MARSH will SELL by AUCTION, on the PREMISES, Carlton Tavern, near Pomeroy-street, New-cross, on WEDNESDAY, AUGUST 3, 1853, at ELEVEN o'Clock, in consequence of the proprietor giving up the premises at Michaelmas next, 3,450 dry and seasoned PLANKS, DEALS, and BATTENS; 800 boards; sixty-six logs of Baltic timber; 13,480 prepared and seasoned floor-boards; sixty two English oak trees of prime meetmgs; 160 oak and ash planks; thirty-two secured oak plank for cabinet-work; 600 oak sash-sills; 300 oak posts; 700 rails; 2,200 cleft pales; 3,600 feet of elm board; nineteen logs of foreign oak, ash, and teak and other blocks; 2,000 feet of glazed drain pipes, joists, slabs, truck, timber carriage, temporary sheds, fence, and numerous useful materials. Approved bills for 30l. and upwards will be taken. Luncheon at twelve o'clock precisely. Catalogues may be had at the Half-way House, Old Kent-road; Castle, Deptford; on the Premises; and of Mr. MARSH, 2, Charlotte-row, Mansion-house.

BUILDING GROUND to BE LET, near the City, situate in the Queen's-road, Dalston; term, 99 years. Ground rents may be purchased down to a peppercorn.—For terms apply to Mr. HUGHES, Solicitor, 33, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Countinghouse on each estate.

BUILDING GROUND.—CRYSTAL PALACE, NORWOOD.—TO BE LET on LEASE, on the road from Anerley Station to the Crystal Palace, and opposite the ornamental grounds of the above building. The property consists of upwards of 30 acres, with a beautifully undulated surface, and thickly wooded, commanding extensive views in Surrey and Kent. It is accessible by good roads and railway, being within five minutes' walk of the Anerley Station, and one minute's walk of the station of the proposed Crystal Palace and West End Railway. There is good brick earth over the whole of the ground, and permission to make bricks would be granted to any one taking a considerable portion. Also about nine acres of very eligible Freehold Land, within three miles of St. Paul's, to be Let or Sold.—For plans and particulars, apply to Messrs. WEBNERT and ASHDOWN, Architects, 42, Charing-cross.

IMPORTANT to BUILDERS and OTHERS.

TO BE LET, on BUILDING LEASES, direct from the freeholder, about TWELVE ACRES of valuable LAND, in an open, healthy, and elevated situation, within three miles of the General Post-office and in the immediate vicinity of a great national undertaking. It comprises extensive frontages, with corresponding depths, and well adapted for the erection of villa residences, there being a great demand for this description of houses in the neighbourhood. Liberal advances will be made to responsible parties as the works progress.—Plans may be seen, and particulars of terms, may be had on application to Mr. HERBERT PRICKETT, Surveyor, at his Offices, 15, Chancery-lane, and 23, Paddington-green.

BUILDING PLOTS to BE LET, North of London, three miles from the Post-office. Omnibus conveyance to all parts of the metropolis every five minutes. Bricks on the ground, and liberal advances for respectable Builders. For particulars, apply to Mr. J. C. BOWLES, 58, Great Coram-street, Russell-square.

TO LET, or the LEASE to be SOLD, very spacious MANUFACTURING PREMISES, No 157, Upper Whitecross-street, St. Luke's, with an excellent six horse power steam-engine fixed; also a strong crane.—To view, apply on the Premises.—Particulars of R. WHITTINGTON, Esq. No. 2, Dean-street, Finsbury.

FREEHOLD BUILDING GROUND.—SURBITON-HILL, ornamentally planted, laid out in sites for semi detached or detached villas, 24 acres. Term, 99 years. The very choicest spots in this beautiful locality, near the church and station.—Apply to JOHN BUNNS WATSON, Esq. Architect, 39, Manchester-street, Manchester-square, who has other Building Sites, of considerable extent, at Brixton, Cricklewood, Hampton-wick, Hanwell, Norwood, and West Cheam. This latter near the station.

TOLLINGTON-PARK.—Valuable Freehold BUILDING GROUND TO BE LET, on Lease for ninety-nine years, at low ground-rents, suitable for the erection of second and third rate houses. Omnibus communication from the City and West-end every five minutes. Money advanced.—For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money and bricks advanced, if required. For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

BUILDING LAND TO BE LET, for Four-Roomed Houses, for ninety-nine years, direct from the freeholder, in lots for either six or twelve houses each, a short distance from Nine Elms, in a best part of Pimlico, Wandsworth-road. Ground-rent about 2l. per house. 60l. clear per house to assist in building the houses, will be advanced to respectable builders for a limited time, and without interest. No charge for leases or mortgages. The roads and drains are made.—Apply, personally, to Mr. PARSONS, Seaton-lodge (opposite Devonshire-road), Wandsworth-road.

FREEHOLD BUILDING LAND, CLAY-STREET, WALTHAMSTOW.—TO BE SOLD, TWO very eligible PLOTS of FREEHOLD BUILDING LAND, situate at Clay-street, Walthamstow, half a mile from the Tottenham station; frontage, 29 feet each plot, by 92 feet depth. Price 35l. per plot, conveyance included.—Apply to G. BATCHELOR, 3, Oxford-Market, London.

TO CHURCHWARDENS AND BURIAL BOARDS OF METROPOLITAN PARISHES, OR BUILDING SOCIETIES.

TO BE SOLD, by Private Contract, in large or small portions, LAND very suitable for burial grounds or cemeteries. The land is situate nine miles from Oxford-street, within a short distance of stations on the Great Western and North-Western Railways, and, by means of the Dock Junction Railway, easy access can be obtained to the centre of the city of London and the eastern part of the metropolis. The Grand Junction Canal, uniting with the Regent's Canal at Paddington, runs through the property, thus rendering access by water from both ends of London obtainable with the greatest ease and economy.—For further information apply by letter to Messrs. POWELL and THOMPSON, Solicitors, 3, Raymond's-buildings, Gray's-inn.

THE WOODLANDS ESTATE, WIMBLEDON.—TO BE LET, on Building Leases, for Ninety nine Years, several PLOTS of LAND, for erecting detached villas, which are much called for in this desirable neighbourhood. Also, two Carcases, at a ground-rent. Respectable builders will meet with liberal treatment.—For particulars, apply to Mr. ROBERT DANIEL, Stone Merchant, Victoria Wharf, Pimlico; or at the Office on the Estate.

FREE PUBLIC HOUSE.—TO BE LET, on Building Lease, for eighty-five years, a piece of GROUND well adapted for the above purpose, in the neighbourhood of the proposed New River Reservoir and the proposed New Mains, Malden-lane, St. Pancras.—For terms, apply to HORACE JONES, Architect, 11, Furnival's-inn.

TO BE SOLD, TEN ACRES of FREEHOLD BUILDING LAND, delightfully situate in East Surrey. Several villas have already been built. Land-tax and tithe free. All frontages, at 50l. per acre.—Inquire, if by letter post-paid, of A. B. 36, High-street, Islington.

THE NATIONAL PROVIDENT FREEHOLD LAND SOCIETY. Offices, 472, New Oxford-street, London.

Shares, 50l. each. Entrance-fee, 1s. 6d.; and Monthly payments, 2s. per share. Interest on payments in advance. No quarterage, back, or extra payments. No fines on unadvanced shares. Prospectus and rules gratis.

PETER WILLIAM CLAYDEN, Secretary.
Agents Wanted.

THE CONSTITUTIONAL FREEHOLD LAND SOCIETY. Enrolled under 6 and 7 William IV. cap. 32. Offices, No. 123, Chancery-lane.

PATRON.
The Most Noble the Marquis of Downshire.
The Right Honourable the Earl of Orkney.
G. H. Vansittart, esq., M.P.

This Society is formed to enable the members to purchase a piece of freehold land, suitable for a commodious residence and garden, with the advantage of a vote for the county, and to afford small capitalists a secure investment for their savings at good interest. All the profits divided amongst the members. Shares, 50l. each. Monthly subscriptions, 5s. per share. Entrance fee, 2s. 6d. per share. Members are allowed 4 per cent. interest on six months' payments in advance, and on paid-up shares, and 5 per cent. on current subscriptions.

A Subscription Meeting is held at the Offices on the third Thursday in each month, when shares will be issued, and subscriptions received, from Seven until half-past Eight o'clock in the Evening.

Applications for prospectuses and shares, stating the name, residence, and occupation of the applicants, with the number of shares, and the counties in which qualifications to vote are required, should forthwith be made to the Solicitors, Surveyor, or EDWARD SCARGILL, Secretary, 123, Chancery-lane

FINSBURY and GENERAL FREEHOLD LAND SOCIETY. Offices, 48, Bedford-row

At a Public Ballot on the 6th July, held at the Crown Tavern, Clerkenwell-green, for rights to Allotments in the Wood-green Estate, the following shares were drawn:—Nos. 263, 297, 307, 314, 539, 574, 599, 629, 872, 441, 527, 561, 855, 848, 849. The following shares were also drawn, but in consequence of the subscriptions being in arrear, have lost the benefit of the drawing:—Nos. 373 and 547. The Third Public Ballot for rights to Allotments in the Wood-green Estate will be held at the Bridport Arms, Harrison-street, Gray's-inn-road, on Wednesday Evening, August 3. Chair to be taken at Half-past Seven o'clock. All shares issued up to half-past Eight o'clock that evening, on which one month's subscription has been paid, will be entitled to the ballot. Monthly subscription, entrance-fee, and rules, 5s. 6d.

The RESERVED PLOT on the FINCHLEY ESTATE will be submitted for public competition on that occasion previous to the ballot. R. A. MARSH, Secretary.

1,000l. will be Balloted for at a Public Meeting of the CLERKS' GENERAL BUILDING and SAVING FUND, at the Assembly-room, Crosby Hall, Bishopsgate, on THURSDAY EVENING next, the 28th inst. at HALF-PAST EIGHT. This Association has been established 16 years, and has already distributed a large amount of money. Persons entering on the evening of ballot will be entitled to apply for an advance. Entrance-fee, 10s. per share; subscription, 1s. per month. There are no arrear subscriptions, nor previous liabilities. E. F. TOULE, Secretary.

TO CARPENTERS, BUILDERS, &c.

TO BE DISPOSED OF, on advantageous terms, an old-established BUSINESS in the above line, in a country town fifty miles distant from London. An active young man will find this a rare opportunity for embarking in trade.—Particulars will be furnished on application directed to J. H. Post-office, Colchester.

WEST-END of LONDON.—An old-established HOUSE AGENCY and DECORATING BUSINESS TO BE DISPOSED OF, on moderate terms.—For particulars apply by letter to B. C. Office of "The Builder," 1, York-street, Covent-garden.

CARPENTER'S, JOINER'S, and UNDERTAKER'S BUSINESS for DISPOSAL, situate near Tottenham-court-road, parted with in consequence of the death of the proprietor, who carried it on with success for many years. The premises consist of eight-roomed house, cellars, yard, &c. Rent 22l.; part let off. Purchase-money, including ladders, tools, &c. 45l.; a bargain. Apply to Mr. ALLEN, 16, Charlotte-street, Fitzroy-square.

TO IRONMONGERS AND OTHERS.

TO BE DISPOSED OF, the BUSINESS of a CABINET and FURNISHING IRONMONGER, with an old-established connexion. The premises are in a first-rate situation for business, at the West End of London, and are very extensive. A fund of 500l. will be required.—For further particulars, apply to Messrs. FULLER and HORSEY, 13, Billiter-street, City.

TO BUILDERS' FOREMEN AND OTHERS.

A SNUG PLUMBING, PAINTING, and GENERAL REPAIRING BUSINESS for TRANSFER. For lease and goodwill, 15l. Fittings, trade utensils, &c. per valuation. This old-established trade (situate near the City) will prove an excellent investment. Rent, 32l. 10s. Good paying connection. Eligible shop and superior premises. The returns proved most satisfactory.—Detailed particulars from Mr. A. WALLEN, Surveyor and Valuer, 12, Featherstone-buildings, Bedford-row. Hours Nine to Five.

WANTED to PURCHASE, an Eight or Ten Horse Power High-pressure Portable STEAM-ENGINE, second-hand, not much the worse for wear; also a Well Crane, with jib, not less than 30 feet, capable of lifting six or eight tons; cash upon delivery, in Worcester.—Parties having such articles for sale will address, INVINCIBLE, Post-office, Worcester.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.

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GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.

WATERLOW and SONS, 65 to 68, London-wall; and 49, Parliament-street, Crown.
Contracts for the supply of large establishments.

TO PARENTS AND GUARDIANS.

AN ARCHITECT, in Edinburgh, has a vacancy for a PUPIL in his Office, which offers unusual advantages to a well-educated youth for learning the profession. Premium 100*l.* A pupil could receive his board in the house of the architect, and be well cared for.—Address, A. B. Mr. McLaren, Bookseller, 139, Princes street, Edinburgh.

CLERK WANTED, in a SAW-MILL.—He must write a good hand, and understand the different descriptions of deals.—Apply, by letter, stating age, where before engaged, and salary required, to ROUTLEDGE and CO. 4, Holland-street, Blackfriars.

ARCHITECTURAL CLERK.—WANTED, in an Office in a large manufacturing town, a DRAWING CLERK. None need apply unless they are well grounded in perspective and can finish a drawing artistically.—Address, stating terms, No. 340, Post-office, Birmingham.

A PRACTICAL Mechanical Draughtsman REQUIRED IMMEDIATELY, who has had experience in the construction of Steam-engines and general machinery.—Apply, by letter only, post-paid, to M. B. care of Messrs. Waterlow and Sons, 65, London-wall.

A YARD FOREMAN WANTED, by a Builder in London. Address, stating age, salary required, and where last employed, to H. Office of "The Builder," 1, York-street, Covent-garden.

IMPORTANT to PLUMBERS, &c.—Wanted an active party to take a Share in the Management of an old-established business, situate in a healthy neighbourhood, doing a large trade in the plumbing and glass business; also manufacturing all kinds of brass and zinc work by steam power. References given and required.—Address, by letter, to J. 37, Argyle-street, Liverpool.

TO PLUMBERS.

WANTED, in London, Three or Four PLUMBERS. None but first-rate workmen need apply. A twelvemonth's character for honesty and sobriety will be required. Liberal wages will be given, and a guarantee for six months' constant work given. Address, J. C. Office of "The Builder," with name, address, and reference.

WANTED, by a Builder, on a permanent engagement, a thoroughly practical and competent CLERK of WORKS or GENERAL FOREMAN who has been accustomed to designing and superintending the erection and finishing of first-rate dwelling-houses, and measuring different works. Unexceptionable references required.—Address, post-paid, stating age, full particulars, salary, and by whom last employed, A. B. care of Mr Wart, 3, N. 11, North Audley-street, Grosvenor-square.

WANTED, in an Architect's Office, a Youth who can trace drawings, and would make himself generally useful. Apply, between the hours of TWELVE and FIVE, on MONDAY, the 25th of JULY, at 2, Windsor-terrace, Pimlico.

WANTED, an ARCHITECTURAL DRAUGHTSMAN, who must be a first-rate colourist, and capable of making perspective drawings.—Address, S. H. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, an ARCHITECTURAL DRAUGHTSMAN, who thoroughly understands the Italian and Elizabethan styles.—Address, A. C. Office of "The Builder," 1, York-street, Covent-garden.

WANTED, for five or seven years, a respectable Youth as an APPRENTICE to the Decorating, Gilding, Painting, and Plumbing business. A moderate premium required. Apply to Mr. DUNDAS, 10, Celbridge-place, Westbourne-park, Paddington.

WANTED, a PRACTICAL BUILDER'S FOREMAN, thoroughly acquainted with all the several branches of the business.—Apply to Mr. H. D. AUSTIN, 3, Cleveland-square, Paddington.

TO BUILDERS.

WANTED by a Practical Joiner, aged 36, a SITUATION as SHOP or GENERAL FOREMAN; he can prepare working drawings, take out quantities, measure, and square up accounts. Unexceptionable references from the situation he is about to leave.—Address, A. B. Post-office, Leamington, Warwickshire.

TO BUILDERS, HOUSE DECORATORS, &c.

WANTED, a permanent SITUATION as a PAINTER, GLAZIER, and PAPERHANGER, by a steady, active, young man; he can do a little graining and writing. No objection to a short distance from town.—Direct to T. C. E. 43, Ernest-street, Hampstead-road, London.

TO LIME, CEMENT MERCHANTS, &c

WANTED, by a Young Man, a SITUATION as TRAVELLER or BOOK-KEEPER, having previously filled similar situations.—Address, A. B. care of Mr. Field, 15, Werrington street, Oakley-square, Camden-town.

TO CARPENTERS.

WANTED to APPRENTICE a Youth, aged 15 years, to the above Trade, a few miles from the City.—Letters address'd to Mr. NUTTAGE, Postmaster, Worship-street, Shoreditch, will be attended to.

TO BUILDERS, &c.

WANTED, by a Young Man, who has been six years in a builder's office, a SITUATION, as TIME or BOOK-KEEPER, DRAUGHTSMAN, &c. satisfactory references given.—Address, C. H. W. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS AND OTHERS.

WANTED, a SITUATION, by the Advertiser, a Carpenter, as FOREMAN or CLERK of the WORKS, to superintend the erection of houses. Unexceptionable references given if required.—Address, X. Y. Z. Office of "The Builder," 1, York-street, Covent-garden.

TO PLUMBERS AND BUILDERS.

WANTED, a SITUATION as PLUMBER, or to take the THREE BRANCHES, having a thorough practical knowledge of all of them, having been four years in his late situation. Good reference can be given.—Direct to X. Y. Z. No. 8a, Grosvenor-mews, Grosvenor-square.

BUILDER'S CLERK.—The Advertiser is in his 23rd year, a Plasterer, who has filled a situation that required the knowledge of bookkeeping and arithmetic, and good handwriting. At moderate salary.—Address, H. L. Post-office, Essex-street, Islington.

TO BUILDERS, &c.

THE Advertiser, a PLASTERER, who will be his leisure from a few days, will be ready to superintend or undertake Piece-work, or would work out a Variation of Two. Apply by letter only to A. B. No. 28, Bridge place, Harrow-road, Paddington.

BUILDER'S FOREMAN CARPENTER.—The Advertiser, an experienced man, aged 36, is desirous of obtaining a SITUATION as SHOP or GENERAL FOREMAN; has been in the situation he is now leaving upwards of seven years. Satisfactory reasons for leaving, which will be given, together with character for integrity, ability, &c.—Address, X. Y. 3, Great Queen-street, Lincoln's-inn-Fields.

TO ARCHITECTS, ENGINEERING CONTRACTORS, &c.

AN ARCHITECT and ENGINEER begs to offer his services to gentlemen in the above or other professions, to prepare, copy, or trace Drawings, where neatness, accuracy, and expedition is required. Quantities for builders' estimates also taken out.—Address, ECONOMIC, W. G. Gray, 2, Russell-street, Brixton.

TO ARCHITECTS, ENGINEERS, SURVEYORS, &c.

THE Advertiser, aged 22, wishes for a SITUATION in London: is capable of making working and finished drawings, measuring out quantities, estimating, and land surveying, and has a practical knowledge of building in general. Salary required, 50*l.* per annum. References as to respectability given.—Address, H. care of J. D. 9, White-street, Pennywell-road, Bristol.

TO BUILDERS, &c.

A YOUNG MAN, who has been four years in the trade, wishes for One or Two Years' further IMPROVEMENT with a Builder. Wages not so much an object as improvement.—Address, A. B. 36, Lillington street, Pimlico.

TO FREEHOLDERS, LAND SOCIETIES, AND OTHERS.

AN ENGINEER and SURVEYOR, of experience, occupied with qualified assistants in surveying and allotting properties, laying out the roads, drainage, &c. could now undertake one or two estates upon the most advantageous terms.—Address, LAND, Office of "The Builder," 1, York-street, Covent-garden.

A THOROUGH PRACTICAL MAN, competent to prepare complete sets of architectural drawings, estimate, measure, and value, all kinds of works, wishes a SITUATION as CLERK of WORKS or General Superintendent on an estate, or to manage a builder's business. Country not objected to.—Address W. 70 Harrow road.

TO CARPENTERS AND CABINET-MAKERS

A YOUNG MAN wishes to IMPROVE himself in either of the above branches, as he has a knowledge of both, in town or country.—Address particulars, post paid, Y. Z. Mr. Herbert's Printing-office, Slough.

ATKINSON'S CEMENT, so long known and esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster; and Seel-street, Liverpool.

PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

THOMAS FREEN and CO. LIME BURNERS, WOOLDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF CANAL ROAD, KINGSLAND BRIDGE; and at Thornhill Wharf, Caledonian Bridge; and No. 8, Wharf, Paddington.

THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wooldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS, on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Puddle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery patented by Mr. Aspdin, much improved the quality of this cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling it only in colour.

ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, in most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London, at their works, Gateshead-on-Tyne; or from their agent, MR. HENRY ROBINSON, 31, King-street, Liverpool.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not regerate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT. 6, South Wharf, Paddington.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat, and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle by those who have hitherto had the monopoly. Manufactured sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

PORTLAND CEMENT WORKS, NORTHFLEET, KENT.—Messrs. ROBINS and CO. submit the attention of their friends and the public to their superior cement, combining the strength, colour, and texture of the stone with which they have so long been favoured.—Orders received at the Works, and at Great Scotland yard, Whitehall.

KEENE'S and PARIAN CEMENTS and FRENCH PLASTER for internal uses.—These well-known hard stuccos dry quickly, and can be painted upon within a few days.—Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

BANGOR WHARF, King's-road-bridge, Camden-town.—STRINGFIELD and COOPER, late W. W. Rawlins, beg to call the attention of Builders and others to their stock of Bangor slates, laths, plaster, Roman, Portland, and Keene's cement, blue lias, Dorking, and chalk lime, plasterers' hair, Yorkshire plain, pan, and ridge tiles, glazed sewer pipes, closet pans, and traps, Welsh fire-bricks, gravel and shells for garden paths, ballast, sand, &c. Materials landed, wharfed, and carted.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Glass, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the first quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf Paddington.

WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the general excellence of which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation to the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 18, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

GEO. & THOS. EARLE, CEMENT MANUFACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Rodging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other.—DOES NOT WASH OFF.—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and to external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 28, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Tubes, &c. manufactured by M. BLASHFIELD, Mill Wall, Isle of Dogs near the West India Docks, and sold at No. 1, Praed-street, Edgware-road, Paddington.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of LIME MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Flare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company.

Nos. 16 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c.—JAMES LYNE HANCOCK, Sole Manufacturer (and inventor), Goswell-mews, Goswell-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now made from 1-8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE for FIRE ENGINES, LIQUID MANURE, and for conveying HOT WATER to BATHS in DWELLING-HOUSES and BREWERIES, manufactured to resist great pressure of any length and size to order.

*** Testimonials may be had on application at the Manufactory.

N.B. VULCANIZED WASHERS and SHEET RUBBER or Steam and Hot-Water Pipes and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

TO RAILWAY DIRECTORS, ENGINEERS, &c. The PERMANENT WAY COMPANY have the satisfaction to announce that the use of their valuable patents for this branch of railway construction is steadily increasing. After a series of careful trials upon the London and North Western and Midland Railways, and personal examination by the directors of these companies of the results attained on the Eastern Counties line, they have arranged for the use of the Permanent Way Company's patents on upwards of a thousand miles of railway; these results having been clearly proved to consist in economy in the wear of both the road and rolling stock, and greatly increased comfort and security to passengers. Testimonials from the first railway contractors may be inspected at the office of the company, and every information as to the cost and best mode of proceeding be obtained by application to Mr. CHARLES MANBY, Civil Engineer, the Manager of the Permanent Way Company, or to Mr WILLIAM HOWDEN, the Secretary, No. 26, Great George-street, Westminster. London, June 8, 1853.

NOTICE.—CHAPPUIS' PATENT MYRIASTRATIC REFLECTOR.—It having come to the knowledge of the patentee that certain parties are offering to the public reflectors to light up dark places, which are imitations and infringements of this patent, this is to give notice, that persons using such are liable to be restrained by injunction, under the Act 15 and 16 Vict. cap. 83, and that information, which may lead to the conviction of the infringers, will be rewarded on application to the patentee, AUBIN CHAPPUIS. Sole Manufacturer, 16, St. Mary-axe, City; or to BARLOW and CO. Office for Patents, 85, Chancery-lane.—July 1, 1853.

THE FARNLEY IRON COMPANY, WORTLEY, NEAR LEEDS,

MANUFACTURERS OF

FIRE-BRICKS, PATENT GLAZED STONEWARE DRAIN PIPES, CLOSET PANS, ORNAMENTAL TRUSSES, BRACKETS, MODILLIONS, PEDESTALS, VASES, &c.;

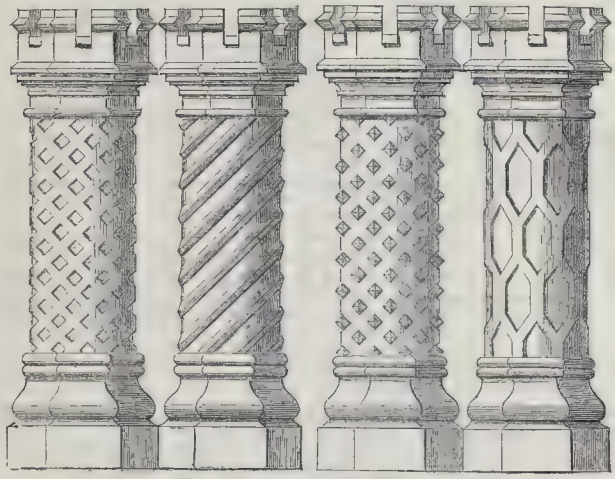
ALSO OF

TERRA COTTA CHIMNEY-TOPS,

In upwards of One Hundred Patterns, of various dimensions and of first-rate design, a few of which are given below,—scale half an inch to a foot.



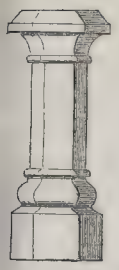
No. 67.—Wind-guard. 2 ft. 6 in.—10s.



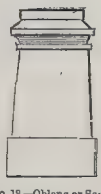
Nos. 46, 47, 48, and 49. —4 ft. 4 in. high—18s. 6d.
" " 6 ft. 0 in. " 25s. 0d.
" " 9 ft. 0 in. " 60s. 0d.



No. 65.—3 ft. 6 in.—7s. 6d.



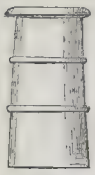
No. 38.—3 ft. 6 in.— 9s. 0d.
4 ft. 3 in.—10s. 6d.



No. 18.—Oblong or Square.
2 ft. 3 in.—2s. 3d.
2 ft. 6 in.—2s. 6d.
2 ft. 9 in.—4s. 0d.



No. 24.—Wind-guard.
3 ft. 6 in.—5s.



No. 3.—2 ft. 0 in.—1s. 6d.
2 ft. 6 in.—2s. 0d.



No. 14.—2 ft. 6 in.—3s. 6d.
2 ft. 10 in.—5s. 0d.
3 ft. 8 in.—8s. 0d.



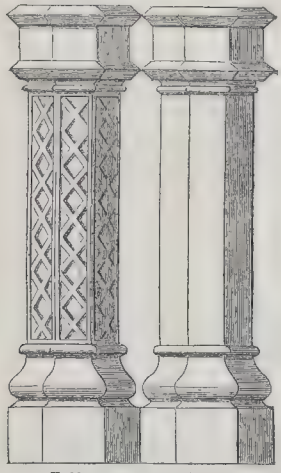
No. 13.—2 ft. 1 in. 4s. 6d.



No. 66.—Plain or Wind-guard
3 ft. 10 in.—10s. 6d.
4 ft. 2 in.—12s. 6d.
4 ft. 8 in.—15s. 0d.



No. 76 (round).—1 ft. 10 in. high—2s. 6d.



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6 ft.—25s.

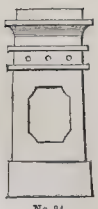
No. 74.
6 ft.—25s.



No. 75 (square).—1 ft. 10 in.—2s. 6d.



No. 80.—4 ft. 3 in.—15s.
6 ft. 6 in.—20s.



No. 84.
2 ft. 9 in.—4s. 6d.



No. 12.
2 ft. 9 in.—4s.



No. 21.
Oblong or Square.
2 ft. 6 in.—2s. 6d.
2 ft. 9 in.—3s. 6d.
3 ft. 6 in.—6s. 6d.



No. 4.
2 ft. 8 in.—2s. 6d.



No. 70.
4 ft. 3 in.—15s.

ARCHITECTS' DESIGNS CAREFULLY EXECUTED, AND WITH QUICK DESPATCH.

Prices quoted are delivered free in Leeds, on Boat or Rail, for any part of the Kingdom.

OFFICES AND STORES.

LONDON..... No. 14, York Chambers, George-street, Adelphi; No. 16, Bath-place, New-road; St. Ann's Wharf, Limehouse.
BIRMINGHAM.. No. 7, Essy-row; also King Alfred-street, adjoining Bingley-hall, and Lawley-street.
BRISTOL..... No. 14, Nelson-street.
LIVERPOOL .... No. 9, Russell-street, and Shipping Wharf, Leeds-street.
MANCHESTER.. No. 43, Travis-street, and 23, 24, and 25, Birmingham-street, London-road.
HULL..... No. 2, Humber-street, and Wellington-street.
BRADFORD..... Houghton-lane, Manchester-road.
LEEDS ..... Wellington-street, adjoining the Midland Station, and Shipping Wharf, Victoria Works, Hunslet.

WHERE DRAWINGS, WITH PRICES, &c, MAY BE OBTAINED.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN 100 FEET BOXES, THIRDS QUALITY.

Inches.		Inches.	Per 100 feet.
6	by	4	
6½	"	4½	
7	"	5	12s. 7d.
7½	"	5½	
8	"	6	
8½	"	6½	
9	"	7	
9½	"	7½	
10	"	8	
10½	"	8½	16s. 3d.
11	"	9	
11½	"	9½	
12	"	9	
12½	"	9½	

Inches.		Inches.	Per 100 feet.
12	by	10	
12½	"	10½	
13	"	10	
13½	"	10½	
14	"	10	
14½	"	10½	
15	"	10	19s.
15½	"	10½	
16	"	10	
16½	"	10½	
17	"	10	
17½	"	10½	
18	"	10	

Inches.		Inches.	Per 100 feet.
14	by	11	
14½	"	11½	
15	"	11	
15½	"	11½	
16	"	11	
16½	"	11½	19s.
17	"	11	
17½	"	11½	
18	"	11	
14½	"	12	
15	"	12	
15½	"	12½	
16	"	12	

Inches.		Inches.	Per 100 feet.
16½	by	12½	
17	"	12	
17½	"	12½	
18	"	12	
18½	"	12½	
19	"	13	19s.
19½	"	12½	
20	"	13	
20½	"	13½	
21	"	13	
21½	"	13½	
22	"	13	
16	"	14	
16½	"	14½	
17	"	14	
17½	"	14½	

Inches.		Inches.	Per 100 feet.
18	by	13	
18½	"	13½	
19	"	13	
19½	"	13½	
20	"	13	
20½	"	13½	
21	"	13	19s.
21½	"	13½	
22	"	13	
22½	"	14	
23	"	14	
23½	"	14½	
24	"	14	

In Cases, 200 feet ..... £1 16 6 } In sizes 40 by 30,
" 300 feet ..... 2 14 0 } to 44 by 31.

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

BRITISH PLATE, PATENT PLATE, SHEET, CROWN, AND COLOURED WINDOW GLASS. PURE WHITE SHADES FOR ORNAMENTS.

Pumps, Water-closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate-street Without, London.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding in weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

For further information apply to Messrs. JAMES HARTLEY and CO. Wear Glass Works, Sunderland

N.B.—The Patent Rough Plate is supplied at a much lower cost than the common Rough Plate.—May 1, 1851.

GLASS.—HARTLEY AND CO.'S GLASS TARIFF NEWSPAPER

Will be forwarded Gratis, on application, "post-paid," to

Messrs. JAMES HARTLEY and CO. Wear Glass-works, Sunderland; or Purfleet Wharf, Earl-street, Blackfriars, London.

OSLER'S TABLE-GLASS, Chandeliers, Lustres, &c. 44, Oxford-street, London, conducted in connection with their manufactory, Broad-street, Birmingham; established 1807. Richly cut and engraved decanters in great variety, wine-glasses, water-jugs, goblets, and all kinds of table-glass, at exceedingly moderate prices. Crystal glass drawing-room chandeliers, for candles and gas. A large stock of foreign ornamental glass always on view.

E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 315, OXFORD-STREET.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP. and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms. CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

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ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

LEAD and WINDOW-GLASS WAREHOUSE.—JOSEPH POULSON, Lead and Glass Merchant, 9, Portman-place, Edgware-road, begs to inform the Trade and Builders that he has on hand at all times a large Stock of every description of Crown and Sheet Glass, Patent Plate, Hartley's Rough Plate and Ornamental Window Glass; and, from the circumstance of having purchased largely before the recent advance in price, will allow as large a discount as any house in London. Enamelled and embossed on ruby, blue, green, or yellow, at very low prices. Sheet-lead, Pipe, Solder, and Brass work of every description. Present price of Sheet-lead, 23s. per cwt.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.

The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, St. Anne, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent, Commercial-road, Pimlico

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge. Office, 8, Crescent-terrace, Millbank, Mr. THOS THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head-stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE DEPOT, Great Western Railway, Paddington.—EDWARD FLUESTER respectfully informs Builders, Masons, and Others that he continues to supply the Box hill Ground Stone, Corsham-down, Combe-down, and Farleighdown Stone, of the best quality, and at the lowest prices. Painswick and Forest of Dean Stone in blocks, steps, landings, or slabs of any thickness.—N.B. Stone and other goods landed and carted.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

(DEPOTS.)

Great Western Railway Station....	PADDINGTON.
Great Western Railway Station....	BRISTOL.
Hope-street, Mount-pleasant	LIVERPOOL.
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

TO CONTRACTORS, BUILDERS, AND OTHERS.

CHEESEWRING GRANITE.—The Cheesewring Granite Company are now prepared to SUPPLY STONE from their Quarries of the first quality, delivered to order. Specimens of the stone may be seen, and prices ascertained, on application to Mr. N. TREGELLES, 3, Pinners court, Old Broad-street, London, Agent; or to Mr. J. J. TRATHAN, Manager of the Works, Liskeard, Cornwall.

Notice of the column extracted from these quarries, which obtained the Prize Medal at the Exhibition of 1851, extracted from the "Official Illustrated Catalogue":

By Professor Axon:—"The specimens which have produced this noble column have not hitherto been noticed, but are capable of great extension in the magnitude of the blocks hitherto from them being displayed unlimited. The granite will be seen to be of excellent quality."

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 8, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of J. UARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

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The Builder.

SATURDAY, JULY 30, 1853.

AIDED by a potent ally,—fine weather,—more potent than a local committee, which, nine times out of ten, is more hurtful than useful,—the *British Archæological Association* commenced, on Monday last, what promises to be a very satisfactory and agreeable meeting at Rochester. Ralph Bernal, esq. long the member for this ancient city, opened the proceedings as president, with an exceedingly able address. Commenting on the rise of antiquarian and archæological bodies, and the spirit which has led to it, Mr. Bernal said,—

"In Paris, the two separate collections placed in the Louvre and in the Hôtel de Cluny, under the control of the Government and the municipality of that city respectively, are receiving from them fresh objects of interest, and a uniform continuance of fostering attention. In Denmark, Saxony, and other countries, their respective governments have sedulously provided for the encouragement of the study of archæology. May I here be pardoned for mentioning that, some years back, I attempted to draw the attention of those who were in authority at the time in this country, to a proper feeling on the subject, in order, amongst other purposes, that a mediæval museum might be established, for the reception of all objects relating to the history of our forefathers, their institutions, customs, habits, and arts? The attempt was unsuccessful; but at length the dawn of a brighter and more genial day appears to have opened. The British Museum, though unfortunately under the disadvantage of following late in the footsteps of foreign national societies, has now turned its attention to the acquisition of objects to which the thoughts and solicitude of the trustees of that establishment were formerly but rarely directed. Still the funds for such purpose are, as it is well known, limited and uncertain, and dependent upon the contingency of parliamentary liberality. The new institution, 'The Department of Arts,' I believe, is forming some collection of ancient objects as models for the School of Design. The glory and happiness of Great Britain are preserved by the virtuous energy which abounds throughout all classes of its inhabitants. Private enterprise, as I have before remarked, here effects what in other countries the State assumes as its own peculiar province to originate and superintend. With reference to the subject of archæology, we have witnessed the success of the unaided efforts of its enthusiastic followers, in the increased and vigorous products of the fertile fields of information which they planted and cultivated. Societies formed for the purpose of archæological research are springing up in provincial and distant localities. Let us hope that all these various associations may work efficiently in the genuine spirit of harmony, and in no other feeling of rivalry but that of evincing a generous courtesy and friendly goodwill to each other."

The speaker then gave a comprehensive sketch of the various objects of interest they had to examine in Rochester and the adjacent district. Of Rochester-bridge, about to give place to a new structure in course of formation by Messrs. Fox and Henderson, he said, "The bridge of Rochester has undergone frequent and considerable mutations. Originally constructed of timber in the reign of King Edgar, it was maintained by Dunstan, Archbishop of Canterbury, and by the contributions of other great owners of lands in the adjoining districts. It was often extensively repaired. In the reign of Richard II. the stone bridge was erected by Sir Robert Knolles and John Lord Cobham, at their own cost. Estates of some value were granted in perpetuity for the repairs and support of the fabric, which was completed between the seventeenth and twenty-second years of Richard II. In the time of Elizabeth an Act of Parliament, the result of a previous commission of inquiry, was obtained, by which two wardens and twelve assistants were directed to be elected annually for the management of the concerns of the bridge; the rental of the estates appropriated thereto being considerable. The record-room, or bridge-chamber, stands near to the east end of the bridge. Underneath the same is the site of a porch of a chapel, or chantry, which was founded by John de Cobham, at the time of the building of the bridge. This chapel, formerly called Allesolven, or All Souls, was intended chiefly for the use of travellers; and three chaplains were appointed to officiate in it, at a salary of 6*l.* each yearly, payable out of the income of the bridge estates."*

We cannot follow the president through his whole address, but must quote the close. Reminding his hearers that the study of archæology is only to be recommended for its useful ends and its capability of administering to mental exercise and amusement, he spoke of its alliance with religious sentiment, and said,—

"The antiquary, wandering through the countless ruins of bygone days, while beholding with admiration the marks they exhibit of ancient genius and exertion, witnesses with reverential feeling the confirmation they afford of inspired prophecy. He contemplates, with humbled mind, the decay of nations, and the desolation of cities. In the mournful wind, that moans through the mouldering arches, he hears the awful voice of the Almighty, whispering amidst the gloom and sadness of destruction, that there is no permanence in earthly things, and that stability is alone to be found in His divine and immutable word! We must all look with anxiety and interest on the efforts and progress of those of our fellow-subjects, who, emigrating from the country of their fathers, carry with them the energy and resolution of their race to distant and unpopulated regions. It is their lot to become the pioneers of civilization, and the founders, we may hope, of new and flourishing societies. But there will always exist in the human breast a lingering fondness for old haunts and old associations. There is a chord in its inmost recesses which, jarred or untuned as it may be by the rude collisions and vicissitudes of life, will ever sound in responsive harmony to the impulse of ancient recollections. We have the happiness to inhabit a land rich in historical and sacred monuments, and teeming with exciting and memorable associations of past events. The hallowed temples of the worship of our ancestors—the noble castles, which, menacing or protecting by turns the freedom dear to Englishmen, always bore testimony to their perseverance and courage—the sites of the domestic hearths of our forefathers—the graves which sheltered their last repose—the venerable groves, scenes of their sports and pastimes, whose leafy arches and lofty trunks were the fit models from which the pious architect of early ages formed his sculptured curves and solid columns, devoutly remembering that God made the country and man made the town—all, all are entitled to claim our direct and enthusiastic attention and admiration. They are bound by ties of close and endearing affinity with the institutions and constitutional establishments of our country. From every consideration of what is just, good, and patriotic, let me earnestly call upon you not to suffer them to fall a prey to chilling apathy, barbarous destruction, or mischievous ignorance. Let us all venerate them with sincere and affectionate attachment; and, while exerting ourselves to diffuse that feeling generally throughout the land, let us cordially unite in applying our best abilities to their preservation, maintenance, and protection."

The CASTLE of course had early attention, and Dr. Beattie read a very well-written paper on its history, tracing its annals and the sieges it had sustained. The members then proceeded to inspect the massive ruin, and

Mr. Duesbury read a description of the remains. "I may state generally," said he, "that the space within the walls was usually, in mediæval castles, divided into two courts, the one surrounded by stables and inferior offices, and the other by guard-houses and superior offices and residences; and that in the highest and least accessible part of the inclosure, a *keep*, or strong tower of ultimate defence, was erected. The remains of this castle-wall show that it was of great height and strength. The portion now standing to the south-west is, I imagine, nearly 40 feet high, especially towards the river, which swept round the foot from the bastion at the south-eastern corner, at the back of the keep, to the sally-port, or strong gate, at the north-west angle, which flanked and commanded the ancient bridge. The entrance from the land side was in the curve of the wall to the north-east. This appears to have had circular bastions at the entrance, with a curtain between. The space inclosed is about four acres. You have already heard, that from the earliest ages, even in the time of the original Britons, before the coming of the Romans, this was an important place of defence; and very naturally so, since it guards the pass of the only river between the south coast and the heart of the country."

The keep is square on plan, and measures, exclusively of the entrance-tower, about 70 feet each way; there are square towers without buttresses to three of the angles, but the fourth, viz. the north-east one, has a circular tower; this, however, being carried up square at the top. The entrance-tower, about 17 feet by 30 feet, is on the north side. The building has four stories, and is from 105 to 110 feet high to the top of the towers.

"The middle wall is 5 feet thick, and the outside walls 12 feet thick: the walls are built of rough or unsquared Kentish ragstone, with freestone (oolite) dressings and quoins."

In the centre of the division-wall is a well: it is circular, 2 feet 9 inches in diameter, and faced with ashlar all the way down. We were told it is about 60 feet deep to the water, and that at the high tides the water is about 10 feet deep: the water, it was said, is good, and not the least brackish.

This building has been a ruin for upwards of 200 years, and a certain Sir Walker Welden, a descendant of Sir Anthony Welden, who lived in James I.'s time, sold the stone steps of the staircase to a mason from London. He wanted to sell the whole building as old material, but fortunately it was not worth the expense of pulling down.

Mr. Duesbury took a novel view of the question of the age of the castle, the gist of which may be gathered from his summing up:—

"Upon the whole, and taking into account that Rochester was a stronghold in the time of the aboriginal Britons; that the Romans had an important station here, and from time to time, during the 400 or 500 years (nearly 500) they were masters of Britain, they walled the city, and built and enlarged the castle, so as to make it a place of exceeding strength and security; and recollecting that, in the Saxon times, Rochester was more known as a castle than a city,—Bede calls it 'The Castle of Kentish men;' and above all, bearing in mind that at this the most important pass in England, a very strong fortress would always to a certainty be maintained,—I have come to the conclusion that Gundulph did not *build* this tower, and that the ruin in which we now are is of Anglo-Roman and Anglo-Saxon workmanship."

We shall give the writer an opportunity to state his argument fully hereafter. We annex a view of the interior of the castle as seen from the staircase, which will give an idea of its character to those who have not seen it, and refresh the memory of those who have.*

There are many curious houses in Rochester. The quaint-looking specimens which stand on both sides of the High-street are not of earlier date than the beginning of the sixteenth century. There is a very interesting specimen on the east side of the gate of the precincts of the cathedral, with which it has once communicated by means of an arch in the side-wall. One of

* A long paper on the Bridge, by Mr. G. H. Adams, was read at the evening meeting.

* See p. 489.

the apartments gives a tolerable notion of a Henry VIII. wainscoted room. The panelling of the sides and the beams of the ceiling are carved with foliage and linen panels. The initials W. & A. linked together with a true lovers' knot, are probably those of the proprietor and his wife.

Of Eastgate House, in the High-street, one of the most picturesque of those in Rochester, a view will be found in our Fourth Volume, p. 571. There is a house at the south-west end of Crow-lane, opposite to the open piece of land called "*The Vines*," which is known as the Restoration House. This is of the time of Inigo Jones. Charles II. when he returned to England, after the death of Oliver Cromwell, was received at Rochester, on the 28th of May, 1660, when he knighted Mr. Francis Clark, who resided in this house.

On this subject, namely the ancient houses, Mr. Charles Baily read a paper at the evening meeting, the pith of which we give in a separate form. At the same meeting,

The Rev. Thomas Hugo, justly thinking that there is a logical connection between the doer and the thing done, read an able and interesting paper on Bishop Gundulph, and other ecclesiastical founders, of Rochester. He concluded his memoir with the following account of Gundulph's death:—

"As he drew near his end, his friend Anselm came to see him, and perceiving how it stood with him, administered to him the last rites of religion. Gundulph, amid the sighs and tears of all about him, delivered into his hands the family which he had collected, and, as long as life remained, had guarded and guided aright. On what he considered the approach of death, his devotion to the monastic rule became more strikingly evident. He would not die as a bishop in his own house, but as a monk, among monks, in a lower place. He then gave away his clothes, and every garment he had, however valueless, relieving himself of what he thought a degrading weight of ownership, and distributing them as a free monk among the brethren and poor. He then desired to submit to the discipline of his order, in correction of what he considered his grievous offences. The brethren, however, thought fit to overrule his wishes in this particular. He gave his episcopal ring to Rodulphus, abbot of Sues, a foreigner, who came to visit him; manifesting thereby what his biographer seems to consider an act of prescience, inasmuch as Rodulphus was eventually his successor in the see. So he continued to his last day, on the morning of which he heard mass in the chapel of the infirmary; and during the reading of the Gospel he caused himself to be raised up, through reverence of the mystery there celebrated. As evening came on, he lost his speech, and up to midnight lay without voice, but in full possession of his senses. Just afterwards, his last moments drew on. The usual signal was made, and the monks poured hastily into his chamber. After repeating the Creed, and singing the Psalm and Litany, they began the *Commendatio Animæ*, the voice of the reader barely audible for the sobs and weeping around. Just as they came to the passage in the 79th Psalm, 'O Lord of Hosts, turn, look down from heaven, behold and visit this vine,' his spirit left the world. He passed away as morning was breaking, on the 8th of March, in the year 1107-8, the eighty-fifth year of his age, the fifty-first from his assumption of the monastic habit, the thirty-first of his episcopate, and the eighth of the reign of King Henry the First. His decease fell in the third week in Lent; and it was remarked that the very office which was sung on the day he died was the same as that for the day of his consecration thirty years before. 'Oculi mei semper ad Dominum,' it ran—'Mine eyes are ever towards the Lord, for He shall pluck my feet out of the net,'—words which were considered most applicable to the events of his life and the graces of his character. He was buried by Anselm with all the honour becoming his station and deserts, before the altar of the Crucifixion, at the junction of the nave and choir, where this altar usually stood.

I have nothing further to add than the remark, that on the west front of the north-west tower of the nave, there is a very ancient episcopal statue, intended, as it is thought, for Gundulph. It is very much mutilated, but enough remains to show its character. One peculiarity is very striking, viz. the position of the crosier, which crosses the body from left to right. There is no tomb that can with the smallest certainty be identified with him. Gundulph, however, wants no monumental record in Rochester. You have but to walk its streets and look around you, and evidences of him meet the eye on every side: as of a great, though not a greater man, many ages afterwards, it may be rightly said,—

"'Si monumentum queris, circumspice.'"

On Tuesday, the Cathedral was visited, and Mr. Ashpitel, who has for several years ably officiated in this respect for the association, delivered a discourse on its architecture, and afterwards accompanied a large audience round the building. To this we shall return, as we intend giving an illustration of the cathedral.

Mr. W. H. Black's discourse on the contents and compiler of the celebrated record of Rochester, called *Textus Roffensis*, which followed Mr. Ashpitel's, must be placed amongst the most valuable results of the congress. Mr. Black identified the record as the work of Humphery, the precentor.

Mr. Pettigrew, in the evening, read a paper involving very considerable labour and research, on the "Leper Houses" of Kent, and their establishment in England, with some frightful details of the extent of the disease; Mr. Monckton, some observations on Gavel-kind (the Kentish custom of descent to the youngest son); Mr. Steele, an account of the Roman burial-ground at Strood; and Mr. George Wright, a pleasant paper of associations connected with the well-known church and seamark, Reculvers.

The first excursion was made on Wednesday, and included Halstow Church, Cowling Castle and Church, Cliffe Church, and Cobham Hall. Shorne Church was in the programme, but was passed for want of time. At Halstow, where the walls and arches are miserably daubed with black paint, there is an early font, and in the pavement is part of a fourteenth-century brass of good character. The entrance gateway to Cowling Castle is especially remarkable for its bold machicolation, and for the sculptured charter on the face of one of the towers, with its seal, apparently of bronze. It proclaims that the castle was made in help of the country:—

"In knowing of which thing
This is chartre and witnessing."

Cowling Castle was the castellated and moated manor-house of John de Cobham in 1390. Its present owner hospitably extemporized a luncheon on the grass, having first taken the party over the grounds. The chancel of Cowling Church has six stone stalls on each side, three sedilia, and a piscina of good Early English work.

The church at Cliff is an important structure, and should have a little more of Archdeacon Croft's care. The nave is 100 feet long; the chancel 50 feet. The latter is of the Decorated period, with some beautiful windows, sedilia, and piscina. The latter should be repaired and made perfect. On the opposite side is a Perpendicular tomb, or Easter sepulchre. The pulpit, with hour-glass-stand dated 1636, is an interesting specimen of the art of that period. The additions to the transepts, which are Early English, are curious. On the east wall of the south transept are some mural paintings,—"The Last Judgment," &c.—part of which would seem to be as early as the fourteenth century. This church will well repay a quiet examination.

The carriages being once more entered, and a persevering little sketcher in pink forced from her employ, the party went on to Cobham Hall, well known to many of our readers. It is a late Tudor building of brick, with stone dressings, the wings dated 1582 and 1594; the centre, 1662. Part of the latter is attributed to Inigo Jones, though the date of course shows that he did not finish it. The music-room, a very lofty and noble apartment with an over-adorned ceiling, is said to be his work. There is an elaborately sculptured marble chimney-piece in this room, by Sir R. Westmacott. In the other rooms there are some marvellously fine paintings by Vandyke, Titian, and Guido. The pictures in what is, *par excellence*, the gallery, are hung with so little taste or judgment, that their worth is much lessened.

Cobham Church, with its fine Early English chancel, Perpendicular sedilia and piscina, beautiful *Cinque Cento* altar tomb, and unique collection of brasses in memory of the Cobhams, was visited; and it was past seven o'clock before the association sat down to a public dinner at the Crown, where we left them, in order that we might tell our readers what had been seen and done.

ON THE HOUSES OF OUR ANCESTORS IN KENT.

OF the domestic architecture of the Normans we have no example remaining in or near to Rochester, but houses of this early period do still remain in other parts of the kingdom. There is a Norman house at Minster, in the Isle of Sheppy, which belongs to the twelfth century.

Manor-houses were for the most part small, and generally somewhat square in form, often two stories high, the rooms in the lower part being vaulted. Fireplaces were very few in number; sometimes there was but one in the whole building, and this was in one of the upper rooms. A great peculiarity of these early houses was the absence of an internal staircase: the approach to the upper rooms was from the outside of the house. In the Bayeux tapestry we find the representation of a Norman house such as I have described,—but there is no fireplace nor chimney shown. When fireplaces were introduced, they were often of an ornamental character: we find one at the Jew's House, at Lincoln; and I may perhaps mention the fireplaces of the Castle, in this city. Of the larger Norman houses we have only portions remaining, and it is probable that these partook more of the character of the castle than of the house.

Oakham Castle, in Rutlandshire was built in 1180, but the original hall is all that remains of this date. It is divided into three aisles, by two rows of columns and arches.

Of Norman staircases, may be mentioned the fine example remaining at Canterbury: each side of this is formed with a screen of ornamental semicircular arches on columns, supporting a roof: it led to what was the strangers' hall of the convent, and beneath which was the treasury: it appears to have been always an external approach.

The same sort of plan continued in the thirteenth century, and at the Temple Farm, at Strood, we find the lower vaulted story of a house of this time remaining. This is a large apartment, now used as a coal-cellar, one bay wide and three in length, and stands lengthways, east and west. The entrance is on the north side of the west bay, and on the south side are still some of the original windows, one of which is quite perfect, very long and narrow, and only ornamented with a narrow splay on the outside edge: it is square-headed, with a small pointed arch above it.

In the year 1316 one Symond Potyn founded the Hospital of St. Katherine, in the Eastgate, Rochester, and in his will describes himself as "dwellinge in the inne called the Crown, in Saint Clementes,* parishe of Rochester."† This description, and the general antique character of the Crown Inn, naturally lead one

* The Crown Inn.

† St. Clement's Church stood on the north side of the High-street. Some portion of it was standing in 1850.

to inquire if there is in it any architecture of an early character remaining?

Portions of the ground-floor and basement are of such a character that we may with certainty consider them as being a part of the residence of the said Symond Potyn, and were probably built in the early part of the thirteenth century.

Passing through a doorway, which is evidently in the situation of the original entrance from the High-street, and descending a flight of stone steps, we find ourselves in a vaulted room running north and south, about 40 feet long, 15 feet broad, and 15 feet high: it is vaulted with three bays of vaulting, the arches next the side and end walls springing from flat piers, which project beyond the face of the wall. The transverse and the diagonal-arched ribs spring out of these piers without capitals of any sort. The ribs are of the Reigate fire-stone; and the filling in of the vaulted ceiling is of squared chalk. On each side of the door from the street is an original window, the sills of which are about level with the pavement of the present footpath outside.*

The crown of the arch of this vaulted storehouse is about 8 feet above, and the floor about 7 feet below the present level of the street. On the west side of the centre bay is a door, from which an arched passage leads into a second vault about 18 feet square, the floor being on the same level as the *last;* but here the height to the crown of the arch is not more than 10 feet from the floor. This vault has an octagonal column in the centre, so that it is divided and vaulted into four bays, and the whole of the details are in accordance with the first-described apartment. There can be no doubt these two cellars are of the same date. There is an ancient door on the south side of the south-west bay, and a window close to the arched ceiling directly opposite to it, which must at one time have looked into the High-street. The substructure of the "Crowne Inne" is a large rambling erection, constructed of timber and plaster, and of later date than the cellars. The arched gateway, with its moulded jambs and carved spandrils, are of the time of Henry VII. and there are to be found some moulded beams and minor details of the same period in other parts of the house.

On the eastern side of the Crown Inn yard stand some brick buildings, now overgrown with ivy; these contain rooms which are said to be those which were occupied by Queen Elizabeth on the occasion of her visit to Rochester on Sept. 18th, A.D. 1573, when she took up her abode at the Crown Inn for five days. The present stabling is traditionally called Queen Elizabeth's dining-room. In one of the upper rooms is a chimney-piece carved in the style prevalent in the time of James I. and to which period rather than the days of Elizabeth I should feel inclined to date the building.

Of the houses of the fourteenth century we find many examples in Kent. The hall now became the chief feature of the house: externally it was distinguished by its large gables and high-pitched roof, and internally it was the apartment most in use. In it the owner, his guests, and servants ate, drank, and lived; and oftentimes the hall was used by the domestics for sleeping. The hall has often been preserved when the rest of the house has been destroyed. The remains of the great hall of Mayfield Palace, in Sussex, is perhaps the grandest apartment we have remaining of the period. It is not later than the time of King Edward II.: the rich, varied, and elegant tracery of the windows, and the method adopted by the architect to roof over the great span of at least 40 feet from side to side, without the aid of internal columns, must delight every scientific admirer of what is beautiful in architecture. This apartment, about 70 feet long, is divided into three bays, externally by buttresses and internally by two huge arches of stone from wall to wall; on these moulded arches was laid the woodwork of the roof, the timbers of which were exposed to view; these timbers are now gone, but we learn what their forms must have been from the roof of the hall at the Moat House, at Ightham, in Kent. This room is still most perfect; it has the arches of stone as at Mayfield, which support the purlins, kingposts, and rafters of the wooden roof, which appear never to have been altered in any way since the first erection. In this hall the present windows and the fireplace are of later date, having been added to the building in the time of Henry VIII.; one of the original windows of two lights, with tracery in the head and a transome, however, can be traced in the side walls: a building of the fifteenth century having been erected outside of the hall appears to have been the occasion of the alterations I have noticed.

At the Moat House at Ightham, there is not much besides the hall remaining of the first foundation; but the fifteenth-century additions are most interesting. The buildings stand round a courtyard; a somewhat wide and deep moat surrounds the whole; the walls rise directly out of the water. The principal entrance to the courtyard is by a gate under a low tower; this gate has been prepared to receive a drawbridge. The house appears to have been built with a view to defence, like most houses erected previous to A.D. 1600.

A most interesting part of the house is the chapel, which is placed on the second story. It is of the time of Henry VIII. and is mostly constructed of timber and plaster; it is divided by a screen into nave and chancel, and altogether is in a very perfect state. The ceiling is close boarded, of an arched form, and is painted with what appears to be the several Tudor badges.

It is much to be regretted that this very interesting house, on account of its distance from Rochester, cannot be visited by the Society during the present congress. Our members will, however, have an opportunity of viewing a house of the same date—I mean Battle Hall, near Leeds Castle, where there was a roof of the same character as at Mayfield and the Moat, and where there is a curious dark vaulted apartment at the east end of the hall, probably a cellar, with a sort of principal chamber above it, having a fireplace.

At Nursted, near Gravesend, are some of the remains of the old hall of Nursted Court, said to have been built by Stephen de Gravesende, who was Bishop of London in 1318, and who died in 1338.

The predecessors of the present proprietor, Capt. William Edmeades, divided this ancient hall into several floors, and erected a modern house against it, so that only a part, but at the same time sufficient, can be seen to show the construction of this curious relic.

The interior of this hall is distinguished by the singular construction of its roof, which, like that of the hall of Oakham Castle, stood on four columns, standing about 4 feet within the walls; but in this case the columns are of wood instead of stone, as at Oakham. From these columns spring arches of timber, upon which rests the immense weight of the roof.

The object of the architect has been evidently to relieve the walls from the weight of the roof; and although he has, perhaps, quite succeeded in doing what he wanted, yet the design will in no way whatever compare either in scientific construction or in elegant forms with the fine example at Mayfield.

The county of Kent contains many houses of the fifteenth century in a pretty perfect state. In very large and spacious houses the plans vary, but the several buildings generally surround one or more quadrangles, as at Penshurst Place and Hever Castle, Knowle, and several others.

Smaller houses were generally planned, however, on one principle, and the form of the plan somewhat resembled the letter I. The hall, which still continued the chief apartment, being in the centre, generally occupied the whole height of the building, as at Mayfield and Penshurst.

The chief entrance to the house, which was often beneath a porch, was at one end of the hall; the door to the gardens was opposite to it, the hall being shut off by a screen, thus forming a passage through the building. On the side of this passage, opposite to the end of the hall, was one or two and sometimes three doors, leading to apartments variously used, such as the cellars, kitchens, butteries, &c.

The buildings at Cobham College, although not exactly to be considered a private house, show this arrangement. The fireplace now began to be introduced into the hall.

C. BAILY.

* There appears to have been a door or a window, probably the latter, on the west side of the north bay; this possibly looked into another room of the inn.

THE RESTORATION OF ANCIENT FAMILY MANSIONS.

THE PERILS OF REPAIRERS.

IN looking over the pages of your useful periodical, it has sometimes occurred to me that it would be acceptable to the general reader, and not uninteresting to the professional one, if persons engaged in the repair and improvement, or intended improvement, of their houses, and laying out of gardens and grounds (at all times a tolerably numerous class), were to make up their minds to approach you and your skilful contributors with some of their plans and their difficulties, and to unburthen their minds of some of their woes; for woes they are sure to have, either of other people's making, or their own, or what is commoner than either, of their own making, taxed upon others.

I have been led to this suggestion—and propose to act upon it myself with your permission—from the numerous instances I have stood witness to, from my earliest recollection, of gentlemen "burning their fingers," as the phrase is, by wholesale alterations of their mansion-houses, not only at a cost exceeding in *thousands* of pounds what they had commenced hoping to execute in *hundreds*, but, what is more provoking, with heaps of blunders left to mourn over, the recountal of which might leave the fair doubt on one's mind,—as it often has on mine,—whether, after all, they were not better off before they began, with only the errors of their forefathers to criticise, instead of lamenting their own.

If this view seems somewhat exaggerated, I can only suppose, in explanation of it, that my experience has been unfortunate, perhaps peculiar. There are few things in which I have taken more interest than these repairs, restorations, and rebuildings of dilapidated or inconvenient family mansions; and amongst my nearest relatives and friends, I have, from very early years, had ample opportunities of gratifying it. And without quoting Horace, about "the avoidance of errors marked in others," I will at once proceed to state to you, that at a somewhat later period of life than it usually falls to, I have entered on the possession of an old family mansion, once deserving the name of a good specimen of the Elizabethan style, if "style" you will allow it to be called, but which some five-and-thirty years ago fell under the hands of an architect (?), a builder, an amateur clerk-of-the-works, and a village carpenter, whom I sometimes venture to speak of "individually and collectively" in a way that gave so much offence at Rome, in Nero's time and from Nero's mouth, that I shall leave the wholesale wish unuttered, and pursue the milder and more diplomatic course, of touching in detail the feelings of others, instead of prematurely venting my own.

Indeed, I might even go further than this, and admit that, taking into consideration the kind of taste and knowledge prevalent at the time, the remoteness of the spot, and the difficulty I have myself found during a somewhat heavy experience of some fifteen years in getting executed the most ordinary kind of estate-repairs, or finding a workman of the commonest intelligence in laying a brick, shaping a timber, painting a wall, or fixing a pipe, I have sometimes lulled myself with a sense of thankfulness that matters are no worse, and that my poor old house retains *some* vestiges of what it *was* at the time when, with all their monstrosities of construction, the artists of the Tudor and early Stuart dynasties had yet an eye for ornamental gables, deep cornices, Ionic and Corinthian pillars, carved-oak panels, balustraded staircases wide enough for a wagon and solid enough for eternity,—no matter in what "admired disorder" all was confused together,—instead of the (how shall I describe it?), shabby, shallow, whitewash style that kills every sentiment, and, "like the sun in March, doth nourish agues" in one's very heart, to look at.

Even as I write, I am sitting in a room

fitted up with modern bookcases of village-carpenter design, standing out in sad relief from walls of a cold, light, dirty-blue, coloured upon the plaster, and terminating in a thin course of plain 3-inch patternless cornice, against the stark white ceiling, where once there rose, with measured flights and broad landing-places, as noble a specimen of Elizabethan oak staircase as ever was torn down by ruthless hands, and piled away in a stable-loft! *Ex uno disce omnia:* I need describe no further.

Fortunately, a handsome west front, of the well-known letter E construction, with its ogee gables and square-mullioned windows was left unaltered, except by the addition of an unsightly portico filling up the deep central recess, which a charge or two of gunpowder under one of the *triangular-shaped* brick pillars might perhaps relieve me of, without any damage proportionate to its quick removal. Should you read of such an "accident" in the daily paper be pleased to correct the version of it before it appears in the *Builder*, that I may have the full credit of the "wicked and successful attempt."

In sad and sober seriousness, however, I should think there exist few such specimens, in the Elizabethan mansions of England, of that sort of havoc known in ecclesiastical architecture under the name of the "churchwarden style," as I could show; and what adds to the trouble and complication of the problem it bequeathes to me, is, that at the making of these "improvements," one principal object was to approach the house at this same gabled front, and to keep in existence a curious old tumble-down piece of building on the east or opposite side—once applied to conventual purposes (before the suppression of the monasteries), through which the entrance formerly ran into a square court, which the house surrounds, the chapel of the convent forming the north side, and the south consisting of a still more ancient edifice, dating from the 13th century, and once evidently of higher use; but during the existence of the convent, used as the refectory, and now forming the principal part of the offices of the house, with an additional wing thrown out still to the south (that is, *pointing southwards*), at the time of the more recent alterations I first spoke of. So that, archæological and conventual (and I might almost add *conventional*) interest apart, for a moment, I am in this dilemma: a single front, to the west (with three points north), shows the blessed sun to all my living-rooms, squinting sideways at the end of the longest summer days: all the rest of the days of the year, and from morning till night, he shines unseen behind me. ["Do you call this backing your friends?"]

Now there are, I am sorry to say, and find to my cost and daily suffering, *two* uses for a house. One (which I used to think the only one, till I became aware of its quite secondary and unimportant character) is to live in: the other, and really momentous one, is for your friends, or foes, as the case may be, to look at, and give you their opinion about. To this everlasting tyranny,—a word, by-the-by, for the propriety of which I appeal to all owners of houses that people come to lionize,—to this *tyranny*, I say, there is but one antidote,—that, luckily, no two of your "tasteful" advisers agree with each other.

The confidence, the self-reliance, the air of unapproachable infallibility, with which opinions the most diametrically opposed are launched forth daily in my presence, is, considering the supposed scarcity of that curious commodity, good taste, "a thing," as Dame Quickly would say, "to thank God upon." I might, with some seriousness, say, I know not a more unamiably arrogant feature of character than that commonly displayed by a class of people numerically considerable in this sight-hunting country, in a sort of supercilious assumption of superior taste. We know perfectly well, in practice, that it is an eminently rare quality, and generally, if not always, accompanied by a modesty sometimes excessive. What a pity it is therefore that every lounging sight-seer, though—

> "With eyes that hardly serve, at most,
> To guard their master 'gainst a post,"

thinks it necessary, in giving his opinion, to lay down the law as if his *fiat* was a thing that none but a being absolutely irrational would venture to controvert.

But I will not press this subject further, lest I should seem to fall into the evil I am noting and appeal against. It is a favourite theory of mine (marked "private") that architecture, scientific as it is, should nevertheless be two parts *heart* to one of head. I am sure the rectilineal monstrosities of coldness and flatness that I have had the misfortune to see go through all the stages of tracing-cloth, pasteboard, and working plan, into actual brick and stone, in my time, could never have passed current as "domestic architecture" of the nineteenth century, were it not that every warm and loving sentiment that gives to man his best attributes and relations had been banished from the pencil as a breach of mathematical truth: so let not my pen fall into the error I deprecate, nor criticise even the critics too hard-heartedly. In the application of mathematical truth to domestic uses, it always has seemed to me that geometry itself meets humanity half-way, and yields its noble outlines to the gentle and endearing hand of love,—love, not special and individual, but love in its fullest, broadest, noblest sense,—love of man, of the whole human race, of nature, of art when true to nature, of beauty, and of *truth* as comprising all.

But this will never do! Let me return, *sutor ad crepidam*, from the statement of "positions" architectural or moral, to that from which I started—my own position *actual!* Surrounded by a structure whose "charming morsels," of every varying date, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth centuries, hidden away, as it were, in nook and cranny, have been smothered by the modern Babel of bricklayer, plasterer, and joiner, I vent my head-and-heart-ache upon your pages with an indefinite yet cheering sense of hope,—hope in the present and the future of domestic architecture in England; and, with the aid of such pens and minds as those of Hudson Turner, Parker, and the author of "History in Ruins," hope for the re-collection and restoration of the past.

C. W. H.

ANCIENT CHURCH ARRANGEMENTS.

IN the lecture on "Basilicas and the Ancient Christian Church," delivered before the Institute of Architects, by the Rev. Richard Burgess, as printed in your columns, p. 449, I perceive that the rev. lecturer has fallen into the common error of taking the buildings in question with existing alterations, and treating these as constituent parts of the original structures. His own words,—"As the rigour of ecclesiastical discipline increased, and men were found to submit to it, the interior arrangement of a church became more complicated, more divisions and separations were wanted,"—furnish the key to one series of changes in the ancient Christian church.

In one part of the lecture it is stated, that the bishop and the presbyters succeeded to the prætor and the judges in occupation of the semicircular recess; and then we are informed that on this platform stood the "altar overshaded by the baldachin."

Both these descriptions are true, if spoken of in succession; but the bishops and presbyters ceased to sit on the seats at the extreme end of the platform before any altar and canopy were placed on it: neither was the platform or "bema" ever called the sanctuary until its original use was changed, by making it the place for the communion-table. That table itself, at first a moveable wooden one, Cardinal Wiseman tells us that they have preserved at Rome,—the very one St. Peter used,—the "*oyster-board*" as the *Ecclesiologist* calls it, no doubt *symbolically*, in allusion to Peter's calling. This simple table, which for centuries always stood in the midst of "the faithful," was changed into the fashion of a tomb, and that tomb, although without the least resemblance to an altar, was ultimately called by that name. When thus in name and use removed from its position among the laity, and placed behind the ministers—themselves changed into priests—then the low cancelli and curtain, once only employed to screen the holy table from infidel gaze, were set up to prevent the degraded laity from seeing or approaching that which the "priests" had now arrogated to themselves.

These are facts which I am prepared to prove, not simply by argument, but by the sight and touch, for those who doubt may yet ascertain by inspection of those ancient structures, of which Rome is the custodian, what the original arrangement was, and trace the successive steps of the alterations made to fit them for the changes made in ancient customs and doctrines.

The Rev. R. Burgess is also wrong in stating that the ancient churches were built east and west: there is but one at Rome so built, and that has the chancel at the west end. The orientation of churches is a superstition of the Middle Ages.

J. E.

MEMS. FROM IRELAND.

SEVERAL new churches have been consecrated in West Galway during the last year, and other churches and chapels of ease are in course of erection. A number of school-houses have also been completed, and others commenced.

The new hotel at Athenry is in progress, and the works are up to the level of the first-floor.

A lofty tower is to be erected in connection with Lismore Castle, the seat of the Duke of Devonshire.

Adare Church is to be still further extended. The dowager Countess of Dunraven has contributed 500*l.* for the purpose.

The Commissioners of National Education intend erecting school-buildings at Ballymoney, county Antrim, and tenders for the erection of same have been received.

Improvements and additions to Armagh gaol are being commenced.

A new Presbyterian College is to be built at Londonderry. The trustees of the Magee bequest have accepted the designs submitted in competition by Mr. E. P. Gribbon, architect. Some public and private building-works are in progress, as also in contemplation.

The Royal Irish Academy have added considerably to their new premises in Dawson-street, Dublin.

The cathedral of Killarney is to be completed under the direction of Mr. J. J. M'Carthy, M.R.I.A. architect. The present building was designed by the late Mr. Pugin. We are told that, to aid in carrying out this work, some handsome donations have been received. The Earl of Kenmare, who is the owner of large estates in the locality, has lately subscribed 1,000*l.* and several sums previously; also, that the Right Rev. Dr. Egan has consented to remit a debt of 3,000*l.* advanced some time since, and in addition to his former subscription, has presented 500*l.* more to the building funds.

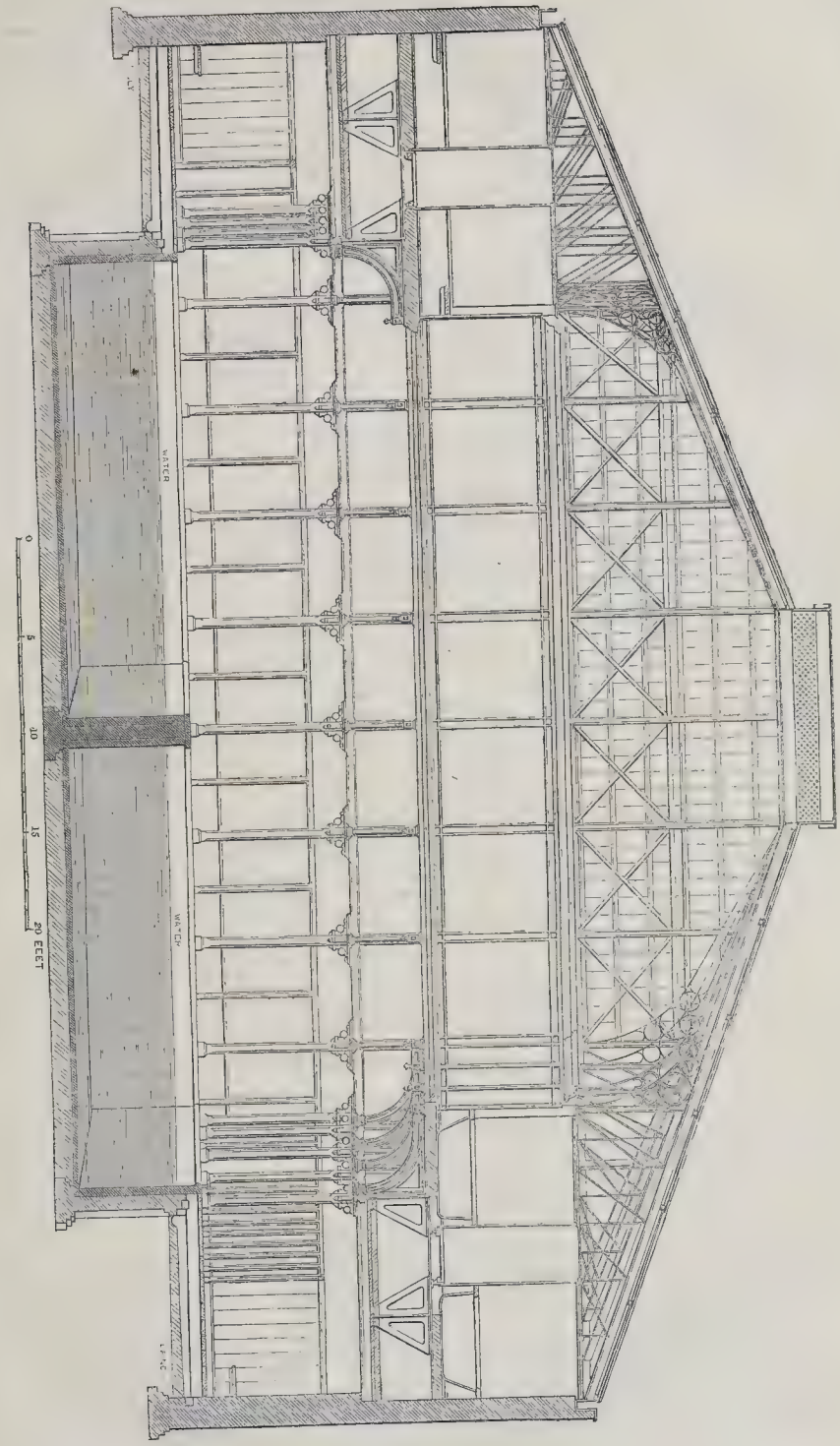
The new Stand-house (which we have noticed in previous numbers of the *Builder* as having been in progress of erection) on the Curragh of Kildare, has been lately inaugurated by his Excellency the Earl of St. Germains, in presence of an unusual number of nobility and gentry. The structure is an important one of its class, and calculated to accommodate an immense number of spectators.

Various public and private works are in progress in county Limerick. New buildings are in contemplation. The mansion-house at Abbeyfeale, in course of erection for Mr. Ellis, J.P. proprietor of the village, is nearly finished, and, from its picturesque situation, forms an interesting feature in the locality: Mr. J. Lyons, architect. At Glenagower building improvements have been commenced by Capt. Bateson, M.P. and others are in contemplation, according to the designs of the same architect. The social condition of the poor is being much improved in districts where the landlords give employment.

ST. GILES AND BLOOMSBURY BATHS AND WASHHOUSES.

THE accompanying section completes our illustration of the new baths and washhouses in Endell-street, Long-acre, and will explain the construction of the roofs and the arrangement of the galleries above the swimming-baths.

Messrs. Standing, of Whitechapel, were the contractors for the engineering department.



ST. GILES AND BLOOMSBURY BATHS: SECTION SHOWING ROOF, &c.

CORFE CASTLE.*

"PORTLAND stone" and "Purbeck marble" are "familiar as household words" to all our readers. Near the most westerly quarries in the isle of Purbeck, whence so much valuable material is got, stands Corfe Castle, the ruins of which constitute the nucleus and associative centre of a little history of general interest.

Corfe Castle, indeed, is of ancient renown. Mr. Bankes, the author of the volume before us, and a hereditary descendant of more than one historical personage connected with it, thinks there is reason for concluding that a castle existed at Corfe in the reign of King Alfred. At all events, in the days of Edgar there was an extensive castle on the Purbeck hills: nine centuries look down upon its ruins! Here Edward the Martyr met his death, and within its walls, say some historians, a *second* Edward II. was murdered. Associated with the castle, too, is the murder of the latter Edward's brother, the Earl of Kent. The maid of Brittany—the Princess Eleanora—passed many sad years within its walls; and in the days of the tyrant John, twenty-two noble prisoners of state were here starved to death. But perhaps the most memorable part of its history is that which tells us that it held within it what might have been the destruction of all the liberties we now enjoy, and even of this empire itself. "Within its walls were found large stores of military engines, which John had provided for the purpose of enforcing the subjugation of the barons, and the revocation of Magna Charta."

The leading local characters in the story, however, were Sir John Bankes, Attorney-General of the ill-fated Charles I. and afterwards Lord Chief Justice of the King's Bench, and his wife and widow, Lady Bankes, who conducted that gallant defence of this castle against the forces of the Parliament, which is the most modern, and the most generally known of the events that make Corfe Castle famous.

The castle, as it then stood, was, at the time, thus spoken of in "The Mercurius Rusticus," a well-known diurnal of the day:—

"There is in the Isle of Purbeck a strong castle called Corfe Castle, seated on a very steep hill, in the fracture of a hill in the very midst of it, being 8 miles in length, running from the east end of the peninsula to the west; and though it stands between the two ends of this fracture, so that it might seem to lose much advantage of its natural and artificial strength as commanded from thence, being in height equal to, if not overlooking the tops of the highest towers of the castle; yet the structure of the castle is so strong, the ascent so steep, the walls so massive and thick, that it is one of the impregnablest forts of the kingdom, and of very great concernment in respect of its command over the island and the places about it."

In fact, it resisted a three years' siege at this period, when its brave defender, Lady Bankes—whose portrait, given by her descendant, only wants the robe and wig to look like that of a grave, though comely "chief justice" herself,—was dispossessed, and her castle plundered:—

"There are not a few of the fair mansions in Dorsetshire which have been constructed in a large measure with the stone and timber carried away from this castle.

The halls, galleries, and other chambers throughout the building were nobly decorated with rich tapestry and carpeting; other articles of furniture also, suitable in taste and value, which had remained probably since the splendid days of Sir Christopher Hatton, were there in abundance, and all of these fell into the hands of the despoilers.

The county sequestrators and officers commanding at the siege had been ordered by the Parliament to slight the castle, but the solidity of the walls defied in many parts even the force of gunpowder. Whole months were occupied in the endeavour, and heavy charges thrown upon the county-rate for effecting the slow progress of this destruction, and in spite of all these endeavours, the remains of the castle present at this day one of the most imposing masses of architectural structure that are to be seen throughout the kingdom. These ruins have now ivy mantles on their towers, and the grass grows in the vaults and dungeons, but the lapse of two centuries has had no more effect than the ravaging attempts of man, for destroying the substantial portions of the building. One large tower was displaced many years ago by the effects of a violent storm, and it rolled into the stream below. The weight of this mass is said to have shaken the ground to a degree which produced the effect of an earthquake throughout the neighbouring borough.

> 'The cause in which thy towers did fall
> Had brought a blessing on them all
> Did fortune follow worth,
> Then when you rais'd, and sap and siege,
> The banners of your rightful liege
> At your she-captain's call,
> Who, miracle of womankind,
> Lent mettle to the meanest hind
> That mann'd her castle wall.'"

The aspect of the ruins as they now exist, or at least as they stood in 1814, when visited by the Princess Charlotte of Wales, is thus described by Mr. Bankes, who received her Royal Highness at the ruins:—

"Entering the borough by the public road, and arriving at some steps which indicate the site of an ancient cross, the grand approach to the castle is discovered: the front gateway is flanked by two strong circular towers, pierced with long apertures or loop-holes, which enabled the besieged to discharge their weapons in safety. To reach this gateway, a stone bridge must be traversed, consisting of four semicircular arches, the key-stone of the centre arch being 24 feet high, reckoning from the bottom of the broad moat which the bridge crosses: it is of the simplest and severest style of architecture: there is probably no bridge of greater antiquity in the West of England.

The last carriage which is known to have passed over this bridge was the carriage of the princess, and this was perhaps the first which had passed since the day when the widowed lady, the defender of these walls, was driven from them in 1646. At other times, the bridge has always had a barrier across it, preventing the entry of wheeled carriages. An impression that danger may be incurred here, will very justly arise upon the survey of a causeway so elevated, narrow, and without parapets. . . . . .

The course taken by the princess when these ruins were so explored, is that which all who desire to see them in detail must pursue. The first bridge being passed, the entrance gateway with its supporters, the massive towers which uphold it on either side, first arrest the attention. The grooves on the sides of the gateway on which the ponderous portcullis played, are still in a high state of preservation. The arch is severed in the centre by the explosion of gunpowder; yet, owing to the strength of the workmanship and materials, the disjointed sections retain their primitive form almost unbroken. According to a drawing made by Ralph Treswell, Sir Christopher Hatton's steward, in the year 1586, the two front towers were capped, as well as the intervening space between them, thus presenting at a distance the appearance of three towers placed triangularly. The object was to prevent access by means of scaling-ladders, should an enemy obtain possession of the bridge. We now enter into the *First Ward*—forming an irregular triangle. It contains eight towers, at unequal distances, of amazing strength and durability. Turning to the right, on looking to the summits of the first two towers, the remains of a spiral stone staircase are visible in each. The first apartment was undoubtedly occupied by the warder. Tradition assigns the second and third to the mechanics and artificers belonging to the fortress. The second tower presents in its interior an arch, effected in the same way as the Egyptians were accustomed (from their ignorance of the principles of the true arch) to form it, viz. squared stones projecting from corresponding abutments or piers, and approximating to each other, like inverted steps, till one broad stone at the top tied and consolidated the whole.

On the fourth tower fronting the east, armorial bearings, which have been said to be those of the Earl of Pembroke (Protector in the reign of Henry III.), are engraved on an ancient, triangular stone shield.

Returning again to the great entrance, and turning to the west, we proceed to examine the other towers, which present stupendous masses of ruin under almost unrivalled circumstances. Thrown from their bases by the force of gunpowder, they exhibit angles of inclination of almost every degree. The second from the gateway is the most striking, and the spectacle from its top will amply repay the adventurer as he gazes on the streamlet below. Near the wall there is in this part a closed well, and before it the marks of a rampart, designed to secure it from injury. This outward ward was used as a place of exercise for the troops; and the raised terrace, about 100 feet from the gate, was, in Elizabeth's time, furnished with pieces of cannon. Passing another bridge of one arch, which crosses a second deep moat, we enter the *Second Ward*.—The gateway here has the provision for a portcullis of vast size, similar to that which is found in the grand entrance. The western tower, with part of the gateway, is severed from the wall, having to appearance been undermined, in order to demolish it; but before this could be completed the props gave way, and the huge mass slid nearly half the height into the ditch. It is surprising that so vast a piece, several tons weight, should settle in so very perpendicular an attitude. Just within the gateway on the right hand was a flight of stairs, which led up to the Great or King's Tower, being constructed on the exterior summit of a very high wall. Tradition states, and apparently with truth, that just at the entrance of this second ward, under the archway, Edward the Martyr received his death blow from the hand of the assassin.

The ascent to the great staircase commenced at this spot, protected by its proximity to the porter's apartments, the remains of which are well worthy of attention. Pursuing from this archway a gentle ascent, the north-western angle opens on our view. The tower standing at the farthest western extremity was octangular, and must have been an imposing feature in the fortress. The only remaining part of it is a spiral stone staircase, which originally led to the summit of the octagon. The configuration of this tower is unique: all the other towers which flanked the outer walls were circular. It is called the dungeon tower, and is said to have been the place of confinement for captives of inferior rank and crimes. Near this tower a stone is visible, projecting from the wall, with a deep notch cut in it, which is said to have been the place of execution. The tower adjoining the octagon was called the prison-chapel, where the the condemned prisoners received from the priest, whose place of residence was in a neighbouring tower, the last comforts of spiritual consolation.

The wall in this west angle demands the particular attention of the architectural antiquarian. It presents us with a specimen of herring-bone work, bricks or stones laid on the edges in form like ears of wheat after the Roman manner, which indicates a very high degree of antiquity.

In this wall are two low doorways, supposed to have been sallyports. This ward contains five towers including those which stand at the entrance.

The next is the Chapel Ward, smaller in dimensions than either of the others, containing a residence for the officiating priest, with a chapel dedicated to St. Mary.

The pointed doorway and broken shafts of clustered columns, indicate the early and purest era of the Gothic style. The floor of the chapel was elevated so as to admit of large vaults beneath, in which it is probable that burials took place.

In the exterior wall, which is on the east side of this ward, was a sallyport, and through this the traitors were admitted who betrayed the castle. Near to this spot, at the foot of the chapel, was a garden in which a well of great depth had been constructed for the supply of the inmates of this higher portion of the castle. The tradition of the neighbourhood at this day affirms, that the whole of the family plate with some store of money, was thrown into this well just before the final capture of the castle. Hutchins, the county historian, points out the improbability of this story. . . . . Adjoining to the chapel, and communicating with the kitchen and other principal offices, stood the Queen's Tower: some of the vaults on which it was supported are still here, but havoc and ruin have prevailed in this more than in other portions of the building. This seems to have been the place of residence of the lord or lady of the castle, having many advantages in point of situation, guarded from every wind, and screened by the lofty King's Tower or keep from the piercing rays of the declining sun.

The apartments which stood here were the most richly decorated; and the notion of concealed treasure no doubt induced the victors to uproot the very foundations of the greater part of these walls with the most persevering industry.

Ramblers amongst the ruins may here choose their place of accommodation for repose, secure of shade and shelter; and with this little volume in their hands they may think of the royal persons who have lived here, sometimes in majesty, and sometimes in thraldom; of princes and peers who have here flourished and have faded; lastly, of a private family forced into historic notice by the miserable distractions of the time in which they lived, who, when driven from these walls, have left here a record of constancy, enduring to the last in behalf of a cause which they had espoused, and believed to be the right one."

This interesting little volume has been collected from ancient chronicles and records; also from the private memoirs of the family, and includes various particulars of the Court of Charles I. at York and Oxford. The whole is dedicated to Lord Digby, the Lord-lieutenant of the county of Dorset, and "to the members of the society established for purposes of mutual improvement in the borough and neighbourhood of Corfe Castle," and was probably at first

* "The Story of Corfe Castle, and of many who have held there." By the Right Hon. George Bankes, M.P. for the County of Dorset. Murray, Albemarle street. 1853.

designed to have been delivered in the shape of lectures to that society. The volume is illustrated with several engravings, including a plan and view of the castle.

CHURCH BUILDING NEWS.

Hay.—Clyro Church has been reopened. The church, with the exception of the tower, has been rebuilt and considerably enlarged in the middle pointed style of English architecture, and consists of a nave and north aisle, separated by a quadruple arcade; a chancel built upon the old foundations, and a vestry. The roofs are of open timber, and the floors are paved with ornamental tiles. It is proposed to restore and raise the height of the old tower. The contractor was Mr. William Jones, of Brecon. The church is built of the stone of the locality, with Bath stone for the dressings. The interior is furnished with seats of uniform appearance stained and varnished. The floor is of encaustic tile from Mr. Godwin's manufactory at Lugwardine, near Hereford. The designs were furnished, and the execution of the work superintended, by Mr. Nicholson, of Hereford.

Bridgewater.—We understand, says a local paper, that Mr. Richard Carver, the county surveyor, &c. who was called in by the churchwardens of St. Mary's parish to examine the state of the tower and spire of the church, and who recommended that a repair in the shape of sundry iron clamps, bolts, hoops, &c. should be made, at a cost of nearly 800*l.* has now recommended the parish to fall back upon Mr. Brakspear's plan for rebuilding the tower and spire, provided a person can be found willing to undertake the reconstruction at about 1,100*l.* or 1200*l.*: he has also offered to subscribe 5*l.* towards that object. A contractor is said to be ready to do it.

Hereford.—The tower of the old parish church here was struck by lightning, during a storm on Monday week. A vivid flash striking the tower, descended by the staircase, entered the edifice, and ascended again, passing by the west window in the north side aisle. The damage done to the fabric is not at all in proportion to the panic which ensued amongst a marriage party in the church. Four persons were struck by the current, two women and two little girls. As there is doubtless no efficient lightning-conductor, this circumstance ought to serve as a warning that no time should be lost in putting one up.

Holywell.—On the 12th instant, Brynford New Church, one of two built in lieu of the one at Pantasa, now devoted to Romish worship, was consecrated by the Bishop of St. Asaph. The church is distant from the town about a mile and a half, and is in the Gothic style: schools and master's residence adjoin.

Newport (Isle of Wight).—At Carisbrooke Castle a bazaar is announced to be held in aid of the rebuilding of St. Thomas's Church, Newport.

Faversham.—The church here being about to be restored, and the 2,200*l.* provided for not being sufficient, a meeting was recently held as to a remainder of 1,000*l.* still required, and in consequence 500*l.* have been already subscribed.

Edenbridge.—The foundation-stone of a new chapel (Bethel) was laid on Tuesday in last week, by Mr. Apsley Pellatt, M.P. for Southwark. The cost of the new building is estimated at about 450*l.* somewhat more than a third of which has already been received.

Mundford.—According to the *Bury Post*, a hurricane and deluge of rain on Wednesday and Thursday week were most seriously felt at Mundford Church, which has been under repair. The new tower just completed, and the spire of which was being fixed, has become a heap of ruins. The wind, it is said, took such hold of the timber of the spire, which was only partially secured, and caused so great a vibration, that the new rubble work of the tower gradually yielded to the oscillation. No blame is attached to the builder on the score of bad foundations: the walls still stand to a certain height.

Birmingham.—The scaffolding for the taking down of St. Martin's spire is now up, and the work of demolition is shortly to be begun by Messrs. Branson and Gwyther, the contractors. The scaffolding contains 7,000 cubic feet of timber. The spire was found to be in a very bad state, 3 feet 6 inches out of the perpendicular, and quite rotten, the stone where it had been 9 inches thick being reduced in many places to 6 inches. Only last week the mullions of one of the sound holes had fallen in. The copper weathercock is short of 4 feet in length, and was found to have been perforated by three bullets. The local *Journal* gives some other measurements, which may be here noted. The height of the tower is 72 feet 6 inches; the height of the spire 127 feet 6 inches; making the total height 200 feet. The diameter of the clock-dial is 9½ feet. Talbotypes of the structure are to be taken. The work of demolition will be accomplished by first removing several feet of the highest point of the spire, and then constructing an apparatus by which the stones will be thrown down the inside of the tower, thus diminishing risks of danger, and the inconvenience of clouds of dust. With respect to the restoration, it is stated that in every respect the new tower and spire will be of the same proportions as the original. The stone used in the construction of the spire is to be from the Darley Dale quarries, Derbyshire; that for the tower from Grinsell, near Shrewsbury. Both are warm in colour. Although the proportions of the old spire are to be preserved, Mr. Hardwick, the architect, has introduced some decorations in harmony with the style of the structure. The little pinnacles at the corners, surmounted with vanes, are to be replaced by small towers, finished with finials and crockets, and topped with crosses, their bases being decorated with grotesque girdoles. At some distance above the windows which rise from the base of the spire, it is intended to place four angel figures upon pedestals springing from four of the octagonal sides. These statues are to be each, with the pedestal, 6 feet in height, and their execution is to be intrusted to Mr. Thomas. The tower is not to be wholly demolished. The brick casing is to be destroyed, and part of the stone-work below removed. It will then be recased.

Stafford.—The ancient church of St. Chad, in this town, being about to be restored and enlarged, Mr. Ward, architect, who has been intrusted with the duty of carrying out the proposed plans, while engaged in examining the walls in the chancel, has discovered that a comparatively modern facing had been placed over the original structure. On this facing being removed, two Norman arcades of stone were presented to view, one on either side of the chancel, with six arches in each. The arcade on the north side is perfect with the exception of the pillars. Two ancient windows on the north side are in good condition. The remains are of eleventh century. Tesselated tiles, with other specimens of ecclesiastical decorations of the olden times, have also been found.

Liverpool.—The works at St. Chrysostom's Church, Everton, are now in so advanced a state that, if the remaining sum of about 1,000*l.* required can be obtained in the interval, there is every probability that this large church, with upwards of 400 free sittings, and with more than 200 seats to be let at 5s. each annually, will be consecrated in course of the ensuing month. The building committee have, within little more than two years, obtained nearly 4,500*l.*

Burnley.—The works required for the restoration of the parochial church, from the designs of Messrs. Thompson and Webster, architects, Kendal, have been let at a cost of 2,500*l.* They will consist of two rows of new pillars and arches, with clerestory windows above, surmounted with new stone battlemented parapet. There will also be a new open timber roof, covered with the dark blue North Lancashire slates, in place of the present heavy grey flag slates. The body of the church will be rearranged, with new open benches, and the gallery is to be considerably altered. There will be a gain of upwards of 200 sittings. The works will be commenced immediately, and are to be completed early in next year.

Middleham.—Several improvements are going on in the Collegiate Church here, and several more, it is said, are in contemplation. The large Gothic window at the east end of the church has been taken out to be replaced with stained glass.

JUNCTION OF METROPOLITAN RAILWAYS.

ON the subject of metropolitan railway connection, the following remarks may be deemed of importance:—

Its execution will not be found difficult, if regard be paid to extensions partly made: in short, *it consists in the completion of these.* How many years, for instance, have the three lines known as the West London, the South Western Waterloo Extension, and the Bricklayer's Arms, been "shouting" to each other! By simply uniting these first with each other, and then with the northern lines at Farringdon-street, nearly every object would be gained. The *first* of these three would bring to South London no slight contribution in the shape of North-Western and Great Western traffic. The *second* has fortunately just been adapted (at Waterloo-road) for further extension; and the *third*, so unaccountably left in abeyance, would, if completed, be to South what the Dock Junction Railway is to North London. This line is the main feature of the whole: it "sums up," as it were, *all* those of the Brighton and South-Eastern Companies; very unlike the West End and Crystal Palace Railway, or the Wimbledon and Croydon, both which (jostling, as they do, each other) it might preclude the immediate necessity of forming. Its beneficial operation would be conspicuously seen in other respects: it would act as a dam to keep back the tide of southern traffic from invading thoroughfares and bridges dangerously crowded; this, principally by means of a station near the Elephant and Castle. I will point out another end: it may subserve that of opening further railway communication between north and south *viâ* the Thames Tunnel (the only conceivable mode of recovering that "*lost*" property). In conclusion, few but would say that if the northern and southern railways be united, as proposed, at Farringdon-street, the grand centre, the obvious spot, there were little occasion to block up our noble river with a longitudinal erection of indefinite length in its centre. INSTAR OMNIUM.

STITCHING MACHINERY.

AN American sewing machine has been introduced into Lancashire and Scotland, and it is confidently predicted that this machine "is destined completely to supersede all plain hand-sewing, and that such sewing, as an occupation for either man or woman, tailors or sempstresses, is gone for ever!" The work done is no mere slop-work, but good stout regular sewing, in straight line or in curve,—in short, in any required direction; and a needle, with the aid of the neat little worktable machine, enables the sewer to do in a single minute what she could not do equally well in less than half an hour! We put on a wonderfully smart waistcoat the other night, thus made in something less than no time. "Pity the poor needlewomen," say some: hope for them, say we. The spinning-jenny, instead of depriving women of employment, provided it for them, so that where tens made a living by hand-spinning, or the distaff and the wheel, hundreds,—we had almost said thousands—came to earn a better subsistence, much less laboriously, by the spinning jenny. So with the weaving power-loom: it has long provided for far more human beings than it ever deprived of a previous mode of earning a livelihood. And now that the wool and the cotton are spun and woven (and shaped?) and stitched by machinery, such a deluge of cheap and well-made clothing of all kinds for both sexes will be poured into the market, that not only the needlewomen and tailors will be better and more numerously employed in guiding or working the new machine, either at home or in workshops, but the whole community will be substantially benefited. The power-loom and the spinning-jenny have so multiplied and cheapened the material of clothing for both sexes, that now in many cases the cost of mere making is actually as much as, and sometimes even more than, that of the stuff,—an anomaly which demanded the stitching machine as the completive term of a triunity of tireless substitutes for human labour. The stuff of a very decent printed cotton gown for a grown

woman may be had for 1s. 11d.: it will cost 2s. 6d. or at the least 2s. for the making. The cloth for a good common coat for a working man, or for office work, may be had for 6s. or 8s.: the making alone will cost 9s. It is easy to conceive then what an impetus to all these branches of manufacture—the spinning, the weaving, and the making,—means of cheapening the last of the three will now give. Many a poor "shabby-looking" fellow might have always had a decent coat to his back had it not been for the immensely disproportionate expense of the making. Why, the sewing machine will transmute the world into (outwardly, at least) a world of ladies and gentlemen! Not even the poor curates, the working physicians of souls, will deign to put on cast-off clothing! We have hopes then for the poor needlewomen,—hopes that "the song of the shirt" will itself be buried in its worthy author's grave. Nevertheless there may be not a little hardship to many individual workers with the needle in the course of transition; yet we are sanguine even on this score. A new glove-making machine has been lately invented in France, which completely finishes the glove so far as sewing is concerned; and what is already the result? that the operatives heretofore employed in glove-making have been ruined? No! "The manufacturers are not able to supply the demand for want of a sufficient number of operatives."

VALUE OF LAND AT WOOD GREEN, HORNSEY.

THE New River Company requiring 1 A. 2 R. 26 P. of land at the edge of Mr. Pearson's estate at Wood-green, for the purpose of forming a tunnel in connection with the new cut proposed to be made at Hornsey, and the surveyors disagreeing as to the amount to be paid for the same, appointed Mr. P. Hardwick their umpire.

The sum claimed was 4,280*l.*: this was supported by Messrs. Abraham, Professor Donaldson, G. Prickett, Shuttleworth Barnett, A. B. Freend, and others.

For the company, Messrs. C. Lee, H. Crawter, H. A. Hunt, Lambert, and Death, gave evidence, and proved that land near had been sold lately at 250*l.* per acre; that the Metropolitan Building Society gave last year for the land opposite that of Mr. Pearson's 180*l.* per acre, and that 640*l.* would be a proper compensation.

Mr. Hardwick awarded 1,026*l.* total compensation.

PROVINCIAL NEWS.

Grimsby.—The Great Grimsby Improvement Act has come into operation, and at a meeting lately of the corporation, held under the General Board of Health Acts, which are largely incorporated in the Grimsby Improvement Act, a resolution was carried that Mr. Rendell, who was the engineer for the new docks, should be appointed to superintend the construction of the various important works required to be done. Water supply, drainage, and market accommodation, are to receive immediate attention.

Lynn.—For the establishment of baths and washhouses, Lord Stanley has promised to head a list of subscribers with 100*l.*: the whole amount required is supposed not to exceed from 250*l.* to 300*l.*

Watford.—A committee has been appointed to consider as to the best site for the re-erection of the market-house, some time since burnt down.

Wolverhampton.—A workmen's monument to the late Mr. G. B. Thorneycroft has been erected in the cemetery over the deceased gentleman's tomb. It is formed appropriately of iron, and is the production of the Coalbrookdale Company. A foundation of Grinshill stone supports an iron base 10 feet square, with plinth, having the angles replaced by segmental recesses; the whole supporting a cylinder, bearing shields, &c. Attached to the cylinder, and jutting out toward the angles of the base, are four brackets ornamented with leaves of the acanthus and scroll-work of honeysuckles, &c. A figure of an angel in meditation relieves each bracket. The entablature is in compartments, and at each corner rest pendent wreathes of "*immortelles*." A pyramid surmounting the whole has panels decorated with inverted torches and wreaths of palm leaves. A low railing surrounds the memorial. The iron-work is bronzed. The inscription, which is rather a formidable affair, comprising, it would appear, upwards of seventy lines, mentions the fact, that this monument is "erected by the grateful offerings of nearly a thousand workmen to the memory of their old employer." It contains an eulogium on his career and character.——The erection of the Government School of Practical Art is proceeding rapidly. Of 2,600*l.* the total estimated cost of the building and lands, 1,280*l.* have been subscribed. 120 persons have already entered their names as students. The committee, acting on the suggestion of Dr. Lyon Playfair, have introduced science into their code of instruction, which it is thought will tend to lessen the great annual sacrifice of property and lives which now occurs in South Staffordshire, through ignorance and unskilfulness of workmen.——Various improvements in widening and extending streets are talked of here.

Wednesbury.—A proposal to erect a theatre here has been negatived, on moral principles, by a large number of ironmasters and others.

Hereford.—The *Hereford Times* records the damage and destruction of more than twenty bridges in that part of the country during the late rains and floods.

Breconshire and Glamorganshire have lately been visited by heavier floods than were known there: no less than seven bridges have been destroyed in the Vale of Neath, far famed for its beautiful scenery. Pontwalby bridge was wholly carried away. In Breconshire similar catastrophes occurred, and nine lives were lost. The rains have been partial, and the floods are supposed to be the effects of a waterspout.

Liverpool.—There are three new reservoirs at present in progress at Liverpool, in connexion with the water supply. We have already given a description of the one at Park-hill, and also of the extensive works proceeding at Kensington. The third reservoir, at Everton, has now been commenced. The site is in the close neighbourhood of the new church of St. Chrysostom. According to the *Journal*, there will, in fact, be two reservoirs,—one on a lower level, the same as those at Kensington, and one elevated on a tower, for the purpose of supplying the inhabitants residing upon the crest of the hill extending from Kirkdale to Windsor. The lower reservoir, which will be surrounded by stone walls, and covered in, will have capacity of storage for six million gallons of water; and the upper tank (which will be constructed of a combination of cast and wrought iron) will be of sufficient dimensions to contain about a quarter of a million of gallons. The latter will rest on a circular tower of red freestone, composed of a series of rusticated pillars and arches, in a simple style of Italian architecture. This tower, which will be 75 feet in diameter at its base, will be 88 feet from the ground; and the height of the tank, which will also be covered in, will be 10 feet, giving a total height of 98 feet. A square tower attached, which will contain the chimney and stand-pipe, will be 145 feet high. This is situated between the main tower and the engine-house, which stands below. There are also to be cottages for the *employées*. The whole establishment will cover an area of 10,000 square yards. The plans are by Mr. Thomas Duncan, the water engineer, under whose superintendence the works will proceed. The total cost will be about 25,000*l.* The contractors are Messrs. A. and G. Holme.

Leeds.—At a public meeting held on Tuesday in last week it was resolved to promote subscriptions towards the erection of an asylum for idiots here.

Edinburgh.—The Pilrig Model Buildings Committee report that three ranges of houses for the working classes, including forty-four dwellings, have now been completed, at a total cost of 4,050*l.* including the supplementary expense of constructing roads, drains, &c. The houses are let at a rental of upwards of 300*l.* or about 7½ per cent. upon the capital; and after defraying the expense of management, fire insurance, taxes, &c. there is a free surplus sufficient to pay 5 per cent. to the subscribers, besides laying aside a sinking-fund of between 30*l.* and 40*l.* per annum for repairs. Each house is self-contained, and has some garden-ground attached to it, and all, says *The Scotsman*, are occupied by steady and industrious tenants and their families.

Baldoven (*Dundee*).—The foundation-stone of an orphanage and asylum for idiot children was laid here on Thursday in week before last. It is designed to accommodate forty children, but is capable of extension. The site is given and the cost of erection to be defrayed by Sir John and Lady Jane Ogilvy. There is at present, we believe, no institution of a similar nature in Scotland. Messrs. Coe and Goodwin, of London, are the architects. The plans have been revised and approved of by Dr. Guggenbuhl, of Abenberg, and Dr. Coldstream, of Leith. The builders are Messrs. C. and A. Cunningham, of Baldovan.

Kirkwall.—Considerable improvements have lately been made on the streets of Kirkwall, in the Orkney Isles, at the joint expense of the road trustees and town council. One of the worst parts, according to the *John O' Groat Journal*, has now been contracted for, and is in course of being re-constructed with Firth flagstones and causeway.

SCENERY.

The Adelphi Theatre.—Mr. Webster has emulated the splendour and appropriateness which characterise the play of "Sardanapalus" at the Princess's Theatre, in a burlesque of it, "The Fast King of Assyria," which he has produced at the Adelphi. The dresses and appointments are magnificent, and the scenery exceedingly well painted. In some respects, indeed, as, for example, the very clever dance in the original, it is not so much a burlesque as a copy. Considering the confined area of the stage, the effect of extent obtained is extraordinary. There is a good deal of fun in the piece, but its chief merit is in the getting up.

THE BUILDERS' BENEVOLENT INSTITUTION.

THE annual general meeting of the friends and subscribers to this charitable institution, established in 1847, for giving relief and granting pensions to decayed members of the various branches of the building trade and their widows, was held on Thursday, at the London Tavern, for the purpose of receiving the report, and upon other business. Mr. G. Bird, treasurer, in the chair.

Mr. A. G. Harris, the secretary, read the report, which congratulated the subscribers upon the increasing prosperity of the institution, and the corresponding benefits the directors had been enabled to confer by adding to the number of their pensioners. The committee having expressed their cordial thanks to their president, S. Morton Peto, Esq. M.P. for presiding at their annual dinner, which produced so gratifying a result, announced that it is their intention to have another election on 18th August, when five pensioners will be elected from a list of twelve candidates, making the total number then receiving the bounty of the institution fifteen males and nine females. The subscriptions and donations received during the past year amount to 1,404*l.* 5s. 6d.; and there has been added to the funded stock since the last report 800*l.* three per cent. consols, 700*l.* stock to the relief fund, and 100*l.* to the building fund, making the total amount 3,650*l.* divided as follows:—2,650*l.* stock to the relief, and 100*l.* stock to the building fund. Great energy has been displayed by the Brighton committee, and the honorary secretary, Mr. G. Maynard, has forwarded to the treasurer, the sum of 114*l.* 9s. with a prospect of adding considerably to the amount. The directors have also much pleasure in announcing that, under the able superintendence of Mr. Joseph Bird, the honorary secretary, the annual ball produced the large sum of 120*l.* 16s. 6d. After stating that Mr. Peto had consented to act as president for the ensuing year, the report concluded by calling upon the friends of the institution, and the builders generally, to lend their aid in furthering the benevolent aims of the directors, more especially as but five pensioners would be able to be elected, from a list of twelve candidates, at the approaching election.

The report having been moved and seconded, was carried *nem. con.*, and a vote of thanks having been passed to the chairman, the meeting separated.



ROCHESTER CASTLE: INTERIOR.

[See page 481, *ante*.]

USE OF HOLLOW BRICKS WITHIN JURISDICTION OF THE BUILDINGS ACTS.

With reference to a congregational church and school proposed to be built by Mr. Hodge at Battle-bridge, and in the district of St. James and St. John, Clerkenwell, within the limits of the Metropolitan Buildings Acts, it was proposed to build the walls with "Norton and Bories' patent hollow bricks," and the jambs and mullions with "Ransom's patent siliceous stone." The district surveyor being of opinion that these materials "are not, nor is either of them, 'sound bricks' or 'stone' within the meaning of the rules of Schedule D, parts 1 and 2, of the said Act first above mentioned; and, moreover, that if the said external walls and footings be built of such materials as aforesaid, the same will not be built in such manner as to produce 'solid work' within the meaning of the said Act;" the official referees were required to determine the same.

The official referees awarded "that well-burnt bricks of the form and dimensions hereinbefore mentioned,—that is to say, of the form and size of an ordinary stock brick, each of the headers having six transverse perforations, and each of the stretchers having three longitudinal perforations, which perforations are in every case separated from each other by a thickness of not less than half an inch, and from the outside of the brick by a thickness in the thinnest part of not less than five-eighths of an inch, of the solid substance of the bricks, will be sound bricks within the meaning of the said Act first herein mentioned, and will be capable when laid in, and with mortar or cement, of producing solid work, as required by the said Act for external walls and the footings thereof."

BRICK, PIPE, AND TILE MAKING MACHINES.

CLAYTON AND OTHERS *v.* PERCY, FOR INFRINGEMENT OF PATENT.

In the Court of Exchequer, before the Lord Chief Baron and a special jury, an action was tried last week for infringement of Clayton's patent for clay screening, drain, tile, pipe, and brick making machines.

Sir F. Thesiger stated the plaintiff's case, and described the machines, pointing out the entire identity of that of defendant, except in the mode of giving motion, which did not affect the question of infringement. The plaintiff's machine, by one operation, did the work of three machines. It filled the mould-box with clay, which it screened, it formed and compressed the brick, giving it the utmost compactness, and then delivered the bricks so pressed. The defendant's machine did all this, and by substantially the same machinery and process, and this was the infringement complained of, though, in consequence of the defence made, plaintiff was compelled to go into and defend other parts of his patent, which, however, would prove equally unassailable with the present.

Several practical brick and tile makers spoke to the novelty and great utility of the several inventions, and Mr. J. Evelyn Denison, M.P. who had devoted much attention to the subject, said that plaintiff's tile machine saved him 300*l.* a year in draining his estates.

Mr. William Carpmael and Mr. Charles May (civil engineers) were also called, and confirmed all the statements of counsel, and, on cross-examination, pointed out the substantial differences which existed between plaintiff's machines and processes and those of the other prior patents set up by defendant's objections. Other witnesses of a scientific and practical character were about to be called, but the Chief Baron intimated that there was no occasion, unless the jury were not satisfied.

The Jury expressed themselves perfectly satisfied.

The principal witness called for the defence was Mr. Fothergill, C.E. of Manchester, who differed from the preceding witnesses on but few minor points, but his cross-examination showed that there was a dissimilarity between every claim of plaintiff and the specifications of other patentees.

The Lord Chief Baron, in summing up, said the plaintiff's patent had been put to a most severe test, and it had borne it triumphantly. When he first looked at the specification, he thought some of the alleged inventions were only colourable novelties, but he found they were not. The patent ranged over the whole process of manufacture, from the raw clay to the completed article. Again, when he first looked at the large number of claims, he scarcely expected that plaintiff would carry all his cargo safe to port, and thought he would have to make flotsam or jetsam of some of his claims. But it was not so. The specification had been drawn with the greatest care and skill, and the whole was sustained. This being the case, he had no question of law or construction to leave to the jury, and as to the question of the fact of infringement, they were the judges. The damages would be but nominal.

The Jury immediately returned a verdict for the plaintiff on all the issues.

PAYMENT FOR WORK NOT IN SPECIFICATIONS OF CONTRACT.

In the Lambeth County Court, an action was brought by a carpenter named Bodley against Mr. Chadwick, a speculative builder, to recover 36*l.* 6s. 9d. for extra work done over a contract.

The plaintiff said he contracted with the defendant to do the internal carpentry of two houses at 40*l.* per house. The specification did not set out the mode and time payment was to be made, but it was understood he was to be paid as the work progressed. The defendant did not advance sufficient to pay his (plaintiff's) men's wages, and he left the contract in consequence. The sum now claimed was for extras not in the specification, and done by order of defendant's foreman.

By Mr. Chadwick.—Had been paid 85*l.* which was 5*l.* more than the original contract.

A Surveyor stated that he went over the work with Bodley, and after examining the specification and the extras, his estimate was for the amount claimed. The difference between cash and measure and value price he estimated at 5 per cent.

Mr. Chadwick said it was absurd to state that the difference between ready-money and measure and value price was only 5 per cent. It was well-known that 40 per cent. difference was often found. He contended that he had overpaid the plaintiff, and should show that the extras were paid for in the balance over the contract price. The present plaintiff had been sued by him (witness) successfully for a breach of contract on the very two houses for leaving the work unfinished.

The defendant's foreman was called, who gave it as his opinion that the extras were worth 2*l.* 15s. only. The extras set down by plaintiff's surveyor were most of them in the specification.

Mr. Binns, solicitor for plaintiff, in his address to the jury, characterised the defence as a battle between labour and wealth.

The jury found for the defendant.

Miscellanea.

A Norwegian Pantheon.—From Christiana we hear that a Norwegian Pantheon is about to be erected, to receive the portraits, statues, or busts, of all the men who have illustrated Norway by their virtues or their talents. The building will be erected at Eidsvold, a town not far from the capital, in which the representatives of Norway adopted, on the 17th of May, 1814, the existing constitution. Among the earliest to be enshrined in the new temple will be the king, St. Olaus, who introduced Christianity into Norway; Queen Margaret, surnamed the Great; Christian IV. King of Denmark and Norway, the "Henri Quatre" of the North; Prince Christian Frederick (afterwards Christian VIII.), who accepted and sanctioned the constitution; and Charles XIV. (John Bernadotte), the regenerator of the agriculture, commerce, and industry of Norway.—*Athenæum.*

Varnish for Ironwork.—Locksmiths and others working at the forge are accustomed to blacken the articles intended for railroads by making them red-hot, and burning on them some linseed oil. This plan, which is practised to improve the appearance of the articles and to protect them from rusting, is not economical nor always successful: it fails when the combustion of the oil has been too great. By the following process a varnish is made without the above disadvantages, which gives to articles a better appearance:—Dissolve, in about two pounds of tar oil, something more than half a pound of asphaltum and a like quantity of pounded resin; the mixing is performed hot in an iron kettle, care being taken to prevent any contact with the flame. When cold, the varnish is poured into a vessel and kept for use. These varnishes are for out-door wood and ironwork, not for japanning, leather, or cloth. Oil varnishes are used for patent leather, and copal for japanning metal.—*Home Companion.*

Building Trades Operatives Wanted in Australia.—If there be one description of labour more called for in Australia than another, says the *Sydney Herald*, it is that of mechanics, especially carpenters, masons, bricklayers, plasterers, blacksmiths, cabinetmakers—in short, all persons employed in rearing and furnishing human habitations.

Epitaphs.—The following epitaph is in the churchyard at Hatfield, Herts:— J. B. W.

"This world's a city—a narrow crooked street,
And death's the market-place where all do meet.
If life was merchandise that man could buy,
The rich would always live, the poor must die."

Preservation of Hampstead Heath.—A numerous meeting of artists was held in the Flaxman Gallery, University College, on Saturday in last week, to consider what measures should be taken by artists to preserve Hampstead Heath and the neighbouring grounds in their present order, for the purpose of art-study, and with this view to urge their acquisition by the public. Sir William J. Newton took the chair, and was supported by Messrs. Stanfield, R.A. Cockerell, R.A. Cruikshank, Pye, Lucy, Fripp, Eddis, Carl Haag, Pickersgill, &c. The chairman and other speakers described Hampstead Heath as a site well suited for the study and pencil of the landscape-painter, and in consequence of its picturesque character, the residence and retreat of many distinguished artists. For the encouragement of the fine arts, Fontainebleau had been dedicated by the French government. Resolutions, and a petition to her Majesty founded on them, having been adopted, the following was carried amidst cheers:—"That the meeting looking upon his Royal Highness Prince Albert as the patron and encourager of arts, do urgently request his Royal Highness to take charge of the petition and present it to her Majesty."

The Sewers Commission.—In reply to a question by Sir B. Hall, in the Commons last week, Lord Palmerston proposed to extend the commission for twelve months longer. He hoped to be able by next session to arrange a plan for its continuance, with a due proportion of the representative element infused into it. It was impossible to do so this session. Works were already planned, for which the commissioners could not find funds. These did not relate to arterial drainage, and the question was, whether such works which were pressing should be postponed, or whether Parliament should enable the commissioners to give the different districts that which they urgently required. He should propose a clause to that effect in the continuance Bill, and give the House an early opportunity of discussing it.

Lord Palmerston on London.—At a banquet given by the Lord Mayor to her Majesty's ministers, Lord Palmerston, returning thanks for a toast to his health as Home Secretary, said,—It was not only the institutions of the metropolis that required amendment, but the metropolis itself. He remembered that, some years ago, when the distinguished Italian sculptor Canova was in this country, he was greatly struck with London. Canova admired the convenience of our footways, the comfort of our separate houses, the order prevailing in our streets, and the security of persons and of property, and concluded his panegyric with that sort of hyperbole peculiar to southern minds, and said if London were only whitened it would be an earthly paradise. Now there were in this metropolis certain establishments —some of them stationary and some of them floating—which consumed every hour of the day shiploads of coals, and vomited forth the smoke, defacing, even before they were completed, the noblest monuments of architectural skill. He would humbly ask the assistance of the metropolitan members in enabling him to put an end, so far as was possible, to this abominable nuisance. A great poet, writing in the last century, had told them, speaking of the Thames, that

"Its translucent waves shone a broad mirror."

That mirror, unfortunately, had since been darkened, and if it cast any reflection at all, it was a reflection upon the apathy and neglect of those who ought to have kept its waters clear and free from defilement. He trusted the metropolitan members would aid him in endeavouring to restore the Thames from a state of liquid mud to the state of "translucent waves." He was persuaded that if that support was given which might easily be afforded, they could succeed in rendering this great and noble city not merely one of the wealthiest and most important commercial cities in the world, but also, he trusted, one of the most healthy and agreeable residences to be found in civilized countries.

Islington Poor Establishment Competition.—We are requested by one of the successful competitors to say, that the names given by us last week as first and second should be reversed, and that instructions have been given to Mr. Birch to prepare the necessary specifications and details required to execute his design. Another correspondent, who sends his name, stigmatizes the affair as "the grossest job ever recorded in the annals of competition;" and says "the canvassing was open and perpetual."

Burning of an Equestrian Theatre at Islington.—The wooden building erected in the Rosemary-branch gardens in Islington-fields, for a circus or amphitheatre, was destroyed on Wednesday last by fire. It was about 90 feet in diameter and of considerable height. The question of the right of the proprietor to erect such a building of wood had for some time back been before the referees. A white-lead manufactory was also damaged by the fire, which, fortunately, however, did no farther mischief.

DUBLIN MECHANICS' INSTITUTE.—It must be the regret of all well-wishers to this Institution that so much ultra party-spirit (which has ever been the bane of Ireland) should be manifested at the periodical meetings. Within the last few days, our correspondent informs us that he attended two, but the scenes which took place were so disgraceful, that we trust we never shall have occasion again to refer to such conduct. It seems there are two parties contending for supremacy, namely, Conservative and Liberal, and their respective feelings are carried to such a height, that it has become quite impracticable to transact any business, and the assembly is generally cleared by the police. For the good of the Institute (which in point of finances is in a flourishing state) it is to be hoped the members will lay aside all prejudice, and unite hand and heart for the common welfare.

THE LABOUR MOVEMENT.—The bricklayers employers at the New Houses of Parliament struck work in the beginning of the week for an increase of wages, which their employers refused to give. The labourers are also of course idle. In Southwark, nearly 2,000 labourers employed on the wharves struck, on Tuesday, for a rise to 4d. an hour, from 3d. which they have been paid, including dinner-hour, besides two pints of porter each day, for fifty years, whether provisions were dear or cheap. The reason they assigned was, that the sufferance wharves having the privilege of landing foreign goods, the coasting trade has recently been superseded by the railways.

PRECAUTIONS AGAINST FIRE.—The Manchester Watch Committee, according to the local *Courier*, have made arrangements under which the keys of business premises may be deposited for safety by night at any of the principal police stations, in consideration of the payment of 1*d.* per annum. At each station will be fitted up boxes, on which persons depositing keys will be required to place locks, the keys of which they will keep, with a ticket of registry, to be produced on opening the box. In the event of fire in any depositor's premises, the police will at once break open the box, in order to obtain access by means of the keys, and such premises will be taken charge of by the police until properly delivered over to the proprietors.

A NEW WATER-MARK FOR PAPER.—The late engineer of the Bank of England invented a novelty in paper-marking which, it is said, has since been so far perfected for practical purposes that it will be likely to come into use for ornamental display, as well as for bonds, checks, and other similar documents, as an extra precaution against forgery. The process is described as enabling portraits, landscapes, or any other subjects to be given with the same effect as in the German porcelain pictures, the graduated thickness of the paper at the various parts of the design creating, when it is held to the light, the requisite effects of light and shade.

DECIMAL COINAGE.—The committee on decimal coinage have concluded the examination of witnesses, and the result, it is understood, will be a unanimous report in favour of the adoption of the system, making the pound sterling the integer, and dividing it into 1,000 units or farthings. Dr. Bowring's Chinese experiences of the facility of the system are said to have been most satisfactory, and he produced an instrument (abacus) by which arithmetic is taught in the schools of China; and stated that a Chinese youth, after a month's instruction, is far more competent to apply all the rules of arithmetic to the business of life than a learner on our plans of instruction would be after the teaching of years! Its use in our elementary schools was suggested to the committee. We begin to fear that we *have* been "outer barbarians" after all.

COKE OVENS AND WASTE HEAT.—Such is now the demand for coke, says the *Gateshead Observer*, that we hear of one single coalowner, resident in South Durham, who will shortly have 1,000 ovens in full operation. It has often occurred to us that the heat of coke-ovens might, in many cases, be turned to profitable account where it is still wasted. Coke, in fact, ought only to be made where other purposes can at same time be served. Even the gases thrown off might be burnt in aid of any requisite heat, and, in many instances, coke-ovens might be erected near villages and hamlets, so as to light them up with gas. It seems to us a strange circumstance that, in a money-making era such as this, there should still be so wasteful an apparatus as a coke-oven not a mere appendage to a pottery, gaswork, timber-drying, or other useful manufactory.

NEW CEMETERY FOR ISLINGTON.—A piece of land, containing about 20 acres, situate at Hornsey, has been purchased for the purpose of forming the site of a new cemetery for the inhabitants of the parish of St. Mary, Islington.

ROYAL ACADEMY.—On Wednesday evening last the academy was lighted up, and the members received a large number of visitors at a *conversazione* previously to the dispersion of the pictures.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.—This society made its annual excursion on Saturday in last week. The party included Mr. Charles Verelst, the president of the society, and Messrs. Picton, Barber, Horner, Weightman, Chantrell, &c. most of whom proceeded to Beeston by way of the Chester and Birkenhead Railway. At Beeston, vehicles conveyed the members to Bunbury Church. They afterwards proceeded to Peckforton Castle, the seat of Mr. J. Tollemache, who threw his establishment open to the members, and directed his steward to accompany them over the castle, chapel, and offices. Heavy rain induced the excursionists to abandon their intention of visiting Beeston Castle. After dinner at Beeston they returned to Liverpool.

RUINS FOUND IN MINING.—At Hilia Wood, in the parish of Buckfastleigh, a party of miners driving an adit in the side of the hill lately, came against the solid masonry of a house, several feet under the surface, on which trees are growing: they have been excavating around the walls to ascertain the size of the building. It is about a mile from the old Cistercian Abbey at Buckfastleigh.

NINE HOURS AND NO OVERTIME.—The London stonemasons are now agitating for "nine hours per day" and "no overtime." Is it not to be feared that the cry of "more wages" and "less work" may be pushed to the ruin of trade? We may have the fable of the goose and the golden eggs fatally realized.—*Gateshead Observer*.

A CARPENTER IMPALED.—Last week a man named Davis was at work on the roof of a warehouse at Devizes, when a ladder he was using slipped, and he was thrown first on the poles of the scaffolding and thence to some iron-spiked railings below, on the top of which he was so firmly fixed that it required six men to remove him. One of the spikes passed through his hand, and others through different parts of his body to the depth of two or three inches. The poor fellow was carried home in excruciating pain, but hopes are now entertained of his recovery.

LOOK TO YOUR COIN DEPOSITS.—On Sunday night last the foundation stone of the proposed Wesleyan Reformers' Chapel, near Blakeley Moor, was robbed of the coins deposited in a glass phial underneath it. The newspapers and other documents were, considerately towards future archæologists, left behind—a circumstance so much to the credit of the thieves of the 19th century, that it ought to be handed down to the grateful antiquaries of posterity, through the present number of the *Builder*, as a record of the fact.

PHILADELPHIA AND NEW YORK: THE CRYSTAL PALACE.—A Philadelphia correspondent of *The Literary World*, of New York, says,—"The newspapers here are very bitter about the Crystal Palace, and indulge in the most unreasonable and ungentlemanly detraction of the enterprise, its managers and architects. It is ridiculed, quizzed, caricatured, abused, underrated, and utterly condemned on all sides; nor is the opportunity neglected to vent a little of the spite and jealousy felt by Philadelphia against New York. The so-called rivalry between the two cities is probably a silly piece of business, especially upon our part, when we are so inferior to Gotham in almost every respect, excepting always cleanliness." The Philadelphia hippodrome, he alleges, would never have been commenced if New York had not shown what such a thing was; nor should they have enjoyed the elaborate brown stone fronts and monstrous stores which now crowd the principal business streets had not New York architects brought the existence of such affairs into notice. Cornelius, Baker, and Co. he adds, are erecting an immense factory in Cherry-street, near Eighth, all of ornamental brickwork, and rivalling in size the gigantic establishment of the Horstmann Brothers, at the corner of Fifth and Cherry, though not in design.

TELEGRAPHIC PROGRESS.—The *Cologne Gazette* affirms that the telegraph director, Gintl, has discovered the means of making one telegraph-wire convey two messages in opposite directions at the same time.

HOW PAINTERS MAY DIFFER.—Pray insert the following tenders for painting the outside of St. Pancras Workhouse:—

Short	£250	0	0
Harris	250	0	0
Newing	248	0	0
Clegg	195	0	0
Edwards and Co.	175	0	0
G. Wood	172	0	0
Ratclif and Co.	158	15	0
Purkis	151	0	0
Weller	150	0	0
Tailor	148	0	0
Tubb	144	0	0
Pallet	135	0	0
Metcalfe	109	0	0
Thorpe	99	0	0

METALLIC COMPOSITION FOR MOULDING, &C.—M. Chameroy, of Paris, has taken out a patent for melting one part of some easily fusible metal in a crucible, and then mixing with it four parts of a metal far less readily fusible, steeped in ammonia and reduced to powder. Such a compound is stated to be of great solidity, hardness, facility of soldering, melts at a low temperature, and has great tractability in moulding to any form, and in casting takes the sharpest impressions, while in its nature it is peculiarly unchangeable.

TENDERS

For pulling down old buildings and erecting three houses and shops at Great Ealing, Middlesex. Mr. A. C. Bean, architect.

Wakelin	£1,398	Deduct for old materials	£160
Hancock	1,395	" "	150
Nye	1,348	" "	137
Mansell (accepted)	1,288	" "	138

For additions and alterations to Court-house, Newington. Mr. E. Lapidge, architect.

Locke and Nesham	£5,848
Cubit and Co.	5,649
J. Higgs and Cullingford	5,235
Kelk	4,919
Piper and Son	4,900

For the erection of four villas at Queen Anne's park, Stroud-green, for Mr. Joseph Birkhead. Mr. Arthur Taylor, architect. Quantities supplied.

Mansfield and Son	£6,150
T. and C. T. Anson	5,989
Henry Burton	5,460
Haynes and Eyre	5,375
Carter and Ellis	5,287
Piper and Son	5,234

TO CORRESPONDENTS.

"J. L." "R. L. R." "W. H." (under our mark), "P. F." (ditto), "H. M." "Grey Coat Boy" (144 square inches), "F. S." "E. J. W." (one volume of the engravings from the *Builder*, entitled "Buildings and Monuments, Modern and Mediæval," may be had), "A Mechanic." "W. W." "S. and K." "H. G." (will appear), "D. C." (ditto), "J. J. M." "R. G. S." "T. C." "W. F. P." "E. M." "G. H." "Minos." "O H." (received), "G. R. C." "J. B." "J. C." "Mr. K." "G. R." (depends on arrangement), "J. H." "D. H."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

NATIONAL FREEHOLD LAND SOCIETY, 14, Moorgate-street, London.—Shares, 30*l.* each. Entrance Fee, One Shilling per Share. Monthly Subscription, 4*s.* per Share. No Fines on uncuntited Shares. Interest on completed Shares at the rate of 4*l.* per cent. per annum. Profit on uncompleted Shares at the rate of 5*l.* 8*s.* 4*l.* per cent. per annum. The estate at Hounslow is now sold. Several lots on the estates at Clapham, Cambridge, Cardiff, and Oxford, are undisposed of, and may be now taken by any person on payment of the price of the lots. A plan of either of the estates with the conditions of sale, may be had on application.

W. E. WHITTINGHAM, Secretary.

Office hours, Nine to Five daily, and on Fridays from Nine to Eight.—July, 1853.

THE CONSERVATIVE LAND SOCIETY. The Ninth Public Drawing for priority of choice on the Society's estates in various counties, will take place at the Offices, 33, Norfolk-street, Strand, on SATURDAY, the 13th of AUGUST, at TWELVE o'clock. All persons who take and pay on shares before the time of drawing will participate. Shares, 50*l.* Monthly payments, 1*s.* per share. Post-office orders for 12*s.* 6*d.* in the name of the Secretary, payable at 283, Strand, will secure the immediate entry of new country or town members in the Society's books. Office hours, from Ten to Five, except on Mondays and Fridays, from Ten to Eight o'clock. The allotment of the land plots from Tower-hill, West Kent, and of the estate at Brockley Park Estate, Fore-street-hill, West Kent, and of the estate half-way between Ware and Hertford, is fixed for THURSDAY, the 18th, at the Offices.

CHARLES LEWIS GRUNEISEN, Secretary.

THE CONSTITUTIONAL FREEHOLD LAND SOCIETY. Enrolled under 6 and 7 William IV. cap. 32. Offices, No. 123, Chancery-lane.

PATRONS.

The Most Noble the Marquis of Downshire.
The Right Honourable the Earl of Orkney.
G. H. Vansittart, esq. M.P.

This Society is formed to enable the members to purchase a piece of freehold land, suitable for a commodious residence and garden, with the advantage of a vote for the county, and to afford small capitalists a secure investment for their savings at good interest. All the profits divided among the members. Shares, 50*l.* each. Monthly subscriptions, 5*s.*; per share. Entrance fee, 2*s.* 6*d.* per share. Members are allowed 4 per cent. interest on six months' payments in advance, and on paid-up shares, and 5 per cent. on current subscriptions.

A Subscription Meeting is held at the Offices on the third Thursday in each month, when shares will be issued, and subscriptions received, from Seven until half-past Eight o'clock in the Evening.

Applications for prospectuses and shares, stating the name, residence, and occupation of the applicants, with the number of shares, and the counties in which qualifications to vote are required, should forthwith be made to the Solicitor, Surveyor, or EDWARD SCARGILL, Secretary, 123, Chancery-lane.

THE FINSBURY AND GENERAL FREEHOLD LAND SOCIETY.—Established 1850.—Enrolled pursuant to Act of Parliament.—Office, 48, Bedford-row, Holborn. Hours of business from 10 to 4 and 6 to 8, and every alternate Wednesday from 6 to 9 o'clock.

PRESIDENTS.

T. S. Duncombe, esq., M.P.; John Williams, Esq.; James Wyld, esq.

The Third Public Ballot, for rights to allotments on the Wood Green estate, recently purchased by the Society, will be held at the BRIDPORT ARMS, Harrison-street, Gray's-inn-road, on WEDNESDAY EVENING, AUGUST 3, 1853.—Chair to be taken at half-past seven precisely. The reserved plot on the Finchley estate will be put up to public competition previous to the ballot. All shares issued up to half-past eight o'clock that evening, on which one month's subscription has been paid, will be eligible for the ballot.—Monthly subscription, entrance and rules, 5*s.* 6*d.*

R. A. MARCH, Sec.

SALES BY AUCTION.

WALTHAMSTOW.—To LAND SOCIETIES and OTHERS.—Valuable Freehold Estate, within one mile of the intended Railway Station at Woodford.

MR. J. WOOD will SELL by AUCTION, at the MART, on TUESDAY, AUGUST 23, at TWELVE, in Lots, for the convenience of buyers (unless previously disposed of by private contract), FIFTEEN ACRES of particularly attractive FREEHOLD LAND, having important fronts as in two main roads, delightfully situate at Chapple-end, Walthamstow, opposite the Crooked Billet, on the high road to Chingford, six miles from the city, and in the immediate vicinity of many well-known and favourite resorts. This eligible estate is deserving the best attention of capitalists and freehold land societies, there being excellent brick earth in it, and every facility on the spot for an extensive building operation. Superior residences are much needed, and eagerly sought after, and property is rapidly enhancing in value, consequent upon the important advantages of railway access adjacent.—Detailed particulars, with plans and conditions of sale, will shortly be ready, and may be obtained of C. Chesson, Esq. Solicitor, 1, Winchester-buildings, Great Winchester-street, Broad-street, City; at the Crooked Billet and Chequers, Walthamstow; the Castle, Woodford; the Eagle, Snaresbrook; and head inns at Tottenham and Clapton; at the Mart; and of the Auctioneer, at his Land and Estate Office, 24, Acton-place, near the bridge, Kingsland-road, with whom treaty in the meantime may be made for the whole, or parcels of seven or eight acres.

500 Pieces of Paper-hangings and Vein Marble Chimney-pieces.

MR. BRAY, Jun. will SELL at his ROOMS, 229, High Holborn, on WEDNESDAY, AUGUST 3, at TWELVE, upwards of 7,500 PIECES of PAPER-HANGINGS, suitable for the drawing and dining rooms, boudoir, parlour, and principal rooms, secondary apartments, hall, and staircase.—May be viewed, and catalogues had.

BRICK-FIELD and BUILDING LAND.—Valuable Land at Weybridge half a mile from the Weybridge Station of the South-Western Railway, and eighteen miles from London. Land-tax redeemed.

MR. JOHN DAWSON will SELL by AUCTION, in AUGUST (not unless previously disposed of by private contract), SIX ACRES of rich FREEHOLD LAND, the whole or in Lots; admirably adapted for the erection of villas, commanding extensive views, and containing an inexhaustible supply of first-rate brick earth. The scarcity and value of bricks in this locality are well known. The bricks now to the field (about 200,000), with pug and washing-mills, &c. may be taken at a valuation.—Particulars prior to the sale, at Mr. Jones's Dawson's Offices, Kingston, Thames, and Marlborough-chambers, 49, Pall-mall, where orders to view may be obtained.

TO LAND AND BUILDING SOCIETIES, BUILDERS, &c.—Six acres of valuable Freehold Meadow Land, contiguous to the Church at Weybridge, Surrey a few minutes' railway station.

MR. JOHN DAWSON will SELL by AUCTION, at the MART, on WEDNESDAY, AUGUST 3rd, at TWELVE o'clock, in building lots, a valuable FREEHOLD MEADOW, free from land-tax, containing six acres, divided into lots varying in extent from one rood and upwards, eligibly situated contiguous to the parish church, in the delightful village of Weybridge, Surrey, near Oatlands Park, the rivers Wey and Thames, and only a few minutes' from the railway station. The land may be seen staked out.—Particulars with plans at the Ship, Weybridge; the Hand and Spear, near the Railway Station; of Thomas Curtis, Esq. Solicitor, Guildford, Surrey; and of Mr. John Dawson's Auction and Land Offices, Kingston-on-Thames, and Marlborough-chambers, 49, Pall-mall.

WEYBRIDGE.—Valuable Plots of Building Land in Oatlands-park, 18 miles from London, convenient to both the Walton and the Weybridge stations on the South-Western Railway, comprising together nearly two acres.

MR. JOHN DAWSON will SELL, at the MART, on WEDNESDAY, the 3rd of AUGUST, at TWELVE o'clock (unless an acceptable offer should be made in the mean time), several FREEHOLD PLOTS, in one, two, and more acres each, in the highly-esteemed locality, admirably adapted for the erection of villas, in part tithe-free, and having valuable road frontages; the highly ornamental timber will be included in the sales.—For cards to view, apply on the premises in the park.—Particulars may be had fourteen days prior to the sale, at the Mart; of Messrs. Nicholl and Smith, Lincoln's-inn; and at Mr. Dawson's Offices, Kingston, and 49, Pall-mall, of whom orders to view may be obtained.

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Household Tontine and General Life Assurance Company.

Nos 16 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

BUILDING LAND TO BE LET, for 99 Years' direct from the Freeholder, for 4-roomed Houses, at 30s. per house ground-rent, a short distance from Nine Elms, in the best part of the Wandsworth-road, in lots for twelve houses each. The lessee to build three houses at once, but to have the whole term to cover the remaining ground. Leases to be granted at once, and free from law charges. The roads and drains are made.—Apply, personally, to Mr. PARSONS, Seaton Lodge (opposite Devonshire-road, Wandsworth-road).

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money and bricks advanced if required.—For particulars apply to Mr. C. HAMBRIDGE, Architect, 73, Coleman-street, City.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 90 years. Ground rents may be paid by monthly payments.—For terms apply to Mr. HUGHES, Solicitor, 25, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Counting-house on each estate.

TO LET, or the LEASE to be SOLD, very spacious MANUFACTURING PREMISES, No 157, Upper Whitecross-street St. Luke's, with an excellent six horse power steam-engine fixed; also a strong crane. To view, apply on the premises.—Particulars of B. WHITTINGTON, Esq. No. 2, Dean-street, Finsbury.

THE WOODLANDS ESTATE, WIMBLEDON.—TO BE LET, on Building Leases, for Ninety nine Years, several PLOTS of LAND, for erecting detached villas, which are much called for in this desirable neighbourhood. Also, two Carcases, at a ground-rent. Respectable builders will meet with liberal encouragement. particulars apply to Mr. ROBERT DANIEL, Stone Merchant, Victoria Wharf, Pimlico; or at the Office on the Estate.

BUILDING LAND TO BE LET, at Epsom, near the Railway Station, where houses of all classes are in great demand. Leases for nine nine years, direct from the freeholder.—Apply to Messrs. G. and G. H. CLARK, Solicitors, 28, Finsbury-place.

TO LET, in the neighbourhood of Walworth, a DETACHED COTTAGE, with about half an acre of garden, with two mulberry-trees, a small greenhouse or chic-house, stable, &c. Rent 37l per year. Apply to R. EVANS and SON, Builders, Westcastreet Walworth.

BUILDING LAND TO LET, on Ninety-nine Years' Leases, in the Gloucester and Queen's road, at the north of Primrose-hill, and three minutes from the Regent's park, and the City Station. Six frontages for third-rate eight-roomed houses within that locality are very much in request, and will speedily let or sell as soon as completed. There are four corners well adapted for shops.—Apply to Mr. ELLIOART, 9, Harrington-square.

ANERLEY and NORWOOD, near the Crystal Palace, and HACKNEY, near Victoria Park.—BUILDING LAND TO LET, in the above eligible situations for long terms, at moderate ground-rents, with advances if required.—Apply to Mr. JAMES BRAGG, Surveyor, 5, Devonshire Villas, Bowhershithe.

LAUSANNE-ROAD.—The most preferable part of Peckham, leading to the Nunhead Cemetery, with a church in the centre of the property, within eight minutes' walk of the New Cross Station. TO LET, some eligible spots of BUILDING GROUND, direct from the freeholder, on Building Leases, at low Ground rents. Bricks can be had near the ground, much below the market price. Also three pair detached COTTAGES, in carcase, on lease, or the carcases to be sold at a very reduced rate, subject only to the original ground rent. For particulars inquire of Mr. RICHARDS, Laurel-cottage, Pomeroy-street; or 38, New Park-street, Southwark.

FREEHOLD BUILDING LAND, BRIXTON.—TO BE SOLD, about TWENTY-FOUR ACRES of FREEHOLD BUILDING LAND, containing brick-earth, and possessing three frontages of upwards of 1,000 feet each, one of them being next to a main road.—A plan of the land may be seen, and terms obtained on application to Messrs. WILTSHIRE and PARRIS, Architects and Surveyors, 5, Wolsingham-place, Lambeth.

BELGRAVIA.—Plot of Ground containing an area of about 15,000 square feet.—TO BE SOLD by PRIVATE CONTRACT, all those extensive PREMISES known as Davis's Riding Establishment, comprising dwelling-house, capital riding-school, stabling for forty horses, coach-house, veterinary forge, &c. situate between Motcomb-street and Kinnerton-street, and held for seventy years from the Marquis of Westminster, at only 62l. a year. The forge is sublet at 63l.—For particulars apply at the Offices of Mr. FRED. GODWIN, Auctioneer, 3, Halkin-terrace, Belgrave-square, where a plan of the property may be seen.

RARE OPPORTUNITY.—A First-class BRICK and TILE-YARD, now in active and successful operation, only six miles from London, adjoining a railway, and fitted up with the best and most recent improved patent machinery. TO BE SOLD, the valuable LEASE of this first-rate concern in the Brick and Tile Trade, consisting of twenty-five acres, with play of great depth, and in qualities specially applicable to all kinds of brick and tile manufacture.—For particulars (if by letter, prepaid) apply to Mr HENRY CLAYTON, Brick and Tile Machine Manufacturer, Atlas Works, Upper Park-place, Dorset-square, London.

FREEHOLD GROUND.—TO BE SOLD, a small FIELD, containing nearly four acres, pleasantly situate, about four miles from the Slough Station, and on the high road to Beaconsfield; suitable for building genteel cottages, as there are upwards of 500 feet in dep h and 200 feet frontage.—For further particulars apply to Mr. T. SALISBURY, the Good Samaritan Agar-town, Somers-town, St Pancras.

PULPITS.—TO BE SOLD, the beautiful modern PULPITS now standing in St. Peter's Church, Ashton-under-Lyne, with stair, mahogany handrail, ornate brass candlesticks, and carpeting complete. The pulpits are octagonal, panelled, and filled in with perpendicular tracery, and finished in the best style of Gothic workmanship. Likewise the Circular Railing round the Communion, with mahogany top and wrought balusters, suitable for either a church or chapel. Will be sold a bargain.—Application to be made to Mr. JOSEPH BROADBENT, the Churchwarden, 29, Welbeck street, Ashton-under-Lyne.

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WARD'S old-established Honduras-wharf, Bankside, and Jamaica Coffee-house, Cornhill, London.—PAN TILING, very best (second quality, 6s. per 100); plain, 4s.; 12 and 9 in paving ditto, remarkably bright and handsome; Cowley and Kent Stocks, Suffolk White and Red Facing Bricks; oven, covers, and flue Bricks; Tower Pipes; P. P. and Non-such Fire-bricks; Malt and Corn Drying Tiles; retorts and other Fire Goods to pattern; Thames Sand, River Gravel for Concrete Founders' Loam and Sand; White and Red House drips, Drain Pipes, &c. Barges of Sand and Gravel to wharfs or dock at short notice.

BRICKS.—Terms, cash.—Required, 200,000 Grizzle's and place bricks, half and half. Lowest price delivered (say at Chiltern Villas, Paddington) to be sent by letter (prepaid) to Mr. GRAVES, Auctioneer, Charles-street West, Paddington.

TO BRICKMAKERS.

WANTED, in the neighbourhood of Bow, A cut Lot of good Hard STOCK BRICKS, not particular to colour; price to include delivery within one mile of Bow-road.—Address to Mr. DRAPER, 121, Bunhill-row, Finsbury.

SURVEYING, ARCHITECTURAL and ENGINEERING ESTABLISHMENT, for preparing Gentlemen for Surveyors, Architects, Engineers, Levellers, Draughtsmen, Measurers, Valuers, &c. and for giving EVENING INSTRUCTION in Surveying, Levelling, Practical Engineering and Mechanical Drawing, Colouring, Perspective, Mathematics, Mechanics, Writing Specifications, Taking out Quantities, Preparing Estimates, &c. &c. Terms and Prospectus on application.—For prospectuses, &c. apply at the Offices, 21, Guildford-street, Russell-square.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and Professor of "The Picturesque Architecture of Paris. Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. from Pencil or Pen and Ink Drawings. He has had for such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

FRANCIS MORTON and CO.'S IMPROVED LIGHTNING CONDUCTORS, Points, Insulators, and Attachments complete.

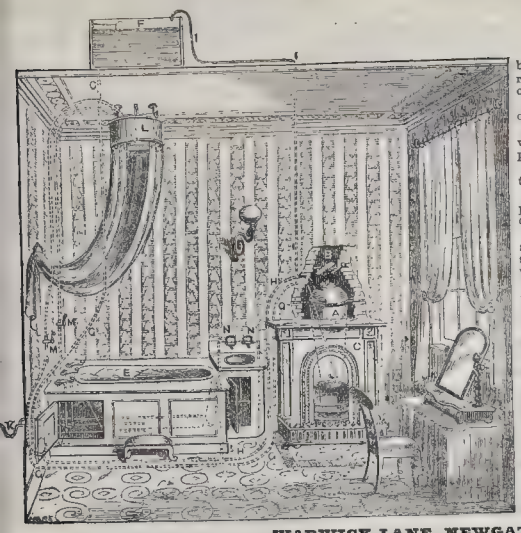
Copper Wire, 7 lbs. to the yard, 7½d. per yard, 1 inch long, 2s. and 8½d. per 100 feet. Glass Insulators, with galvanized iron attachments, for driving into brickwork, or screwed for wood or walls, 10s. per dozen. Compound Metal Points, tipped with Platina, Electro-plated in gold, 30s. 42s. and 60s. each; Electro-plated in silver, 20s. 30s. and 35s. each, according to length.

Copper Bells, Window Sash Lines; Galvanized Wire Sash Cords, for both uses, &c.

Wire Ropes of all kinds; Patent Wire Strand Fencing; Improved Patent Dry Hair Felt, in rolls of twenty yards long, for economising fuel, deadening sound, &c.; Patent Asphalted Roofing Felt, 1d. per superficial foot, ditto, for laying under slates.

FRANCIS MORTON and CO. Galvanized and Corrugated Iron Roofing Works, 10, North John-street, Liverpool; and 18, St. Mary's Gate, Manchester. Sole Agents for the Patent Fire Annihilator and the Patent Smokeless Furnaces.

J. TYLOR AND SON'S BATH APPARATUS.



To fix a Bath, the apparatus for heating which can be fixed in the same room, and the luxury of an Open Fire retained.

A. Copper Boiler of sufficient capacity to make a warm bath, clasped by an iron band to support it, and fixed in the breast-work of a chimney. A flue is carried all round, and the draught is regulated by a revolving damper, *B*, which covers the opening into chimney. When set, the Boiler is entirely concealed from view.

This Boiler can be adapted for any chimney, by making it of an oval or elongated orm.

A soot-door is fixed just underneath the damper for the convenience of cleaning, which, however, is rarely required, on account of the great draught round the boiler preventing any deposit of soot.

C. An ordinary stove front with sliding blower for the additional regulation of the draft.

E. Copper or tinned iron Bath, enamelled white marble inside, having three copper pipes, for the hot, cold, and waste water, which are indicated by the engraved levers on the cocks. The overflow is carried into waste-pipe *K*.

F. Cistern for cold water, say 100 gallons, which can be made of tinned iron, or any suitable material, either fitted into a recess or made of a cylindrical shape to stand on the floor of any room above the bath. The overflow can be carried into the waste or other convenient outlet.

G. Inch pipe from cistern to the pipe which goes to the bottom of boiler to fill it with water. A branch from this pipe also supplies the bath with cold water.

H. Inch pipe from the top pipe of boiler, to deliver the hot water into bath.

I. Half-inch pipe taken from the hot pipe *H*, and turned over the top of cistern, to relieve the boiler.

K. Inch or 1¼-inch pipe to take away waste water from bath into soil-pipe or drain, as may be most convenient, and must be well trapped before entering.

L. Round copper or tinned iron Shower Bath, suspended from ceiling, and filled with hot or cold water by branches from the pipes *G* and *H*, the supply being regulated by the two cocks *M M*, which are let in the wall, and have levers fixed on them, engraved, "hot and cold shower."

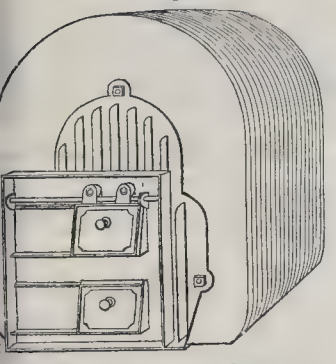
A thermometer can be fixed in the shower-bath to regulate the temperature.

N N. Wash-hand basin supplied with hot and cold water, by branches from the pipes *G* and *H*, the waste being carried into the overflow of bath.

By this simple arrangement, the boiler is always kept full of water, and cannot, by any means, be emptied by the action of the fire. The draught is so regulated by the blower and damper, that a bath can be made in twenty minutes, or an open fire kept continually alight.

WARWICK-LANE, NEWGATE-STREET, LONDON.

Gill Stove.



for fixing underground

STUART AND SMITH,

ROSCOE-PLACE, SHEFFIELD,

SOLE PROPRIETORS & MANUFACTURERS

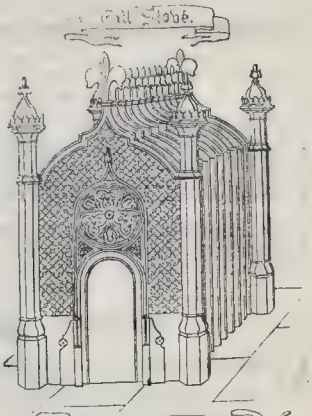
OF

THE GILL STOVE,

PATENTED BY THE LATE

JOHN SYLVESTER, Esq. C.E.

Gill Stove.



for fixing on floor of building

THE LONDON PARQUETRY

NOW MANUFACTURE

1. PARQUET PANELS, from 1s. 6d. per square foot.
2. PARQUET BORDERS, in geometrical and spiral designs, from 2s. 6d. per square foot.
3. PARQUET BORDERS (Veneered) on a new system, fixed in or upon ready-made floors, from 1s. per square foot.
4. PARQUET CLEANING AND POLISHING MACHINE, by the aid of which a youth can clean and polish a large room in a few hours, without exertion. Price 10*l.* each.

N.B. 1 and 2, if Water and Fire Proof, 3d. per square foot extra.

Applications (by letter) from Architects will be promptly attended to by

THE LONDON PARQUETRY,

8, WHITEFRIARS-STREET.

TO ARCHITECTS, SURVEYORS, ENGINEERS, AND BUILDERS.

PIGGOTT and CO. 523, New Oxford-street, call the attention of the above to their large assortment of every description of surveying and drawing instruments. Drawing of the best quality at the following prices:—

Steel Drawing Pens, with ivory handles	4s. 0d.
do. do. brass-jointed do.	4s. 0d.
do. do. German silver do.	4s. 6d.

and every other instrument of the best workmanship equally low.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 58, Pall-mall, London.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder-work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters, Centres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.
Machine Printing Works, Royal Mills, Wandsworth, Surrey;
Block Printing Works, 451, Oxford-street, London.

PAPER-HANGINGS. — JEFFREY, ALLEN, and CO. paper stainers, beg to call the attention of the trade to their patterns of Paper Hangings for the present season, which comprise every description of style and quality, from the most elaborate decoration to the cheapest paper that can be produced, and which they are prepared to offer at very low prices. J. A. and Co. also respectfully inform the trade that they have OPENED a WAREHOUSE, at No. 500, OXFORD-STREET, where all goods can be obtained on the same terms as at the Factory.
GUTTA PERCHA PAPER FOR DAMP WALLS. J. A. and Co. are the sole vendors of this well known remedy for Damp Walls. 113, Whitechapel, near the Obelisk, and 500, Oxford-street.

PAPER-HANGINGS, the cheapest in London, at CROSS'S Wholesale and Retail Warehouse, 29, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Bed-room Papers	from 0½d. per yard.
Painted Marble, Granite, and Oak Papers	from 0½d. do.
Superior Dining and Drawing-room Papers	from 1½d. do.
Satins and Flock	from 2½d. do.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.
PLANS, ELEVATIONS, DRAWINGS of MACHINERY, &c. lithographed or engraved.
BUILDERS' and CONTRACTORS' ACCOUNT-BOOKS; DRAWING PAPERS; ditto, mounted and continuous; TRACING PAPER and CLOTH; ditto in lengths.
GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.
WATERLOW and SONS, 65 to 68, London-wall; and 49, Parliament-street, London.
Contracts for the supply of large establishments.

SEYSSEL ASPHALTE COMPANY,

STANGATE, NEAR WESTMINSTER-BRIDGE, LONDON.

ESTABLISHED 1838

CLARIDGE'S PATENT.—Frequent complaints having been made by ARCHITECTS and others of the failure of certain works supposed to have been done by this Company (but which in fact were executed with spurious materials), a list of works executed with the

GENUINE SEYSSEL ASPHALTE

is kept at the Office, that it may be at any time ascertained whether any work in which a failure has taken place was executed by this Company. J. FARRELL, Secretary

N.B THE EXCLUSIVE SUPPLY OF ASPHALTE from the Mines of Pyrimont Seyssel being conceded to this Company, the Directors particularly recommend Architects, Builders, and others (for the purpose of securing the use of the genuine article) to insert in their specifications.

"PYRIMONT SEYSSEL ASPHALTE, CLARIDGE'S PATENT,"

and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gaslar, and other worthless and offensive compositions have been introduced.

1853.

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ORSI AND ARMANI.

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REDUCTION IN THE PRICE FOR VARIOUS WORKS FIFTEEN PER CENT.

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A printed List of the important Works for Flooring, Roofing, Covering of Arches, &c. &c. executed from 1848 to 1852, with this Material, may be obtained at the Office of

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THAN THE GENUINE SEYSSEL ASPHALTE OF MESSRS. O. AND A.

OR THIRTY PER CENT. LOWER THAN ANY OTHER MATERIAL CALLED BITUMEN OR ASPHALTE.

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OFFICES .....No. 13, BEAUFORT-BUILDINGS, STRAND.

DEPOT .....NORWAY-WHARF, MILLBANK-STREET, WESTMINSTER.

MANUFACTORY, ROTHERHITHE.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, &c.

In consequence of Claridge's Patent for the Mineral Rock Asphalte having expired, this Company is formed for importing and supplying the public with genuine Mineral Rock Asphalte, for Roofings, Floorings, Cementing of Brickwork, &c. &c. The Company having concluded favourable terms with the proprietors of the mines, and as their works are now in operation, they are prepared to Contract for Work to any extent. This Company's List of Prices shows a great reduction from those of any other Importer, and only a small per centage beyond those compositions termed Metallic Lava, or Bitumen.

A Guarantee is given for work executed by this Company for five years, free of any expenses. Particulars and lists of prices may be had, and samples seen, at the Offices of the Company as above.

GEO. BROUGHTON, Manager.

NOTE.—Mr. BROUGHTON, for many years with Claridge's Mineral Rock Asphalte Company, of Stangate, near Westminster Bridge, having accepted the Management of this Company's Works, the public are respectfully informed, that by favouring this Company with any orders, they may fully rely on having the Genuine Rock Asphalte as imported from the original mines; and all works will be carefully executed by workmen of long experience, and in the very best possible manner.

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

F. McNEILL and CO. of LAMB'S-BUILDINGS, BUNHILL-ROW, LONDON, Manufacturers and ONLY Patentees of

THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.

Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK,

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square. Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 32 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c. is also manufactured, by which a saving of about 25 per cent in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and CO.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW. Roofs covered with the Felt to be seen at the Factory, also the new Vice-Chancellor's Courts the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.



WHISHAW'S REGISTERED
IMPROVED TELEKOUPHONON
FOR SPEAKING-PIPES.

By means of this invention speaking-pipes may be rendered more generally available for Public Buildings, Club Houses, Noblemen's Mansions, City Warehouses, Offices, &c. &c. It consists of a whistle-mouthpiece of ivory, wood, or metal, with an indicator attached, by means of which, in case of two or more speaking-tubes being carried into one room, the mouthpiece from which a whistle proceeds is readily ascertained.

The newly-registered invention also embraces a plan (as shown in the right-hand figure) entirely to supersede the necessity of blowing into a speaking-pipe when the whistle at the further end is required to be sounded.

Manufactured solely by
KEPP and COMPANY, 30, 31, and 49, Chandos-street, Charing-cross;
And to be had retail of all respectable ironmongers.

ANCIENT HOUSE FURNITURE

In order to supply the deficiency which has hitherto existed in Furniture suitable for the many Mansions that have been erected or restored in the MEDIÆVAL STYLES, Messrs. CRACE have directed their particular attention to this subject, in addition to their other works, and have prepared appropriate specimens in the various branches of Furnishing.

STUFFS for HANGINGS, in simple Worsted Damask, in Silk; also in Tapestry of Bauderkin.

CARPETS, plain or in rich Velvet pile, with appropriate Borders.

PAPER-HANGINGS of various kinds.

OAK CABINETS, Buffets, Octagon Library and Occasional Tables, Benches, Chairs, and other useful and approp iate Furniture

The whole of the above-mentioned Furniture, &c. is designed by the late Mr. A. W. PUGIN, Architect.

To render this Furniture generally available, a considerable portion has been arranged in the simplest manner, consistent with its ancient character.

14, Wigmore-street, January, 1853.

ASPHALTE.—GERVASE FOOTTI

Trinidad Asphalte Works, Rotherhithe; established 18
Every description of Flooring laid with the above durable mater
in the best manner. Asphalte for Railway Arches, 3s. per t
Imporiter of Trinidad Asphalte.
Shipping Depôt, Devon Haytor Wharf, Rotherhithe.
G. H. CLARK, Agent

PAVING, 2s. 9d. per SQUARE YARD.—

Basements, Foot-walks, Malt-houses, Corn Stores, Floo
of Warehouses, and every description of Pavement laid down
the above low price, and the work guaranteed.—Apply to JOH
PILKINGTON, ICONOMAN'S BITUMEN PAVEMEN
OFFICE, MONUMENT CHAMBERS, 14, FISH-STREE
HILL.—N.B. Country Agents and Railway Engineers and Co
tractors supplied with the best bitumen for covering bridges a
arches.

NOTICE OF DIVIDEN

BANK OF DEPOSIT.
NATIONAL ASSURANCE AND INVESTMENT ASSOCIA
TION, 7, St. Martin's-place, Trafalgar-square, London.
The Warrants for the Half-yearly Interest, at the rate of 5 p
cent. per annum, on the Investment Stock of this Association, f
the 30th June, are ready for delivery, and payable daily betwee
the hours of Eleven and Three o'clock.
Depositors residing at a distance from London, will, on appl
cation, have the Dividend Warrants, together with the prope
receipts, forwarded for signature; the amount will then be pai
on presentation at the Head Offices in London, or transmitte
through the Local Agents of the Association, Country Bankers, o
in any other way, to suit the convenience of investors, so that th
dividends may in all cases be received without difficulty or delay.
July 9, 1853. PETER MORRISON, Managing Director.

NOTICE.—CHAPPUIS' PATENT

MYRIA-THATIC REFLECTOR.—It having come to th
knowledge of the patentee that certain parties are offering to the
public reflectors to light up dark places, which are imitations and
infringements of this patent, this is to give notice, that person
using such are liable to be restrained by injunction under the Act
15 and 16 Vict. cap. 83, and that information, which may lead t
the conviction of the infringers, will be rewarded on application
to the patentee, AUBIN CHAPPUIS Sole Manufacturer, 10
St. Mary-axe, City; or to BARLOW and CO. Office for Patents, 8
Chancery-lane.—July 1, 1853.

PREPARED FLOORING.—ALFRED

ROSLING begs to call the attention of Builders and Con
sumers generally to his STOCK of BOARDS, prepared in the bes
possible manner, and fit for present use; their superiority to the
floor-boards generally sold being sufficiently evinced by the greatly
increased demand. A. ROSLING is in a position to offer every
description of Baltic and other deals imported into this country a
the lowest possible price consistent with fair trading; and begs t
solicit the orders of those who have not as yet favoured him, feel
ing assured he can offer them advantages which they will ap
preciate.—Southwark-bridge Wharf, Bankside.

REDUCED PRICES.—EDWARD SIMMS

(late William Cleave), of Wilton-road, Pimlico Basin, beg
to acquaint Builders and the Trade that he has now on hand,
at his Manufactory (the first of its kind ever established), a very
large Assortment of Dry and Well-seasoned OAK and DEAL
PREPARED FLOORING BOARDS and MATCH BOARDING
of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width
and thickness, and at greatly Reduced Prices. Also, Timber,
Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by
Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's)
Flooring Manufactory, Wilton-road, Pimlico Basin.

By Her Majesty's Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desic-

cating Process for SALE, at E. I. FULLER'S Depôt, 27,
Wharf-road, City-road. 8 ash and Honduras Mahogany, Walnut,
coat, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring
and Match Boards, &c.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS,

and BATTENS, &c. sawn on the most approved principle;
Boards, &c. prepared, matched, and grooved, by Muir's Patent
Machinery. The Mills have all the advantages of navigation and
water-carriage, being connected with the Thames by the Grosvenor
Canal. Goods fetched from the docks, and carted home free of
charge. Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

SEASONED FLOORING.—A large stock

of dry YELLOW and WHITE FLOORING, prepared by
improved machinery, always on sale, at the lowest possible prices
at ARCHBUTT and ATKINSON'S, St. Pancras Saw Mills, Old St.
Pancras-road.

SYCAMORE, about Fifteen Loads, also

about the same quantity of HORNBEAM in the round TO
BE SOLD.—Apply to DIXON and CO. No. 2 Wharf, Queen's-
road, West Chelsea, where the goods are lying. Also a quantity
of Navvy Barrows and Ladders. Oak posts and fencing.—N.B. A
Pair of handsome Black Ponies for Sale.

A LARGE ASSORTMENT of WELL-

SEASONED, DRY, PREPARED WHITE and YELLOW
BATTEN FLOORING, also a large quantity of SCAFFOLD
POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf,
Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster,
Slates, and Slate Sinb, Tiles, &c. on Sale at the lowest remunerative
prices. Goods landed and carted. Ladders for sale. Apply to
H. P. DIXON and CO. as above. Great facilities for the prompt
execution of country orders.

MOULDINGS by MACHINERY.—

ARCHBUTT and ATKINSON will forward their new
and enlarged List of Diagrams on receipt of four penny stamps
(the price of the postage), St. Pancras Saw Mills, Old St. Pancras-
road.

THE GENERAL WOOD-CUTTING

COMPANY, TIMBER WHARF,
SAWING, PLANING, AND MOULDING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge,
are prepared to saw timber and deals, &c. cut and uncut, to any
extent, at the current prices of the day. They keep a large stock
of WELL-SEASONED FLOORING and MATCH BOARDS,
which, being manufactured by themselves, they offer at the lowest
remunerating profit. Buyers of timber, &c. from the company,
will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may
suit them.
The Company beg leave to call the attention of the trade to their
NEW MOULDING LIST, the largest ever published, and to state
that, in addition to the numerous patterns therein delineated,
their machinery enables them to execute every description of
mouldings, from drawings, &c. with an accuracy and despatch
which must insure satisfaction.
The moulding list, containing nearly 300 diagrams, with prices
attached, may be had at the mills, or shall be forwarded on receipt
of six postage stamps (the amount of the postage thereon).

The Builder.

SATURDAY, AUGUST 6, 1853.

As the result of thought demands thought for its mastery, Mr. Ruskin's second volume of "The Stones of Venice,"* just now published, requires more than one reading for its due estimation. It is divided into two parts, the "First, or Byzantine Period," and the "Second, or Gothic Period." The first has five chapters, headed The Throne, Torcello, Murano, St. Mark's, and Byzantine Palaces. The second, three, viz. The Nature of Gothic, Gothic Palaces, and The Ducal Palace. These are illustrated by twenty plates very elegantly drawn, and, with an Appendix, occupy 394 clearly printed pages. The book opens where the first volume leaves off,—at the approach to Venice,—and though we should rather occupy ourselves with the principles and opinions which the author enunciates, we cannot refuse our readers the gratification of perusing his eloquent description of the road to the sea-girt city:—

"In the olden days of travelling, now to return no more, in which distance could not be vanquished without toil, but in which that toil was rewarded, partly by the power of deliberate survey of the countries through which the journey lay, and partly by the happiness of the evening hours, when, from the top of the last hill he had surmounted, the traveller beheld the quiet village where he was to rest, scattered among the meadows beside its valley stream; or, from the long hoped for turn in the dusty perspective of the causeway, saw, for the first time, the towers of some famed city, faint in the rays of sunset—hours of peaceful and thoughtful pleasure, for which the rush of the arrival in the railway station is perhaps not always, or to all men, an equivalent,—in those days, I say, when there was something more to be anticipated and remembered in the first aspect of each successive halting-place, than a new arrangement of glass roofing and iron girder, there were few moments of which the recollection was more fondly cherished by the traveller, than that which, as I endeavoured to describe in the close of the last chapter, brought him within sight of Venice, as his gondola shot into the open lagoon from the canal of Mestre. Not but that the aspect of the city itself was generally the source of some slight disappointment; for, seen in this direction, its buildings are far less characteristic than those of the other great towns of Italy; but this inferiority was partly disguised by distance, and more than atoned for by the strange rising of its walls and towers out of the midst, as it seemed, of the deep sea; for it was impossible that the mind or the eye could at once comprehend the shallowness of the vast sheet of water which stretched away in leagues of rippling lustre to the north and south, or trace the narrow line of islets bounding it to the east. The salt breeze, the white moaning sea-birds, the masses of black weed separating and disappearing gradually, in knots of heaving shoal, under the advance of the steady tide, all proclaimed it to be indeed the ocean on whose bosom the great city rested so calmly; not such blue, soft, lake-like ocean as bathes the Neapolitan promontories, or sleeps beneath the marble rocks of Genoa, but a sea with the bleak power of our own northern waves, yet subdued into a strange spacious rest, and changed from its angry pallor into a field of burnished gold, as the sun declined behind the belfry tower of the lonely island church, fitly named 'St. George of the Seaweed.' As the boat drew nearer to the city, the coast which the traveller had just left sank behind him into one long, low, sad-coloured line, tufted irregularly with brushwood and willows: but at what seemed its northern extremity, the hills of Arqua rose in a dark cluster of purple pyramids, balanced on the bright mirage of the lagoon; two or three smooth surges of inferior hill extended themselves about their roots, and beyond these, beginning with the craggy peaks above Vicenza, the chain of the Alps girded the whole horizon to the north—a wall of jagged blue, here and there showing through its clefts a wilderness of misty precipices, fading far back into the recesses of Cadore, and itself rising and breaking away eastward, where the sun struck opposite upon its snow, into mighty fragments of peaked light, standing up behind the barred clouds of evening, one after another, countless, the crown of the Adrian Sea, until the eye turned back from pursuing them, to rest upon the nearer burning of the campaniles of Murano, and on the great city, where it magnified itself along the waves, as the quick silent pacing of the gondola drew nearer and nearer. And at last, when its walls were reached, and the outmost of its untrodden streets was entered, not through towered gate or guarded rampart, but as a deep inlet between two rocks of coral in the Indian sea; when first upon the traveller's sight opened the long ranges of columned palaces, each with its black boat moored at the portal, each with its image cast down, beneath its feet, upon that green pavement which every breeze broke into new fantasies of rich tessellation; when first, at the extremity of the bright vista, the shadowy Rialto threw its colossal curve slowly forth from behind the palace of the Camerlenghi; that strange curve, so delicate, so adamantine, strong as a mountain cavern, graceful as a bow just bent; when first, before its moonlike circumference was all risen, the gondolier's cry, 'Ah! Stali,' struck sharp upon the ear, and the prow turned aside under the mighty cornices that half met over the narrow canal, where the plash of the water followed close and loud, ringing along the marble by the boat's side; and when at last that boat darted forth upon the breadth of silver sea, across which the front of the Ducal Palace, flushed with its sanguine veins, looks to the snowy dome of Our Lady of Salvation, it was no marvel that the mind should be so deeply entranced by the visionary charm of a scene so beautiful and so strange, as to forget the darker truths of its history and its being. Well might it seem that such a city had owed her existence rather to the rod of the enchanter than the fear of the fugitive; that the waters which encircled her had been chosen for the mirror of her state rather than the shelter of her nakedness; and that all which in nature was wild or merciless,—Time and Decay, as well as the waves and tempests,—had been won to adorn her instead of to destroy, and might still spare, for ages to come, that beauty which seemed to have fixed for its throne the sands of the hour-glass as well as of the sea."

There is a similarly eloquent passage, descriptive of St. Mark's, but we pass on for a time to the "practical rules" which Mr. Ruskin sets down for determining in every instance whether a given building be good Gothic or not.

"First. Look if the roof rises in a steep gable, high above the walls. If it does not do this, there is something wrong: the building is not quite pure Gothic, or has been altered.

Secondly. Look if the principal windows and doors have pointed arches with gables over them. If not pointed arches, the building is not Gothic: if they have not any gables over them it is either not pure or not first-rate.

If, however, it has the steep roof, the pointed arch, and gable, all united, it is nearly certain to be a Gothic building of a very fine time.

Thirdly. Look if the arches are cusped, or apertures foliated. If the building has met the first two conditions, it is sure to be foliated somewhere; but, if not everywhere, the parts which are unfoliated are imperfect, unless they are large bearing arches, or small and sharp arches in groups, forming a kind of foliation by their own multiplicity, and relieved by sculpture and rich mouldings. The upper windows, for instance, in the east end of Westminster Abbey are imperfect for want of foliation. If there be no foliation anywhere, the building is assuredly imperfect Gothic.

Fourthly. If the building meets all the first three conditions, look if its arches in general, whether of windows and doors, or of minor ornamentation, are carried on *true shafts with bases and capitals*. If they are, then the building is assuredly of the finest Gothic style. It may still, perhaps, be an imitation, a feeble copy, or a bad example, of a noble style; but the manner of it, having met all these four conditions, is assuredly first-rate."

Even if not pure Gothic, the writer admits, it may nevertheless be noble architecture, and to discover this he says,—

"If it belong to any of the great schools of colour, its criticism becomes as complicated, and needs as much care, as that of a piece of music, and no general rules for it can be given; but if not—

First. See if it looks as if it had been built by strong men; if it has the sort of roughness, and largeness, and *nonchalance*, mixed, in places, with the exquisite tenderness which seems always to be the sign-manual of the broad vision and massy power of men who can see *past* the work they are doing, and betray here and there something like disdain for it. If the building has this character, it is much already in its favour; it will go hard but it proves a noble one. If it has not this, but is altogether accurate, minute, and scrupulous in its workmanship, it must belong to either the very best or the very worst of schools,—the very best, in which exquisite design is wrought out with untiring and conscientious care, as in the Giottesque Gothic; or the very worst, in which mechanism has taken the place of design. It is more likely, in general, that it should belong to the worst than the best; so that, on the whole, very accurate workmanship is to be esteemed a bad sign; and if there is nothing remarkable about the building but its precision, it may be passed at once with contempt.

Secondly. Observe if it be irregular, its different parts fitting themselves to different purposes, no one caring what becomes of them, so that they do their work."

If one part always answers accurately to another part, it is sure to be a bad building; (!) and the greater and more conspicuous the irregularities, the greater the chances are that it is a good one. Thirdly. "Observe if all the traceries, capitals, and other ornaments, are of perpetually varied design. If not, the work is assuredly bad."

Now with a spice of truth in this, there seems to us much in it which is untrue. If this doctrine could be maintained, the Greek Temple is unmitigated bad work; order, "Heaven's first law," is to be regarded as evidence of incapacity; and proportion is to go for nothing. That a building may be admirable *in spite of* great irregularities—that irregularities made for a purpose will even give pleasure, as evidencing design and attention to a purpose, is certain, but to make great and conspicuous irregularities—carelessness of how the parts of a building accord with one another—proof and reason of its excellence, is to revive an injurious error, and exalt the easy science of "higgledy piggledy."

His final definition of Gothic runs thus,—"Foliated architecture, which uses the pointed arch for the roof proper, and the gable for the roof mask."

Touching his condemnation of very accurate workmanship as a bad sign, the author reads in the accurate mouldings, perfect polishings, and unerring adjustments observable in our rooms, signs of a slavery more bitter and degrading than that of the scourged African,—the slavery of soul, the transformation of men into machines; and he considers that it is this degradation of the operative which is leading the mass of the nations into vain, incoherent strugglings for a freedom they cannot explain.

"We have much studied," he writes, "and much perfected, of late, the great civilized invention of the division of labour; only we give it a false name. It is not, truly speaking, the labour that is divided, but the men,—divided into mere segments of men,—broken into small fragments and crumbs of life,—so that all the little piece of intelligence that is left in a man is not enough to make a pin, or a nail, but exhausts itself in making the point of a pin, or the head of a nail. Now it is a good and desirable thing, truly, to make many pins in a day; but if we could only see with what crystal sand their points were polished,—sand of human soul, much to be magnified before it can be discerned for what it is,—we should think there might be some loss in it also. And the great cry that rises from all our manufacturing cities, louder than their furnace blast, is all in very deed for this,—that we manufacture everything there, except men; we blanch cotton, and strengthen steel, and refine sugar, and shape pottery; but to brighten, to strengthen, to refine, or to form

* "The Stones of Venice. Volume the Second. The Sea Stories." By John Ruskin, author of "The Seven Lamps of Architecture," "Modern Painters," &c. &c. With Illustrations drawn by the Author. London: Smith Elder, and Co. 65, Cornhill. 1853.

a single-living spirit, never enters into our estimate of advantages."

As a remedy three rules are proposed:—

"1. Never encourage the manufacture of any article not absolutely necessary, in the production of which *Invention* has no share.

2. Never demand an exact finish for its own sake, but only for some practical or noble end.

3. Never encourage imitation or copying of any kind, except for the sake of preserving record of great works."

Our author considers that the Gothic art of Venice was separated into two distinct periods by the building of the DUCAL PALACE, and he therefore devotes a considerable space to review the history, fix the date, and note the most important particulars in the structure of that building, "which at once consummates and embodies the entire system of the Gothic architecture of Venice." The commencement and completion of the Gothic portion ranges from 1301 to 1423. The account includes an elaborate examination of the "course of divinity and of natural history embodied by the old sculptor in the great series of capitals which support the lower arcade of the palace; and which, being at a height of little more than 8 feet above the eye, might be read, like the pages of a book, by those (the noblest men in Venice) who habitually walked beneath the shadow of this great arcade at the time of their first meeting each other for morning converse."

The principal sculptures of the capitals in this very remarkable marble book consist, as many of our readers recollect, of personifications of the Virtues and Vices; and Mr. Ruskin has brought a large amount of learning, reading, and ability to bear on the inquiry. Of his *ingenuity*, the account of the nineteenth capital ("the second counting from the sea, on the Piazzetta side of the palace, calling that of the Fig-tree angle the first") will serve as proof. This, he says,—

"Is the most important capital, as a piece of evidence in point of dates, in the whole palace. Great pains have been taken with it, and in some portion of the accompanying furniture or ornaments of each of its figures a small piece of coloured marble has been inlaid, with peculiar significance: for the capital represents the *arts of sculpture and architecture;* and the inlaying of the coloured stones (which are far too small to be effective at a distance, and are found in this one capital only of the whole series) is merely an expression of the architect's feeling of the essential importance of this art of inlaying, and of the value of colour generally in his own art."

His dissertation on the windows of Venice is exceedingly interesting and valuable, and is illustrated with a charming pencil. The variety they present is extraordinary: each *exhibits* thought, and so *induces* thought and gives pleasure, and yet in their general character they are "fraternally" alike. Our author pleads strongly for the introduction of the pointed arch into our domestic architecture, not merely because of its beauty, "but because it is the only form of faithful, strong, enduring, and honourable building, in such materials as come daily to our hands." Of the present disgraceful mode of bad building he speaks forcibly:—

"There is hardly a week passes without some catastrophe brought about by the base principles of modern building; some vaultless floor that drops the staggering crowd through the jagged rents of its rotten timbers; some baseless bridge that is washed away by the first wave of a summer flood; some fungous wall of nascent rottenness that a thunder-shower soaks down with its workmen into a heap of slime and death. These we hear of, day by day; yet these indicate but the thousandth part of the evil. The portion of the national income sacrificed in mere bad building, in the perpetual repairs, and swift condemnation and pulling down of ill-built shells of houses, passes all calculation. And the weight of the penalty is not yet felt; it will tell upon our children some fifty years hence, when the cheap work, and contract work, and stucco and plaster work, and bad iron work, and all the other expedients of modern rivalry, vanity, and dishonesty, begin to show themselves for what they are."

Following up his appeal for the use of Gothic forms in our domestic architecture, he writes:—

"Give the groups of associated lights bold gable canopies; charge the gables with sculpture and colour; and instead of the base and almost useless Greek portico, letting the rain and wind enter it at will, build the steeply-vaulted and completely sheltered Gothic porch; and on all these fields for rich decoration let the common workman carve what he pleases, to the best of his power, and we may have a school of domestic architecture in the nineteenth century, which will make our children grateful to us, and proud of us, till the thirtieth."

Before doing this, of course, it would be desirable to give the common workman *some* power; and even then we should doubt the sufficiency of the recipe to produce the foretold result. In an appendix on stained glass, the author properly joins those who reprobate the attempt to turn painted windows into pretty pictures as a gross barbarism.

"It originated, I suppose, with the Germans, who seem for the present distinguished among European nations by the loss of the sense of colour; but it appears of late to have considerable chance of establishing itself in England: and it is a two-edged error, striking in two directions; first, at the healthy appreciation of painting, and then at the healthy appreciation of glass. Colour, ground with oil, and laid on a solid opaque ground, furnishes to the human hand the most exquisite means of expression which the human sight and invention can find or require. By its two opposite qualities, each naturally and easily attainable, of transparency in shadow and opacity in light, it complies with the conditions of nature; and by its perfect governableness it permits the utmost possible fulness and subtlety in the harmonies of colours, as well as the utmost perfection in the drawing.

Glass, considered as a material for a picture, is exactly as bad as oil-paint is good. It sets out by reversing the conditions of nature, by making the lights transparent and the shadows opaque; and the ungovernableness of its colour (changing in the furnace), and its violence (being always on a high key, because produced by actual light), render it so disadvantageous in every way, that the result of working in it for pictorial effect would infallibly be the destruction of all the appreciation of the noble qualities of pictorial colour."

"The true perfection of a painted window is to be serene, intense, brilliant, like flaming jewellery; full of easily legible and quaint subjects, and exquisitely subtle, yet simple, in its harmonies. In a word, this perfection has been consummated in the designs, never to be surpassed, if ever again to be approached by human art, of the French windows of the twelfth and thirteenth centuries."

Much of the architecture in Italy (as we are reminded in turning over Mr. Ruskin's pages), serves to force upon consideration our ignorant neglect of the real use of brick. You may there see the most varied and beautiful inventions expressed in this material,—mouldings, tracery, flowers, figures, everywhere varied, and showing visibly the movement of the hand and the feeling of the heart. One would be clever to discover a single expression of feeling or elevated effort in a whole mile of the brick or compo-fronted houses of our time. To put life, and thought, and vigour into the architecture of the day, is one great object with the accomplished author now before us; and, with reservation of assent to many of his opinions, we give him our warm admiration and hearty applause.

THE BRITISH ARCHÆOLOGICAL ASSOCIATION AT ROCHESTER AND MAIDSTONE.

THE British Archæological Association had two splendid days on Thursday and Friday in last week. The first full of archæological interest, and affording great gratification to all from the beautiful scenery they passed through; and the second for the great meeting at Maidstone and at Leeds Castle, where Mr. Wykeham Martin behaved with the greatest kindness and liberality. The reception at Maidstone by the mayor and corporation at the Town-hall was most honourable, and the *soirée* given by them at the Assembly-rooms in the evening very agreeable. There were probably between three and four hundred persons present. The rooms were hung all over with drawings and rubbings of brasses; and the collections of Mr. Espinasse (the recorder of Maidstone), Mr. Bensted, Dr. Plumley, and other gentlemen, very nicely arranged. The "creature comforts" of tea, coffee, sandwiches, wine, and ices, were kept going the whole evening. The banquet at Leeds Castle, too, was admirable: about 140 persons sat down. There are some beautiful examples of the Tudor arms and badges in the spandrils of the arches, over the fireplaces, in the old part of the building: one is very curious, from the English arms being supported by two lions, which we do not remember any other instance of after the time of Edward IV. Mr. Planché thought it must be in compliment to Elizabeth of York (Queen of Henry VII.).

Malling Abbey, seen on Thursday, after Kit's Coty House, Allington Castle, and other places, is singularly interesting.

With Mr. Charles's Museum the members were especially pleased. Such a house and curious old garden!—a model for Mr. Page's in the *Merry Wives of Windsor*. The owner seemed delighted with his guests; and it is to be hoped that the excitement will not have been too much for him. There is another most curious old house at Hollingbourne, with the tapestries remaining; and a fine oak-panelled room in it, with a beautiful gilt pattern in every panel. There is also a singular gallery at the top of the house, the plaster of which has been covered with ornamental scrollwork and figures. Hollingbourne Church has a sanctuary chapel of the Culpeppers in it, with a fine alabaster effigy of one of the ladies of the family; and the altar-cloth, the curtains and hangings of the pulpit, &c. are of velvet, with borders of cherubims embroidered in gold and colours by the females of the family in the beginning of the seventeenth century.

At the evening meeting, Mr. Planché read a paper on the Earls of Kent, prefacing it with a remark,—that the county of Kent, from its geographical position, was, from the earliest period, one of the most important in England, and had it included the metropolis, which now all but touched it, few of the great events of English history would have occurred without its pale. Even before the Conquest the ferocious Hengist, the pious Ethelbert, the gorgeous Godwin, arose before the antiquary in misty grandeur; but he would not be tempted to ramble amidst the romances of Nennius and Geldas, to question the existence of Rowena or the treachery of the father, the virtues of the first Christian king, or the fortunes of the last Saxon earl, but confine himself to the lords of Kent after the conquest, and try to distinguish the few facts which can be established from the mass of fable, speculation, and error which commonly composed "the dust of ages." Odo, Bishop of Bayeux, a half-brother of the Conqueror, and a most warlike prelate, was the first earl of Kent after the conquest.

Concerning Maidstone, Mr. Whichcord, Jun. gave some information, of which we will now avail ourselves.

The early history of Maidstone is very meagre. Roman remains which have been found in it, especially a Roman bath, sufficiently prove it to have been in existence at that early date; and it has been recognised by antiquaries, and amongst them by Camden, as the *Vagniacæ*. The modern name of the town is doubtless derived from the River Medway running through it; the Saxon "Med-weg" being easily resolved into Med-weg's town,

Keddestan, Maidstone. In the records of the Justices itinerant in the time of Edward I. it is said to have been called Maydenstone, or the town of Maidens.* The chief remaining antiquities are the group of buildings around the existing parish church, consisting of the church itself, the palace of the Archbishops of Canterbury, the college of William de Courtney, which has been ably treated of in a work by the Rev. Beale Poste. There are also some very slight remains in a house to the east of the college, conjectured by Newton to be the monastery of Grey Friars mentioned in the supplement to the "Monasticon" as being founded by King Edward III. and his brother the Earl of Cornwall.

On the western side of the river are some remains, confined, however, to the chapel of the Hospital for Travellers or Pilgrims, dedicated to St. Peter, St. Paul, and St. Thomas à Becket: it was established about the middle of the thirteenth century by Boniface, Archbishop of Canterbury, son of Peter, Earl of Savoy, and uncle to Queen Eleanor, wife of Henry III.

The grammar school is interesting as having formerly been a house of the brethren of Corpus Christi, who were to pray for the fraternity of the guild, and celebrate masses for the repose of their souls when dead.

Returning to the group of buildings round the church. The palace, on the authority of Lambard and Kilburn, was begun in 1348, by John Ufford, Archbishop of Canterbury, and carried on by his successor, Archbishop Simion Islip, who proceeded very expeditiously with the work, pulling down his palace of Wrotham for the sake of the materials, and by licence of the pope, charging his whole province with a tax of 4d. in the mark for this purpose. Very little of Ufford or Islip's work is now traceable. The existing structure is to be attributed to Cardinal Morton, 1486, and to Sir Thomas Wyatt, who became possessed of it through his grandfather, Sir Henry Wyatt, of Allington Castle, to whom it was granted by Henry VIII.

The church was founded by William de Courtney, Archbishop of Canterbury, who, in 1395, obtained a licence from King Richard II. to convert the parish church of St. Mary, at Maidstone, into a collegiate church of one master or warden, and as many chaplains as he should think fit, and to assign and to appropriate several rich benefices to their use. In the centre of the chancel was formerly a superb brass of Courtney, the incision for which in a large slab of Bethersden marble is to be seen.

The archbishop, in a codicil to his will, directed his body to be interred in this church. Much discussion has taken place, however, as to the site of his tomb, but this was set at rest a few years ago on examination, when his body, arrayed in full pontificals, was found.

On the tomb of Wotton, the first master of the college, situated at the back of the sedilia, between the high altar and the Arundel chantry, are painted the arms of Courtney, with painted subjects which refer to the dedication of the chantry by Archbishop Arundel, in 1406.

The painting on this tomb, and on the screen on the opposite side, dividing the high altar from Gould's chantry, have been exquisitely done; and though much defaced, sufficient remains to enable a just restoration to be made. On this, as a complete type of the principle which governed the mediæval artists in this mode of decoration, Mr. Whichcord founded a paper on the Polychromy of the Middle Ages, and this we shall give hereafter *in extenso*.

Mr. Bernal, the president, in bringing the meeting at Maidstone to a close, justly thanked the mayor and corporation for a day auspicious in its commencement, and admirable in its close. "Kent," said he, genially, "has been termed the garden of England, Maidstone the *parterre* of that garden, and the types of that *parterre* are the female excellence and beauty that I see around me. As long as the other sex partake of our innocent amusements and grace our meetings, there can be no doubt of our success. And now having laboured since nine o'clock this morning in the cause of archæology, I beg, on the part of the British Archæological Association, to return their thanks, and to say that the members are penetrated with gratitude for the kind and honourable reception we have received in your town."

To the people of Rochester the Association owe nothing. According to the confidential whisper of one of their own townsmen, who says we may give his name if we like, "the inhabitants, with a few excellent exceptions, are comprised under two heads,—bigotted politicians and obtuse ignoramuses." Gundulf forbid! however, that *we* should say this. We but repeat.

* The old seal represents a maid standing on a stone.

AN ACCOUNT OF ROCHESTER CATHEDRAL.

In accordance with our promise, we now give a digest of Mr. Ashpitel's discourse on the cathedral. The speaker said: The chronicles of Rochester Cathedral gave but scanty information respecting it, at least, compared with those of some other collegiate bodies. The fabric itself had been much altered, some fifty years back, by men who had good intentions, and but little knowledge; and those points which the eye of the architect and antiquary would readily catch in an untouched building had been so changed, that the best of all tests was lost. The cathedral, however, possessed such points both of curiosity and intrinsic beauty, that he was sure that the most imperfect attempt must create great interest in those who would give any attention to the subject. The bishopric was founded by Ethelbert, in the year 600, and Justus was consecrated the first bishop by St. Augustin, in the year 604. No record exists of any mention of the building till the year 725, when Bede, who describes in very feeling terms the death of Bishop Tobias, and praises him as a great scholar, not only in the Saxon and Latin tongues, but, which was rare, indeed, in those times, in the Greek language, says, "he was buried in the porch (porticus or aisle) of St. Paul the Apostle, which he built within the Church of St. Andrew for his own place of burial." This is but scanty notice of a church of which we hear no more for centuries. It is true there are very many grants of land during this time to the see, but no mention of the cathedral is at all made. In 991, Ethelred thought proper to commit some serious inroads on the property of the church, and from 1014 to 1058 we have the authority of the great antiquary Dugdale, who tells us he could not even find a word of who was bishop through this long period. According to the chronicler, Edmund de Hadenham—anno 1057—things were in a most deplorable condition. The Bishop Sigward died almost suddenly, "leaving the church," says the annalist, "in a miserable and empty condition, in want of everything within and without. In it were only four canons, living in a low state, and dressed in plebeian garments." "To correct these miseries, the wisest Bishop Lanfranc," says the chronicler, "gave the see to Arnost, a monk of Bec." He only remained there half a year. Lanfranc then appointed that most worthy man Gundulf, says the chronicler. Of this great man, suffice it for an architect to say he is described by Ernulfus, as a man "most knowing and efficacious" in building work (*cementario opere*), and that he then states how he built the castle at Rochester. The Monk of Rochester, who wrote his life so well, gives this account of his progress:—"A very short time having elapsed, a new church, the old being destroyed, is begun, a circle of offices are conveniently disposed. The whole work in a few years, Lanfranc providing much money, was carried out. Therefore all being finished, and from only five canons who were found there, many others being associated, and flowing to the religious garb, the monks increased to the number of sixty and more, under the doctrine of the father Gundulf." Tradition and later historians have stated he never lived to complete the cathedral, but that it was done by Ernulfus. There seems to be some probability in this. The latter, according to the Rochester chronicle, and to Edmund de Hadenham, built the dormitory, infirmary, and chapter house. The fronts of these latter remain, and they partake of the style of the west front, rather than of that of Gundulf. The latter are decidedly of the later Norman. The former of the simpler and earlier. One of the best tests is, perhaps, to compare the work with earlier work, and catch such points as are common to both. Thus as Byzantine or Romanesque sprang from Roman work, as Norman sprang from the former, and the Pointed styles followed in slow succession these last, so any decided deviation in principle should be considered a probable test of their respective periods. In all Roman or classic architecture, the edge of the arch, the intersection of the face and the soffite is an arris, or intersection of two plain faces. So it is in older Norman. In the later style it begins to be moulded, till at last there is no flat soffite, but the whole forms one aggregate of massive mouldings. This difference will be clearly apparent on inspecting the two fronts. Not only is this so, but the last pier to the westward in the interior is of larger dimension, and in the triforium there is clearly found the indication of a junction of new work with old. The presumption therefore is, that the tradition is correct, and that Ernulf altered the last bay, or rather lengthened the nave one bay, and erected the splendid west front. This is still further strengthened by the fact that no consecration took place till 1133, when, according to Gervase (*Decem Scriptores*), this office was performed by John, Bishop of Canterbury. Had it been finished in Gundulf's time, it surely would have been consecrated then, instead of waiting eighteen years after his death. Only four years after this, according to De Hadenham, or five years according to Gervase, a fire broke out and consumed the church and city of Rochester, with all the offices of the monks, and four years after we find the Bishop Ascelin labouring assiduously to repair the damages. In 1177 a second fire took place and burnt, says the annalist, the Church of Rochester and the whole city within and without the walls, on the 3rd of the ides of April. In 1215 there was a worse calamity; King John besieged the castle, in which were the powerful barons William de Albinet, and many others. Through some strange neglect or cowardice, Robert Fitz Walter, who laid with the army at London, refused to march to their assistance, and the castle was miserably taken, says De Hadenham, and the church at Rochester so plundered, that there was not a pix left. During this period, however, a strange event took place, which turned the fortunes of the monks, and enabled them to rebuild their church. Before, however, we narrate this, let us consider what the old Norman church really consisted of. The existing nave is clearly that of Gundulf, till within two arches of the transepts. A little to the eastward of the north transept is a fine massive tower—called Gundulf's tower—and this is clearly Norman. We must now descend into the crypt, and there we find work of two periods—one evidently Early English. The other consists of very rude early groins, supported by small plain cylindrical shafts, and heavy cushion-like capitals. So early does this work seem that it has often been called Saxon. The east end of this work is evidently mixed with the Early English—in fact the extreme east column seems to have been cased with the new pier. Mr. Ashpitel's first idea was, that there was a circular or octagonal apsis, but, on setting out the lines, and probing the ground with a borer, nothing of the kind was found. However, on proceeding eastward, the distance of two bays more, the foundations of a huge rubble wall were found upwards of eight feet thick. This wall appeared, as far as could be discovered (as there was no opportunity for digging—not to mention a thorough excavation), to form the straight or flat end of the old church—showing the probability that there had been no apsis. On reference to the *Registrum Roffense*, it was found that Reginald, who was prior in 1154, had made two bells and placed them in the large tower—a clear evidence there had been *two* towers. Now, as one tower exists at the side of the church, and as there seem to be marks of a large arch in it, the possibility is, that this tower formed part of a species of transept, and that the other tower stood on the north side and matched it, just as the two towers do at Exeter Cathedral. A curious mistake has crept into some books, and that is that Prior Silvester built the refectory, the dormitory,

and the hostelry, and nothing could show in a stronger light the necessity of going to the fountain-head, and consulting the original documents themselves. Only two words are omitted, but these make all the difference. Silvester did erect the buildings as stated, but the M.S. adds "at Waletune." It goes on, however, to say, "and at Rochester he removed the private house which formerly was attached (*adhæsit*) to the dormitory, and he made two windows in the chapter-house towards the east." A great number of notices are given of presents of windows. We are then told that "Thalebot the sacrist made the whole lavatory, and the great cross with Mary and John, and a great 'clocca' which to the present day retains the name of the aforesaid Thalebot." Whether by "clocca" is meant a "clock" in our sense of the word, or only a bell, seems uncertain. The annalist always uses the word "campana" to signify the latter. He continues, "In 1199 Radulfus the prior made the brewery, and the great and less chambers of the Prior, and the stone houses in the cemetery, and the hostelry, and the grange in the vineyard and the grange at Stoke, and the stable; and he caused the great church to be roofed and the greater part covered with lead. Helyas, the prior, leaded the great church, and that part of the cloister next the dormitory; and he made the lavatory and the guests' refectory. Heymeric de Tunebregge, the monk, made the cloister towards the infirmary; Roger de Saunford, monk and cellarer, made the brewhouse of stone and lime and tiles." To return, it has been stated that a strange chance had enabled the monks to receive money enough to rebuild their choir, spite of all their former untoward accidents. It occurred that a baker of Perth, who had attained a character for piety and charity, and who was said to give every tenth loaf to the poor, resolved on a pilgrimage to Jerusalem. He sold all he had for that purpose, and set off for the continent; passing through Rochester, he stopped there some days, and by his pleasing manners won the good opinion of every one. On his departure, his servant, tempted by the money he carried, attacked him as soon as he went out of the town, and murdered him. His fate caused great sympathy, and his remains were interred in the cathedral. Shortly after, reports of miracles done at his tomb were spread abroad, and increased to that degree that shoals of pilgrims from all parts of the country flocked to his shrine with offerings. The "Rochester Chronicle" states three things which seem to be very discrepant; first, that Richard Eastgate built the north aisle opposite the gate of S. William; that Richard de Waletune built the south aisle; that William de Hoo built the whole of the choir. Now, that aisles of such a construction could be built without a choir between them seems impossible. But if we reflect that "ala," in its primitive form, signifies a transept, and that transepts are very often called cross aisles, the matter seems intelligible. Not only so, it explains a thing which has not been done as yet. The two transepts differ in design: one is at least forty years later than the other. Now, if this interpretation be allowed, the whole is clear. Richard Eastgate, the sacrist, began the north aisle, which was finished by Thomas de Meopham, probably another sacrist; and then, after an interval, we can readily conceive how a third sacrist (or probably a fourth, for William de Hoo was sacrist ere he was prior) erected the other transept in a different style at a later period. This also explains the phrase that William de Hoo built the whole choir. This was finished in 1227, sufficiently to commence the performance of divine worship therein, when the "*Introitus*" took place. In 1240 (continues the annalist) the altar in the chapel of the infirmary was dedicated in honour of the blessed Virgin Mary. In the same year (he continues) the church at Rochester was dedicated by the Lord Richard, its bishop, and the Bishop of Bangor, on the nones of November. In 1264 the city and castle were again besieged by the famous Simon de Montford, Earl of Leicester, and the barons. They were defended by John de Warren and Sir R. de Leybourn. The first day they burnt the barns and out-buildings belonging to the cathedral which were outside the walls. The next day they burnt the bridge and outer work; they then stormed the city; and in 1331 the bishop visited Rochester, and found the church and buildings to want great repair, and a new refectory and long bakehouse to be built. William de Dene says he gave from his own purse 200*l.* for this purpose, besides 400 marks he had formerly given towards the reparation of the manor and grange houses. In 1343 he caused the new tower of the church at Rochester to be raised with stone and timber, and to be covered with lead. He also gave four new bells to place in the same, whose names are Dunstan, Paulinus, Ithamar, and Lanfranc. In the ensuing year he renovated the shrines of St. Paulinus and Ithamar, at the expense of 200 marks. This is the last mention we have in the chronicles of any buildings at Rochester. This prelate was forced by trouble and persecution to resign his see to the pope, who refused to accept it, and supported him with all his power. It was, however, in vain, and he sank and died a few years after. His works are probably the magnificent doorway into the present chapter-house, and the walls of its lower part; the few decorated windows there are about the south-west transept, and probably the old refectory with its internal passage. The work of the Perpendicular period consists of a chapel called by tradition St. Mary's Chapel, the great west window, some alterations at the east window, the windows of the clerestory, of the nave, and some minor matters. It is reported that at the time of the Reformation the Lady Chapel was thrown into the choir, and the new chapel built *in vice ejus*. If this be so it must have been done by Fisher, but there is no record of any such thing being done. In fact, any removal of a Lady Chapel must have taken place at a time when any rededication to the Virgin would have been extremely improbable. The great west window was probably of the time of Henry VII. We find alterations of this kind in many churches and cathedrals, without name or notice of those who executed them. It seems to have originated thus:—As soon as it was evident that Henry VIII. intended to confiscate the property of the church, it was immediately determined to repair the buildings in every way they could. They considered that there probably would be no funds to keep them up, and so they resolved they would keep off the tooth of time as long as possible; and besides, it lightened the store of money in the treasury, and made every see seem poorer than it was. Mr. Ashpitel conducted the party round the cathedral, commencing with the nave. Gundulf's work here is of singular beauty, containing more enrichment than is to be found in any Norman nave in the kingdom. The mouldings of the arches are boldly and richly carved, and the spandrils in the triforium are covered with diapers, varying in design in every bay.*

* We intended to give with this account a view inside the cathedral, but are forced by the illness of the engraver to delay it for a week.

ISLINGTON PARKS.

In all large cities that are not walled in by ramparts, and especially in an overgrown city like London, it is indispensable for the health of the inhabitants that the streets should be of great length, with outlets to the country or to squares and parks. In passing through the streets where several squares are congregated together, as from Russell-square to the railway terminus across Euston-square, I have found at all times a pleasant air. I have been told that the most salubrious of London's outskirts is Islington: that surely is not now, but was when all northern travellers well knew the Peacock, and hailed it as the entrance to the modern Babylon, or as the exit towards a delightful country excursion. I know many circumscribed foreign parks, and can well contrast them with our noble *Hyde-park*, and nearly contiguous Green and St. James's parks. I remember the first formation of the beautiful Regent's-park; I have traversed the growing Victoria-park, and on the map I see the projected one for Battersea, and I have *heard* of one *intended* for Finsbury. All this I can well understand, but I must confess myself at a loss with the misnomers which I met with in this once *airy* Islington. All appears to be left to the utilitarian mercy of the speculating builder Mr. Compo, and to his lack of taste. New houses arise, mostly stuccoed, generally crooked, showily *fitted* up with materials *unfit* for use, so that you may expect to be disagreeably roused, should you sleep without canopy over your couch, by the plaster of a portion of ceiling falling on you; or in your dining-room to risk the littering of your soup by a similar process; but let me to my theme, and breathe again. This Finsbury-park must be visionary, as its only possible site is already swarming with houses, which seems to be the sense in which the name of *park* is understood in this locality, only that the crowded buildings are so placed that the air is excluded, or is expected to move in curves (may be Col. Reid's excellent theory of storms is thus understood), by those to whose bright intellect the arrangement is confided; so that a shady walk becomes impossible.

After enumerating the parks known, I will point out to you those unknown, and intended to be so by their perpetrators. Thus *Barnsbury-park* is a narrow street containing some forty cottages; *Highbury-park* is a narrow street of large houses, with a narrow belt of plants to screen the houses from the passers-by; *Canonbury-park* is formed by two narrow crooked streets of ugly houses and cottages, in four rows built in pairs and threes; *Northampton-park* is another crooked street, with coupled houses on each side. Fearing too much air, the most decent of the Canonbury-streets is blocking up at the end by flimsy shops, for which there appears a mania just now; for no sooner are the private houses of one speculator put up and occupied than another thrusts into the gardens of older houses a host of shops. Whence the perpetrators of these abominations sprung with their cramped ideas one cannot imagine, unless from *Whetstone-park*, known about one part of Holborn, and once upon a time illustrated by friend *Punch*, for the enlightenment of the lieges, who could scarcely imagine that such a place existed. All in poor Islington seems left to the compos; the apathy of landowners, sanitary commissions, all tend to their importance: and in spite of Building Acts, King Compo reigns supreme. Excuse my trespassing thus on your useful journal's pages, but unless some power arise to check the rapid growth of these pestiferous polypi, many will soon be at their last gasp, with

SENEX.

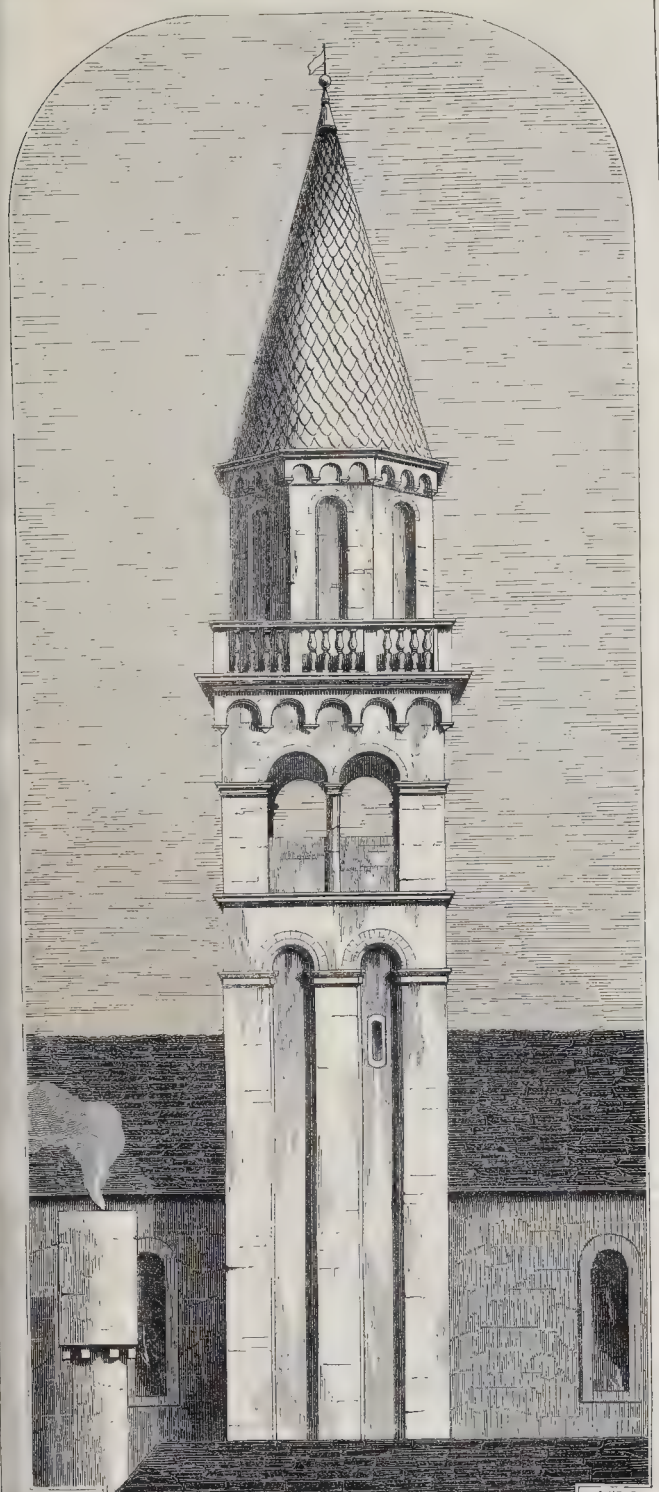
THE ART-UNION OF LONDON EXHIBITION.

THE exhibition of the works of art selected by the prize-holders in the London Art-Union will be opened to the members and their friends in the Suffolk-street Galleries, on Monday next. It will be found to be a very interesting collection: in water-colour drawings, especially, it is very strong.

We add the following list of works purchased to that we have already given:—

The first appearance of Columbus in Spain, 150*l.*—F. Y. Hurlstone. Castle of Chillon, lake of Geneva, Switzerland. 60*l.*—J. Danby. Borrowdale Scenery, 60*l.*—J. Peel. The Prophet Daniel, 60*l.*—J. P. Knight, R.A. On the coast of Sussex, Hastings—and Fairlight Down in the distance, 50*l.*—A. Clint. Dunluce Castle, Ireland—sunset after a storm, 40*l.*—C. Bentley. The Waterside in Borrowdale, 25*l.*—J. Peel. Scotch kale, 21*l.*—H. Emmerson. Eridge rocks, 25*l.*—J. Stark. Sunrise—summer, 25*l.*—G. A. Williams. The return to the farm, 25*l.*—G. A. Williams. Cattle—evening, 25*l.*—H. Desvignes. Loiterers at a Spring, 25*l.*—Bell Smith. The Coliseum, &c. from the top of the Palatine Hill, Rome, 21*l.*—Charles Vacher. The Market-place, Eisenach, 31*l.* 10*s.*—W. Callow. The Weir on the East Llyn, North Devon, 25*l.*—D. H. McKewan. Lane Scene, Isle of Wight, 25*l.*—G. Cole. Don Quixote and Sancho Panza waiting for sunrise, on the Strand at Barcelona, 25*l.*—H. Fitzcook. Thames hay barge beating to windward down the Medway, in Gillingham Reach, 25*l.*—Thos. S. Robins. Asleep and awake, 25*l.*—Reuben Sayers. A well-known spot, North Wales, 23*l.*—J. P. Naftel. The Gipsy's fire, 25*l.*—G. A. Williams. Terrier and rabbit, 25*l.*—G. Armfield. Cattle,—early morning, 25*l.*—J. Tennant. Sunset—winter, 25*l.*—G. A. Williams. Mountain scene, Donegal Bay, Ireland, 25*l.*—C. Bentley. Eton College, 25*l.*—J. Starkey. An English home, 25*l.*—D. Pasmore. Lancaster—evening, 25*l.*—G. Fripp. Grange in Borrowdale, 25*l.*—J. Peel. A rest on the road—summer noon, 25*l.*—S. R. Percy. Ruins of Chepstow Castle, on the Wye, Monmouthshire, 25*l.*—J. C. Ward. The disputed distance—Newcastle pitmen at quoits, 36*l.*—H. P. Parker.

THE INTERNATIONAL EXHIBITION AT NEW YORK.—The American Industrial Exhibition has been formally opened. It contains many interesting objects of art and industrial formation, as to which we may have opportunities hereafter of entering into detail.



SAN MOISE, VENICE.

SAN MOISE, VENICE.

WE add to the series of views of Campanili, in Italy, already given, that of San Moisè, near the Piazza San Marco, from the sketch-book of the same correspondent. It is referred to on more than one occasion in Mr. Ruskin's new volume reviewed in our present number.

THE STRENGTH OF HOLLOW AND CAST-IRON COLUMNS.

IN estimating the strength of cast-iron columns, the safest and the most judicious precaution is to consider them as being strained in the most unfavourable manner; viz. when the straining force acts in the direction of the surface of the columns, and then to calculate the resistance to flexure or bending; for it is manifest, that if a column be made strong enough to resist the straining force when placed under the most unfavourable circumstances, it will be competent to resist that force when more favourably applied.

The reason for considering the subject in this way, arises from the difficulty of entirely preventing settlements, and placing the columns so that the direction of the strain shall coincide with the axis. In that case the resistance would then be the resistance to crushing; but as we have above stated, the safest way of estimating the strength of columns in practical cases, is to ascertain their resistance to flexure, when the direction of the straining force coincides with the surface of the columns.

The formula, which has been investigated by the writers on the strength of materials, for determining the resisting power of a cast-iron column so circumstanced, is

$$\text{Resistance} = \frac{106{\cdot}718\ D^4}{100\ D^2 + 4{\cdot}5\ l^2}.$$

Now this is a formula that is not by any means easily applied, since it involves both the second and the fourth powers of the diameter in inches, and also the second power of the length in feet, the resistance being expressed in tons; but the theorem may be translated into a rule in words, as follows, viz.—

RULE.—*To one hundred times the square of the diameter in inches, add four-and-a-half times the square of the length in feet; then, to the arithmetical complement of the logarithm of the sum, add four times the logarithm of the diameter in inches, and the constant logarithm* 2·028241; *and the sum, rejecting ten from the index, will be the logarithm of the weight in tons that the column will bear with safety.*

By the question, the interior diameter of the hollow column is 16 inches, and the exterior diameter is 19 inches; this gives an inch and a half thickness of metal, and the strength of a hollow column 12 feet in length with the given diameters must be equal to the difference between the strengths of two solid columns of the same length, the one of which is 16 inches diameter, and the other 19 inches; therefore, by the above rule, the strength of the 16 inch column is as below, viz.—

Diameter, 16 in.; its square × 100	= 25600		
Length, 12 ft.; its square × 4·5	= 648		
Sum, or denominator of the fraction	26248, ar. co.	log. 5·580904	Add.
Diameter, 16 in.: its fourth power	16^4	4 × log. 4·816480	
Constant logarithm		log. 2·028241	
Strength of the 16-in. column in tons	266·46	log. 2·425625	

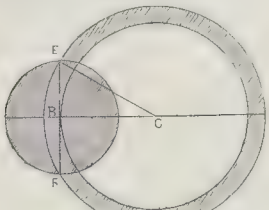
For the strength of the 19-inch column of the same length, the operation is as below; viz.—

Diameter, 19 in.; its square × 100	= 36100		
Length, 12 ft.; its square × 4·5	= 648		
Sum, or denominator of the fraction.....	= 36748, ar. co.	log. 5·434767	Add.
Diameter, 19 in.; its fourth power.....	19^4	4 × log. 5·115016	
Constant logarithm		log. 2·028241	
Strength of the 19-in. column in tons	378·46	log. 2·578024	

Now, the difference of these results will be the strength of the hollow column; therefore we have 378·46—266·46 = 112 tons; but it has been shown by writers on the strength of materials, that the metal, when cast hollow, is stronger than when cast solid, in the proportion of the

interior to the exterior diameter; that is, the strength of the lesser column must be reduced in that proportion, before it is subtracted from the greater; thus we get 19 : 16 :: 266·46 : 224·38 tons. the reduced strength of the lesser column; therefore, by subtraction, it is 378·46 — 224·38 = 154·08 tons, the strength of the hollow column.

We have now to determine the strength of a solid column, containing the same quantity of metal as the hollow one, and for this purpose we must first ascertain the diameter of that column, and this is effected by the following very simple geometrical construction :—



Describe the two concentric circles as in the diagram, the one of 16 inches diameter, and the other of 19 inches; then at the point B, the extremity of the lesser diameter, draw a tangent, which produce both ways, to meet the circumference of the outer circle in E and F; then is EF the diameter required. On the diameter EF describe the circle EAF, and it will contain the same area as the annulus or ring between the circles.

To find the diameter numerically, the process is this :—In the right-angled triangle CBE, the hypothenuse CE is 9½ inches, and the base CB is 8 inches; therefore we have for the square of the diameter, $EF^2 = (9{\cdot}5 + 8)\ (9{\cdot}5 - 8) \times 4 = 105$. Therefore, by the rule for the strength of a solid column,

The diameter square × 100 =	10500	
Length 12 ft. its square × 4·5 =	648	
Sum, or denominator of the fraction	11148, ar.co.log. 5·952804	
Fourth power of the diameter	105⁴	2 × log. 4·042378
Constant logarithm		log. 2 028241
Strength of the solid column	105·54 tons	log. 2 023423
Strength of the hollow column	154·08 tons	
Difference of strength required	48·54 tons.	

Add

T.

TABLE OF THE STRENGTH OF CAST-IRON COLUMNS.

Diameter in inches	LENGTH OF THE COLUMN IN FEET.												
	6 Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	11 Ft.	12 Ft.	13 Ft.	14 Ft.	15 Ft.	16 Ft.	17 Ft.	18 Ft.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
3·0	8 14	7·72	7·28	6 84	6 40	5 85	5·58	5·21	4 85	4·53	4 21	3 93	3 67
3·5	11 55	11·08	10·58	10 08	9 56	9 05	8 55	8 07	7 60	7·16	6 74	6 34	5 97
4·0	15 50	15 01	14 47	13 91	13 33	12 74	12 15	11·57	11 01	10 46	9 93	9 42	8 93
4·5	20 01	19 49	18·92	18·31	17 68	17 03	16 37	15 71	15 05	14 41	13 77	13 16	12 56
5·0	25 05	24·52	23 92	23 28	22 61	21 91	21·19	20 46	19 72	18 99	18 26	17 55	16 85
5·5	30·64	30 09	29 48	28·81	28 10	27 36	26 59	25 80	24·99	24 19	23 38	22 58	21 78
6·0	36 76	36·20	35·57	34 89	34 16	33·37	32 56	31 72	30 86	29 98	29 11	28 22	27 34
6·5	43 42	42 85	42 21	41 51	40 75	39 94	39 09	38 21	37 30	36 37	35 43	34 48	33 52
7·0	50 62	50·04	49 39	48 67	47 89	47 06	46 18	45 27	44 32	43 34	42 34	41·32	40 30
7·5	58 35	57 76	57·10	56 38	55 58	54 73	53 83	52 88	51 89	50 87	49 83	48·76	47 67
8·0	66 61	66 03	65 36	64 62	63 81	62 94	62 02	61·05	60 03	58 97	57 88	56 76	55 63
8·5	75 41	74 82	74 15	73 40	72 58	71·70	70 76	69 76	68 72	67 63	66 50	65 34	64 16
9·0	84 75	84·15	83 47	82 72	81 89	81·00	80 04	79 02	77 95	76 84	75·68	74 48	73 26
9·5	94 61	94·02	93 34	92 57	91 74	90 83	89 86	88 84	87 74	86 60	85 41	84 18	82 92
10·0	105 02	104 42	103 73	102 97	102 12	101 21	100 12	99 18	98 07	96 91	95 69	94·44	93·14
10·5	115·95	115·35	114 66	113 89	113 04	112 12	111·13	110 06	108 94	107 76	106·53	105·24	103·91
11·0	127·42	126 82	126 13	125 35	124 90	123 37	122 37	121·49	120·36	119·16	117 90	116·60	115 24
11·5	139·43	138 82	138·13	137 35	136 49	135 55	134 54	133·46	132 31	131·10	129 83	128 50	127·12
12·0	151 97	151 37	150 66	149 88	149 02	148 08	147 06	145 97	144 81	143·58	142·29	140 95	139 55
12·5	165 04	164 43	163 73	162 95	162 08	161·13	160·11	159 01	157 84	156 60	155 29	153 94	152 52
13·0	178 64	178 03	177·33	176 55	175 68	174 73	173 69	172 59	171 41	170 16	168 84	167 47	166 03
13·5	192 78	192·17	191 47	190 68	189 81	188 85	187 82	186 70	185·52	184·28	182·93	181 54	180 09
14·0	207·45	206 84	206 14	205 35	204 47	203 51	202 47	201·36	200 16	198 89	197 56	196 15	194 69
14·5	222 66	222 05	221 34	220 55	219 67	218 71	217 67	216 54	215 34	214 07	212 72	211 31	209 83
15·0	238 40	237 79	237 08	236 29	235 41	234 44	233 40	232 27	231 06	229 78	228 42	227·00	225·50
15·5	254 65	254·06	253 35	252 56	251 68	250 71	249 65	248 52	247 31	246·02	244·66	243 22	241·72
16·0	271·48	270 87	270 16	269 36	268 46	267 51	266 46	265 32	264 10	262 81	261 44	259 99	258·48
16·5	288·82	288 21	287 50	286 70	285 82	284 84	283 79	282 65	281 42	280 12	278 75	277 30	275·77
17·0	306·70	306 08	305·37	304 57	303 69	302 71	301 65	300 51	299·28	297 98	296 59	295 14	293 60
17·5	325·11	324 49	323·78	322 98	322 09	321·12	320 05	318 91	317·68	316 37	314 98	313 51	311·97
18·0	344·04	343 43	342 72	341 92	341 05	340 05	338 99	337 84	336 60	335 29	333 90	332 42	330·88
18·5	363·52	362·91	362 20	361 40	360·50	359 52	358 46	357 31	356 07	354 75	353 35	351·87	350 32
19·0	383 53	382·92	382·21	381·40	380 42	379·38	378 46	377 31	376 07	374 74	373 34	371·86	370·30
19·5	404·08	403·46	402 75	401 94	401 05	400·07	399 00	397 84	396 60	395 27	393 87	392 38	390 81
20·0	425 13	424 53	423 82	423·02	422 13	421·14	420 07	418·91	417 67	416 34	414 93	413 43	411 86
20·5	446 76	446 14	445 43	444·63	443·73	442 75	441·68	440·51	439 27	437 93	436 52	435·02	433·45
21·0	468 91	468 29	467 58	466 77	465 88	464 80	463 81	462·65	461·40	460 07	458 65	457 15	455·57
21·5	491 58	490 96	490 25	489 45	488 55	487 56	486 49	485·32	484 07	482 73	481 31	479 81	478 22
22·0	514 80	514 18	513 46	512 66	511 76	510 77	509 69	508 53	507·27	505·93	504 51	503 00	501 41
22·5	538 54	537 92	537 21	536 40	535 50	534 51	533 44	532·27	531·01	529·67	528 24	526 73	525 14
23·0	562 82	562 20	561·48	560 68	559 78	558·79	557·71	556 54	555·28	553 94	552 51	551 00	549·40
23·5	587 63	587·01	586·30	585 49	584 59	583 60	582·52	581·35	580·09	578·74	577 31	575·79	574·20
24·0	612 97	612·36	611·64	610·83	609 93	608·94	607·86	606·69	605·43	604·08	602·65	601·13	599 52

To use the Table.—Look for the diameter in inches in the left-hand column, and the length in feet at the top; then opposite the one and under the other is the weight in tons that the column will bear with safety. The table is computed for solid columns; but the difference between the strengths of two solid columns must be the strength of a hollow one, of which the exterior and interior diameters are equal to the given diameter.

GREAT BRITAIN ILLUSTRATED BY THE POPULATION TABLES OF 1851.

THE census of Great Britain was taken on the night of the 31st March, 1851, and by the month of May, 4,300,000 district returns were received at the Central Office; and on the 7th May following, the total population and number of houses were laid before the public.

These returns are now published in full, in two volumes, with one extra containing a copious index. They return the number of males and females, houses occupied, unoccupied, and building; and future publications are to contain the occupations, ages, birthplaces, blind, deaf and dumb, conditions as regards marriage; as well as a return of churches, chapels, schools, and scientific institutions. It is our present object to give some information from these volumes :—

"England is divided into ten topographical divisions, Wales into one, Scotland into two, and the islands in the British seas form another, making a total of fourteen for Great Britain.

"These are divided into districts or unions; these again into sub-districts, and again into parishes, townships, &c. and the hundred in which situated. Against these the area in statute acres is given; houses, inhabited, uninhabited, and building, in 1841-51; population of persons, male and female respectively, with notes explanatory of any change in division or limits of district, or extraordinary reason for increase or decrease."

In the report, which consists of 221 pages, there is much interesting and useful matter, describing the objects, machinery employed, and the results and observations.

THE TOTAL POPULATION IN 1851.

Great Britain and Islands	21,121,96
England	16,921,88
Wales	1,005,72
Scotland	2,888,74
Islands	143,12
Army, Navy, E. I. C. S. Merchant Service, abroad, or on passage out or home, or round coasts	162,49

And the total population of the United Kin dom was, in 1851, 27,724,849, whilst in 18 it was 21,272,187, since which period up 1851, the sum of the emigrants stands 2,685,74 which, if simply added to the population of t United Kingdom, makes the survivors a descendants of the races within the Briti Islands now 30,410,595.

The rate at which the population of Gre Britain increased from 1801 to 1851, is suc that if it continue to prevail uniformly, t population will double in 52·5 years, and England and Wales in 51·0 years.

To many this census may appear likely to somewhat erroneous, as it was taken in t same year as the Great Exhibition was hel but it must be remembered that it was lo before any movement took place in the tran position of the population, and to show this t number of aliens is given. The whole diffe ence between those visiting Great Britain 1850-51 is 42,932; but during the first thr months of the opening of the Exhibitio only 402 more landed than in the correspondi months of 1850, viz. 3,745 and 4,147 respe tively.

In order that the public may form a ju conception of the large number that inhabit o islands, and also as a guide to judge of lar masses when seen, at page 25 a very co prehensive method has been adopted, viz. "I collecting the units into masses, the masses into other masses, and thus ascendin progressively to a unit comprehending a others, and by this means the mind attain an adequate notion of millions of men Thus, from a file of *ten* persons, which the ey takes in at one view, the mind readily conceiv ten such groups or a *hundred*, and again ascen ing to ten hundred or a *thousand*, to t thousand or a *myriad*, to ten myriads or a *hu dred thousand*, and to ten hundred thousand o a *million*, arrives at a conception of the *twenty one millions* of people which Great Britain co tained within its shores on the night of Marc 31, 1851.

Another way of arriving at this conception i by considering the numbers in relation to spac as, 4,840 persons might stand without crowdin on the 4,840 square yards in an acre, 3,097,60 persons would cover a square mile (equal to 64 acres); and the twenty-one millions of peopl in Great Britain, allowing a square yard to eac person, would therefore cover seven squar miles.

An idea can be formed of the mass of peopl congregated in one place at one period fro the numbers that were in the Exhibitio Building at one time. The building occupie 18 acres, and the whole number who visited i between May 1 and October 15 was 6,039,19 and of these about 2,000,000 were individuals and the greatest number that passed through i one day was 109,915, and the largest numbe in it at one time (on the 9th October) wa 93,224: taking this in round numbers a 100,000 a day, it would take 211 days for th whole population of Great Britain to hav passed through.

At page 34, (vol i.) is a chapter on what con stitutes a family, or persons to a house, drawin the difference between the French *étages* an *maisons*, or our "flats" and "houses."

In the present returns "occupier" is sub stituted for "family," thus taking the occupie of a house, or even of a distinct floor or apartmen of a house, who pays rent, as the representa tive and equivalent of a distinct family; an under this definition a son married and living i his father's house forms a part of his father's family. By this arrangement the previous census of 1801 and the present one can be compared.

FAMILIES.

	In Great Britain.		In England and Wales.
1801	2,260,802	.....	1,896,723
1851	4,312,388	.....	3,712,290
Increase, or new lines of families in half-century	2,051,586	.....	1,815,567

The next tables give the average number of persons to a family, persons to a home, and families to a house, in Great Britain, compared with the respective decennial periods from 1801 to 1851.

The following shows the half centuries:—

	Number of persons in each family.	Number of persons in each house.	Number of families to a home.	
1801	4·645	5·614	1 209	In Great Britain.
1851	4·626	5·706	1·182	
1801	4 688	5·643	1 204	In England and Wales.
1851	4·827	5·469	1·133	

Or can be read thus:—In 1851, the proportions of persons to families was 4,825 to 1,000; persons to inhabited houses, 5,706 to 1,000; families to houses, 1,182 to 1,000,—in Great Britain. Under these heads, viz. families, there are many circumstances which appear very conflicting, but it will be remembered by most, that in the two northernmost counties, and more especially in Scotland, "flats" are held and constitute separate tenements, the average number of persons to a house being there 7·8, whilst that of England and Wales is 5·4. This is further illustrated by a comparison between the department of the Seine (Paris) and London. In 1836 there were in the former, 50,467 houses, and 1,106,891 persons, or 22 to a house, or from 4 to 5 families in a house; whilst London, in 1851, contained 2,362,236 persons, 533,580 occupiers in 305,933 houses; about 8 persons to a house, or more exactly, 77 persons, forming 17 families, to 10 houses.

The area in statute acres, and the number of houses inhabited, uninhabited, and building, is given in tabular forms in every possible way, so that information respecting the smallest "tything" can be ascertained.

The following summary of Great Britain, with the metropolis added, will show somewhat the details:—

1851.

	Area in Statute Acres.	Inhabited.	Uninhabited.	Building.	Persons.	Occupiers.	Area in Square Miles.
Great Britain and Islands in British Seas.	57,624,377	3,670,192	166,735	29,194	20,959,477	4,342,226	90,038
England and Wales	37,324,915	3,278,039	153,494	26,671	17,927,609	3,712,290	58,330
Scotland	20,047,463	370,308	12,146	2,420	2,888,742	600,098	31,324
Isles, &c.	252,000	21,845	1,095	203	143,126	29,838	394
London division, including part of Middlesex, Surrey, and Kent, defined in the present London weekly Bills of Mortality	78,029	305,933	16,643	4,815	2,362,236	533,590	122

RATES OF INCREASE OF THE POPULATION IN THE HALF-CENTURY FROM 1801 TO 1851.

	Increase per Cent. in Fifty Years.			Annual Rate of Increase per Cent. in Fifty Years.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
England and Wales	101	105	97	1·41	1·45	1·37
Scotland	79	85	74	1·17	1·24	1·11
[The Isles were not returned in 1801, so as to enable a table to be made for the fifty years.]						
London division	146	151	141	1·81	1·86	1·77*

INCREASE OF HOUSES IN THE INTERVAL OF YEARS 1841-51.

	Inhabited.	Uninhabited	Building.	Average number† of Persons to each Inhabited House.		Average number of Inhabited Houses to every 100 Persons.	
				1841.	1851.	1841.	1851.
England and Wales	234·094	—19·753	—873	5·4	5·5	18·5	18·3
Scotland	No number ascertained correctly in 1841, owing to "flat" being wrongly interpreted.			—	7·8	—	12·8
Isles, &c.	2·655	226	— 17	6·5	6·5	15·5	15·4
London division	43·189	5 318	783	7·4	7·7	13 5	13 0

The sign (—) denotes the decrease in number to the extent expressed by the figures before which it is placed.

Density of Population.

POPULATION AND INHABITED HOUSES IN 1851 TO A SQUARE MILE: THE NUMBER OF ACRES TO EACH PERSON AND EACH INHABITED HOUSE.

	Persons.	Inhabited Houses.	Acres.	
	To a Square Mile.		To a Person.	To an Inhabited House.
England and Wales	307	56	2·1	11·4
	Or 21 acres to every ten persons, and 114 acres to the same number of inhabited houses.			
Scotland	32	13	6·9	54·1
Isles, &c.	361	55	1·77	11·5

THE TOTAL NUMBER OF PUBLIC INSTITUTIONS, AND PERSONS IN THEM.

	Number of Military, Paupers, Prisoners, Lunatics, Patients, and other inmates.‡	Persons and their Families in charge of Institutions and Inmates.	Total in Institutions.	Number of Principal Institutions.
Great Britain and Islands	260,340	35,516	295,856	2,017
England and Wales	240,023	30,983	271,006	1,758
Scotland	18,443	3,752	22,195	248
Isles, &c.	1,874	781	2,655	11

THE PUBLIC INSTITUTIONS ARE DIVIDED THUS:—

	Barracks.‡	Workhouses.	Prisons.	Lunatic Asylums.	Hospitals for Sick.	Asylums and other Charitable Institutions
Great Britain and Islands	174	746	257	149	118	573
England and Wales	152	716	162	127	94	507
Scotland	18	26	92	22	24	66
Isles, &c.	4	4	3	...	...	...

July 8, 1853. OCTAVIUS HANSARD.

* The columns of annual rates may be read thus:—In the London division the average rate of increase of population in each year was 1·81 per cent. or an annual increase of 181 in every 10,000 of the population.

† The column headed "Average," &c. may be read thus:—In England and Wales there were, in 1841, fifty-four persons to every ten inhabited houses; and in 1851 there were fifty-five to every ditto; and 185 inhabited houses in 1841, and 183 in 1851, to every 1,000 of the population.

‡ Officers of the army in barracks are included in this column.

PROVINCIAL NEWS.

Ely.—Plans of a new burial-ground have been approved of by the Board of Health, and it is hoped the scandal of one of the most crowded graveyards will shortly be obviated. At a public meeting of the parishioners of Ely Trinity, held in vestry on 15th ult. the report of the committee was approved of. The report stated that they had ascertained that land at New Barns, containing 6a. 2r. 12p. can be purchased for the sum of 500*l.*; that the Dean and Chapter of Ely have promised a grant-in-aid of 500*l.*; that a mortuary chapel is estimated, in round numbers, at 500*l.*; inclosure, with laying out and planting, 800*l.*; and the cost of entrance-gates, consecration-fees, conveyance and mortgage deeds, at 200*l.* which will make the total outlay required upon the new burial-ground (after taking credit for the grant of the Dean and Chapter of Ely), to amount to 1,500*l.* This would require a rate of about 1s. 6d. but the committee recommend the money to be borrowed under the Church Building Acts, on security of the church rates, to be repaid by annual instalments requiring something less than the amount of a penny rate.

Amcoats (Althorpe).—The new district church of St. Mark here was opened on Tuesday in week before last. It stands on the site of the old one, and is built of ashlar stone with facings, in the early Gothic style of architecture, with lancet windows. It consists of nave and chancel, with aisle in the middle, and no side aisles. At the west end is a tower and spire, and at the end two double light windows one above the other. The new edifice will accommodate nearly 400 persons. The cost of the building is about 1,400*l.* It was erected by Mr. Waring, of Thorne; the wood work by Mr. Wood and Mr. Ledger, of Doncaster. It has been superintended throughout by Mr. Mark Faviell, one of the churchwardens. A school has been erected at a little distance from the church, at the cost of Mr. J. B. Faviell, of Stockeld Park.

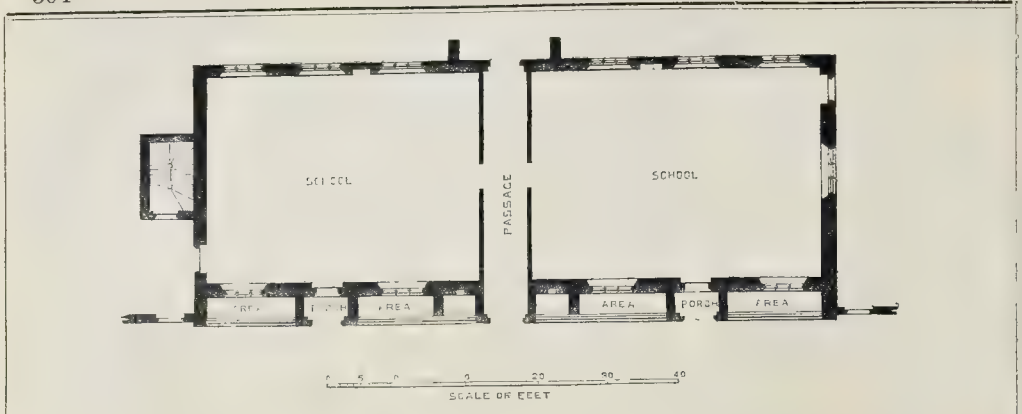
Oxburgh (Norfolk).—A new parochial school house, with a residence attached for the master and mistress, together with the necessary offices, out-buildings, and play-grounds, have recently been erected on a plot of ground close by the old church here. The plan of the main building is cruciform, with entrances at each end, and a bell turret over the east gable. All the external walls are faced with flint, with brick quoins and Caen stone mouldings and dressings. The site was granted by Sir Henry Bedingfield, Bart. of Oxburgh Hall, and the whole of the works have been executed by Mr. Oakes, of Swaffham, builder, from the designs of Mr. Edward Manfred, of London.

Lowestoft.—The foundation-stone of a church for South Lowestoft (St. John's) was laid on Wednesday in last week. The church is designed in the decorated style of Gothic architecture (geometrical period), and will be built of Kent rag-stone and Caen stone. Mr. J. I. Clemence is the architect, and Messrs. Lucas are the contractors. The site is on the south side of the harbour, to the rear of the Royal Hotel. The cost is estimated at 6,500*l.* including schools, which are also to be provided and land, &c. Of this sum, 4,000*l.* have been subscribed, Mr. Peto being a large doner.

Dunstable.—A new Congregational Chapel is about to be erected in Edward-street in this town. The tenders were, Bass 1,115*l.*; Marshall 1,062*l.* Marshall's tender was accepted, and the works have already commenced. The chapel is about 60 ft. by 40 ft. in the Italian style, all open seats and roof, stained and varnished gallery across the building, which is to be of grey bricks and stone (no compo), and calculated to accommodate 600 persons. Mr. Usher, of Bedford, is the architect.

Banbury.—The laying of the foundation-stone of the new town hall here, took place on Friday in last week. The mayor laid the stone in the midst of a numerous concourse of people, and the day was spent as a general holiday throughout the town.

Oxford.—On Wednesday in last week the high sheriff laid the foundation-stone of the new armory, now in progress of erection in front of the county gaol. The county architect, Mr. Buckler, provides the plans, and the builder is



PLAN OF EDGEHILL SCHOOLS.

Mr. Jones. Before the high sheriff left the site, says *Jackson's Journal*, he gave the builder two sovereigns for the entertainment of the workmen, who were unanimously of opinion that this was an improvement on the old plan of burying coins in the stone. The armory, which is to be of stone, is in character with the surrounding buildings, and will consist of a store-room on the ground-floor, and of an armory above, with suitable rooms for the serjeant-major, and a powder magazine at the extremity of the building.

Southampton.—St. Andrew's Presbyterian Church, in the Marlands (or Magdalen's Fields), is in progress: indeed, both exterior and interior are nearly finished. The *Hampshire Advertiser* notices the drawing and chiselling of the various heads, comprising her Majesty and the Prince (east side window), Chalmers and Knox (tower doorway), Wishart and Buchanan (side doorway east), James Stuart and Alexander Henderson (second window east), Rev. James Graham and Major-General David Stuart (third window), Andrew Cant and John Metland (fourth window), Robert Hamilton and William M'Gavin (fifth window), and Robert Boyd and Andrew Fletcher (sixth window). All these Scottish worthies, it adds, are executed by Mr. B. Brain, of Southampton, sculptor.

Micheldean (*Gloucestershire*).—St. Michael's Church, Micheldean, has been partially restored, scraped, cleaned, &c. Open seats of carved oak have been substituted for the old pews, and the church has been new floored and roofed. A new chancel has been erected, and the floor relaid with blue and red metallic tiles. The church is heated by a warming apparatus by Hadens, of Trowbridge; and a hearing apparatus, consisting of gutta-percha tubing, by Heeps and Co. of London, has been attached to the pulpit. The restorations have been effected under the instructions of Mr. Woodyer, of Guildford, the architect of Highnam Church, and the works were undertaken by Messrs. Webb and Mutlow, of Micheldean.

Newcastle (*Staffordshire*).—The Highways Committee of the Local Board of Health report that they have received two tenders for the supply of pipes for the sewerage of the town, and seven tenders for the construction of the works. The amount of the highest tender for pipes was 4,812*l.* 6s. 6d.; the lowest (from Messrs. Gibbs, Canning, and Co. of Tamworth) 2,808*l.* 19s. 6d. The tenders for executing the works varied from 8,426*l.* 7s. 3d. to 2,805*l.* 1s. 6d. The committee recommended the acceptance of Messrs. Gibbs, Canning, and Co.'s tender for pipes; and the tender of Messrs. Wilkinson and Beard, of Grantham, amounting to 4,368*l.* 4s. 3d. for the performance of the works, being convinced that the works could not be adequately performed for the sum mentioned in the lowest tender. It was resolved, *nem. con.* that the tenders recommended by the committee be accepted, and that the clerk return the plans to the engineer of the board, and request him not only to alter the six-inch drains into drains of a larger diameter, as suggested by the board on a former occasion, but also to make such other alterations in the plans as might be in conformity with the suggestions contained in the report of Messrs. Arnott and Page, recently presented to the Secretary of State for the Home Department; Mr. Myer, the mover of the resolution, stating that the report recommended that no main sewers less than 9 inches in diameter should be laid, and that all drains beyond 15 inches in diameter should be made of brick.

Gaydon (*Bishop Itchington*).—On Monday, in last week, Gaydon new chapel and chapel-yard were consecrated by the Bishop of Worcester. The old chapel being small and in bad repair, the present structure was erected last year by Mr. Ballard, of Leamington; Mr. Squirrel, of same place, being the architect. It is of Burton stone, and is calculated to hold about 200 persons. The whole cost has been upwards of 1,000*l.* towards which Mr. Bolton King gave 500*l.*; several subscriptions were contributed, amounting to between 200*l.* and 300*l.* a rate of 1s. in the pound, and the remainder paid by the vicar.

Bilston.—Darlaston parish church having undergone a thorough repair, painting, &c. was reopened on Sunday in last week.

Manchester.—It is said that 10,000*l.* were subscribed, at a private meeting lately, towards rebuilding the Manchester Free Trade Hall.

Newchurch (*Lancashire*).—This rapidly-extending village, in the valley of Rossendale, was lately the scene of rejoicing on occasion of the rearing of a portion of sixty houses about to be erected at the west end of the village by Mr. James Crabtree, on plans furnished by Mr. J. S. Parker, architect.

REMARKS UPON THE STATE OF SCULPTURE IN ENGLAND.

IT has been said that sculpture can scarcely sustain itself in England, that it is an art not suited to the English taste, and which never can flourish here. That it is at a low ebb is very evident from the amount of talent and labour in the market unemployed, or not employed as it ought to be. Much is said about art education, and training men to a high pitch of perfection, so that they may be able to carry out designs properly; but the matter is not considered with that regard to truth and right which should influence our reasonings. What is the use of stocking the market with that which no one will purchase? Where are your buyers of art-labour? Do they exist in sufficient numbers, and do they know how to buy in the best market? In a word, have our aristocracy a sufficient knowledge of art to enable them to judge whether a piece of sculpture is good or bad? I see enough of them to know that very few of them have this knowledge. What can be a better proof of this than the fact that hundreds of figures are yearly imported from the continent, and eagerly bought, which are a disgrace to the maker and the buyer. I have seen sculpture in the house of a nobleman who stands high as a critic in art, in the estimation of himself and some others, which, although I am a poor man, I should be ashamed to own. There is in it neither nature, beauty, nor execution; but the block is visible in every part, yea, even in the very head. I say, then, educate our noblemen; teach them to see that Flaxman's severity is worth their attention, and that French showy deformity should be despised. That Italian and German hardness is not that which Englishmen should seek. Teach them, too, that they have at home men whose ability in producing beautiful pieces of sculpture cannot be equalled in the world. That these men only want encouragement, and not to be crushed by combinations of noblemen, whose object seems to be to get sculpture executed at a low cost by foreigners, so that if they want to sell they may gain by their purchase. All foreigners are very clever in the eyes of English nobles, and therefore anything they do goes down; but let them once be taught the true principles of art, and foreign work will no longer please. What, then, is to be done? Schools should be established for the education of the sons of the aristocracy in the true principles of art, which principles are to be found in Greek art and in the works of Flaxman. When they have formed their taste they will find that there are men to execute designs in England, and that she stands at the head of the world so far as sculpture is concerned.

A WORKING SCULPTOR.

ST. ANN'S SCHOOLS, NEAR LIVERPOOL.

THE above schools are of Woolton stone, and have been erected according to the designs of Mr. W. W. Lloyd, architect, of Liverpool, at a cost of about 1,150*l.* They consist of a girl's school, 40 feet 4 inches by 30 feet, by 15 feet high; infant school, 39 feet 5 inches by 30 feet, by the same height, with a passage to the churchyard between; and a boys' school above, 87 feet 3 inches by 30 feet, by 15 feet high at the springing, and 44 feet in the centre of the roof, which is open to the room; the timber of the same being chamfered, stained, and varnished. The schools have large play-grounds at the ends of the building. There is a louvre in the roof for ventilation, and fresh air is admitted into each school by slides in the window bottoms, which are to regulate the quantity received.

PILE-DRIVING AND STAMPING ENGINES.—Mr. Isham Baggs has patented a modification of his crushing apparatus, combining a steam-engine with suitable pile-driving, hammering, stamping, or crushing machinery. By a peculiar arrangement of steam-valves the force of the blow may, it is said, be regulated to a great nicety.

SCHOOLS AT EDGEHILL, LIVERPOOL.——Mr. W. W. Lloyd, Architect.





SECTION.

SIGHTS.

The Aztec Lilliputians are certainly very curious specimens of arrested development, and should be seen by all who interest themselves in ethnology; still, but for the very remarkable story of the expedition by Huertis, Hammond, and Velasquez to the unknown city Iximaya, "richly monumented and of vast dimensions," with ponderous folding-gates formed of blocks of stone, &c. &c. &c. they would scarcely have attracted the attention which has been given to them, while this is itself so very startling that it must be received with caution. The illustrated broadside put forth by the "proprietors" of these two peculiar little souls, is almost sufficient to convict of charlatanry all concerned in it.

ISLINGTON POOR ESTABLISHMENT COMPETITION.

IT may not be uninteresting to you and the profession to know that Mr. Birch, who gained the first premium, and to whom "instructions have been given to prepare the necessary specifications and details required to execute his design for the Islington Poor Establishment," is the partner of one of the trustees empowered to adjudicate in the competition! Well may your other correspondent stigmatize it as a job. DIDYMUS.

ACTIONS ON BUILDERS' BILLS—EXTRA WORKS.

Holtham v. *Homfray*.—The plaintiff in this case, tried at the Glamorganshire Assizes before Baron Platt, was Mr. Holtham, builder, of Bath, who sought to recover from Mr. J. Homfray, of Penlline Castle, the balance due to him for erecting a house in Church-street, Cardiff. It appears that plans and specifications were prepared by Mr. Strawson, defendant's architect, for building this house, and they were submitted to the plaintiff, who bound himself by a contract to execute the whole of the works for the sum of 257*l*. The question for trial was whether the contract was annulled by the course pursued by defendant and his agent, so as to render it impossible for the plaintiff to build the house for the sum contracted for. The evidence adduced went to prove that Mr. Homfray never gave his sanction to any deviations that would increase the expense of the building, neither had he authorized his surveyor, Mr. Strawson, who was appointed to superintend the work, to do so. A letter was read from defendant to plaintiff in which his fear of extras was expressed. It seems that some few extras were done that are incidental to almost every contract; letters also were shown which stated if any deviations were made they were to be at the responsibility of plaintiff. The value of extras was stated to be 81*l*. 19s. 11d. that of omissions, 79*l*. 10s. leaving a difference of 2*l*. 9s. 11d. The whole of the building was examined, and the value was said to be about 500*l*. The judge, in summing up, said the question before the jury was, whether the contract had been vacated: if in their opinion it had not, the defendant was entitled to their verdict. It seemed to him a strange thing that a man should enter into a contract to do certain works for a certain sum, and that finding he had made a mistake he should turn round and say, "This work costs me more than I anticipated, so you must pay me such a sum." The jury, after a short deliberation, gave a verdict for defendant.

Counsel for plaintiff, Mr. Evans, Q.C. and Mr. Davidson; attorneys, Messrs. Sewell and Co. Bath. Counsel for defendant, Mr. Grove, Q.C. and Mr. Giffard; attorney, Mr. R. W. Williams, Cardiff.

VENTILATION.

IN your volume for last year (p. 798) you had a description of a plan for the ventilation of private dwellings adopted by Mr. Gibbs, of Liverpool. The plan, which is described as very simple and successful, is to have flues in the jambs of the fireplaces, making use of one side for the admission of fresh air and the other for drawing off the vitiated air through the fire. I think there is much merit in the plan, and as I wish to aid the adoption of some such scheme for the ventilation of our dwelling-houses, I am induced to suggest what appears to me to be an improved method for admitting a supply of fresh air, and also a more practical and not less efficient means for expelling the hot and vitiated air. I propose in the same manner as Mr. Gibbs to introduce fresh air at the lower part of the jambs by gratings at the plinth, but instead of being brought into the room in one volume, I would let it in through small perforations in the cornice from (what I will call for convenience) a 4-inch pipe, which I propose to carry from the vertical flue round a considerable part of the room. The pipe could be formed by a continuous line of hollow bricks 5 × 5 × 6 inches, equal to two half-bricks the two flat sides put together, or by bricks 10 × 5 × 3, the ordinary size, dished on one side like what is called a channel brick, so that two hollow sides, when brought together, form a pipe of the desired dimensions. Suppose the latter brick used in the middle of a 15-inch wall, I then propose to use alternately, in the upper course, another brick of the same dimension transversely, the end crossing the pipe being dished so as to make it of one uniform bore, while the other end of the brick (which would be even with interior face of the wall) being dished longitudinally, a portion of the fresh air would thus be admitted into the room through a semicircular opening.

The other brick, which I have before said would be the same as two halves the flat sides put together, I propose to use in a 5 or 10-inch wall. These bricks having a bore of 4 inches from end to end, it is quite clear, when laid continuously with a knee joint to turn an angle, could be made to form a pipe of any given length; and each being perforated with a small hole through the side forming the face of the wall, the fresh air would thus find an ingress into the room through these openings.

For the escape of hot and vitiated air I should provide the same means as for the admission of fresh air, but on the opposite side of the room, the 4-inch pipe being connected with a 5-inch flue to commence a little below the ceiling, and be carried up next to the smoke flue to the top of the chimney. There can be no doubt, I think, that the hot or vitiated air would be sufficiently active in making its escape, when it is considered it would be relieved from the pressure of the external air by a plentiful supply of fresh air from the opposite side of the room. VENT.

THE LABOUR MOVEMENT.

The joiners and carpenters of Leeds have struck work. Their demand is for 1s. a week in addition to a recent advance of same amount, and cessation of labour at four instead of six o'clock on Saturdays. The masters are said to be willing to give the advance in most cases, but refuse to close at four on Saturdays.

The operative masons employed in Glasgow have turned out on strike. At present they are in receipt of 23s. a week, for sixty hours' labour. They demand an increase of 3s. 3d. or payment at the rate of 5½d. an hour.

The cabinetmakers of Hull have commenced a movement, not so much to obtain an advance of wages as a reduction in the hours of labour—sixty hours a week, instead of sixty-three, as heretofore. They proposed to work ten hours and a half a day for the first five days of the week, that they might leave work at two o'clock on a Saturday. Their request has been complied with.

The joiners' strike at Ashton still continues. The men, it is said, have issued a long placard, full of hard words, which the employers have answered in a better spirit. The workmen keep picquets at the railway stations to prevent strangers coming to work.

The Nottingham carpenters and joiners have, very stupidly, refused to "fix" any wood *prepared by steam*, except floor-boards.

The total loss to masters and workpeople in the struggle between the spinners of Stockport and their operatives, just now brought to an end, after eight weeks' dispute, has been estimated by one of the leading manufacturers engaged in it, at from 130,000*l*. to 150,000*l*.; and he says they can scarcely expect to recover from its effects in two years, with a successful trade and full work.

KENSINGTON PIGS AND "POTTERIES."

At the Kensington Petty Sessions, last week, before Messrs. Nixon and Lloyd, Martha Foy, and nine other keepers of pigs, were summoned under the Kensington Improvement Act, charged with keeping pigs, whereby they endangered health and were a public nuisance. The whole of the defendants are residents of that plague-spot familiarly known as the Potteries, and the present inquiry created the greatest interest. The defendants were defended by Mr. Humphries, and the prosecution was left to the conduct of the medical men.

Mr. Godrich said he was a medical man, and as one of the Commissioners under the Kensington Improvement Act, had his attention called to the Potteries. To get rid of or improve this pestilential spot had occupied the attention of the magistrates for years, but nothing effectual had been done in the matter. The magistrates had visited the spot, and come to the determination that nothing but an absolute removal would save the health of the neighbourhood. Dr. Sutherland, from the Board of Health, had, in his report, characterized the Potteries as the greatest plague-spot in England. As a medical man he could state that it was a paramount duty for the magistrates to remove instantly these herds of swine. Nothing could be more miserable or deplorable than the parties keeping these pigs, and it would be a mercy on the part of the defendants to erase the whole of the Potteries.

Mr. Hemmings, surgeon, said he was one of the medical men employed by the authorities to investigate the evils of the Potteries. When he first commenced practice the inhabitants of the Potteries were his patients. He was absolutely compelled to relinquish his visits. The miasma from the swine endangered his health to a serious degree, and it was inconceivable how any one lived in the place. The inhabitants of Notting-hill were nine months in the year breathing the most fetid poison, and to keep their windows open made their abode insufferable. He himself could not go out of his house without feeling the ill effects of the Potteries. The increase of the neighbourhood had made the Potteries worse, as it confined the air. The demise in the Potteries and its neigbourhood was 5 per cent. over any other portion of the metropolis. At the time of the cholera the spot was most fatal. He saw amongst the ten defendants three widows who had lost their husbands, and scarcely one of the defendants but what had lost children by the cholera. Should the epidemic again break out, he did not think a medical man would consider it safe to visit the place. He had signed the certificate for the immediate and entire removal of the swine. During Mr. Hemming's statement the defendants and their friends were with difficulty restrained from using violence. They one and all cautioned Mr. Hemmings not to enter their "Island."

Mr. Broadbridge, surveyor, stated that he officially visited the ten defendants' places, and he found in all they had no less than 179 pigs. The drainage was bad, and few had water. The place wanted entire erasing. No modification would answer. Dung, offal, and putrid food everywhere were present.

The Chairman of the bench gave a still more frightful picture of the place.

Mr. Humphries, at great length, contended that the Act empowered the authorities to remove a nuisance, and if they removed this, they would destroy the defendants' property, which they were not justified in doing, and the bench could not make an entire removal. The neighbourhood came to the pigs, not the pigs to the neighbourhood, and the pigs had a reason to complain of the nuisance. It would be a positive cruelty to drive these poor people away from their livelihood, and it would be an illegal act to do so. The "Islanders" had a prescriptive right to their piggeries, and by his advice they would maintain it. If a pig was a nuisance, why we should have no more pork. It was a nuisance to the pig-dealer to have a respectable neighbourhood, and the best thing the complainants could do would be to remove.

Martha Foy here said her pigsties were as clean as the magistrate's parlour, and that she didn't look like a sick person.

Mr. Nixon said the bench had come to the determination of removing the pigs *instanter*, and if they were not all off the Potteries in two days, the most rigorous measures would be taken.

Notices of Books.

The Illustrated London Architectural, Engineering, and Mechanical Drawing Book. By ROBERT SCOTT BURN. London: Ingram, Cooke, and Co. 1853.

To those beginners who want a cheap collection of examples, with sensible instructions for copying them, we can recommend this volume, which appears to be one of a series of educational works issued by the same publishers.

For the attainment of this kind of drawing the main requisites are attention and perseverance; no great genius is needed, but all who choose to apply themselves may acquire the power of delineating real objects on a flat surface so as to be understood by all persons. The value of this power it is not necessary for us now to point out.

A CURIOUS TABLE.—A sawyer residing at Derby has constructed a table out of small knots and gnarled pieces of wood, which he has saved while sawing timber. It consists of more than a thousand such pieces, curiously inlaid, some of which are from the oak, in Sherwood Forest, under which King John held his first parliament. The table is circular, and is about four feet in diameter: the only tools employed were a pocket-knife, saw, and file.

Miscellanea.

CONWAY CASTLE.—An "explanation" is given by "An Inhabitant" of Conway in the *Times*, which, to a careless eye, bears the look of a refutation of the statement of "A Tourist" in our impression of the 23rd ultimo; whereas not a single *fact* there stated has been controverted,—nothing, in truth, being demolished, but the nine-pins which the "Inhabitant" himself in the first place sets up for the purpose. "A Tourist" brought no charge against the corporation either on the score of "want of care and attention," or of anything else, but this inhabitant does himself bring such a charge by implication against the very corporation he attempts to defend. He states, in respect to one of the facts of "A Tourist," —namely, that "the railway engineer has built a forge against the wall, where it is in a most dilapidated state, blackening the wall with smoke," &c.—a fact which he cannot deny,—that "*the* fact is, that the ground on which *the chimney is built* was sold some time ago by the corporation to the railway, and they have, consequently, lost all control over its disposal." So! the corporation carelessly, or avariciously, sold the right to blacken and destroy the venerable castle wall! they "sold" the property, and "lost" all control over it, without binding the purchasers to respect and preserve this interesting and historical relic! Could none of the money given for license to *injure* the castle have been expended in preserving it from injury? The corporation may well say of "An Inhabitant" Defend us from our defenders! The same absurd and disingenuous mode of dealing with *facts* pervades the whole of this "Inhabitant's" communication. "A Tourist" never said that the ground outside the walls was *not* private property, but does the fact that it *is* so, disprove the *fact* that "manure pits have been made outside the walls, undermining the foundations," or that "stones have been allowed to be taken away" whenever they were wanted? Moreover, does an "Inhabitant's" intimation that the ground *is* private property, *exonerate* even the "inhabitants of Conway" from "reflections" on such undenied proceedings of these very inhabitants? "A Tourist" does not *add* that "a certain sum of money is allowed for the purpose of their repair;" he states that he is *told* so (and still we are told so), and he only asks, "Is it expended?" In fine, the statement of "A Tourist" as to the dilapidation and neglect of Conway Castle just stands as it was; and we would ask "An Inhabitant" whether such neglect and dilapidation ought to be any longer permitted, whoever may be to blame or *not* to blame?

A MIDLAND CRYSTAL PALACE.—A project (originating with Mr. S. Beale, the deputy-chairman of the Midland Railway Company) has been started for erecting in Sutton Coldfield Park, about six miles from Birmingham, a public edifice after the plans of, and for similar purposes to, those of the New Crystal Palace at Sydenham. There is said, moreover, to be every probability of its success. A very numerous and most influential meeting of magistrates, merchants, and manufacturers of the borough, at which the mayor presided, was held at the public office last week, when the proposal of Mr. Beale was fully discussed and unanimously approved. It was understood that if the project was adopted by the corporations of the two towns of Birmingham and Sutton Coldfield, the Midland Railway Company would, in all probability, construct a branch line from their station at Broomford-forge, and thus provide, at nominal rates, an easy and ready access from Birmingham to Sutton. The distance would be less than from the centre of London to Sydenham. It is calculated that a rate of a halfpenny in the pound would pay the outlay, and redeem the building in twenty years; but the general opinion is, that the receipts would be more than sufficient to pay the outlay and management within that period, to say nothing of the excellent moral effect it would in the mean time produce upon the neighbouring population. A deputation, consisting of the mayor, Mr. P. H. Muntz, Mr. B. Baldwin, Mr. Beale, and Mr. H. Smith, was appointed to confer with the inhabitants of Sutton, and to put the matter into such a shape that it might be clearly and definitely placed before the corporations of that town and Birmingham.

INSTITUTION OF MECHANICAL ENGINEERS.—A general meeting of the members was held on Wednesday in last week, at Birmingham, Mr. S. H. Blackwell in the chair. A paper, by Mr. C. W. Siemens, of London, on an improved governor for steam-engines, was read and discussed. A paper, by Mr. J. E. M'Connell, of Wolverton, then described the results of experiments made to test the relative strength of the solid and improved hollow axles, and which gave to the latter an advantage beyond what even the theory in its favour afforded warrant for expecting. The proceedings concluded with a paper by Mr. R. S. Morris, of Warrington, "On an Improved Railway Chair."

THE SCOTTISH ART-UNION.—The nineteenth Annual Meeting of the Royal Association for the Promotion of the Fine Arts in Scotland, was held on Saturday week, in the Music Hall, at Edinburgh, which was filled by a numerous assemblage of ladies and gentleman. The prizes to be distributed among the subscribers, including Mr. Faed's drawings in illustration of "The Cottar's Saturday Night," engravings of which were to be also distributed, were hung behind and in front of the platform. The report stated that the amount of subscriptions received for the current year is 4,160*l.* being an increase over the last year's amount of 683*l.* The committee had purchased, for distribution, fifty paintings, some of a high class, and all of merit, at a cost of 1,302*l.* They had also purchased, for distribution, at a cost of eighty guineas, twenty-five statuettes of Sir Walter Scott in statuary porcelain, by Copeland, after the original marble by Mr. John Steel; and also an intaglio of Dante and Beatrice, by Mr. William Brodie, sculptor. The third prize drawn was "Free Companions," by G. W. Glass, and valued at 150*l.* One valued at 70*l.* was named "A Scriptorium of the 12th century," by E. W. Dallas. Another at 65*l.* was "Tantallan Castle," by E. T. Crawford, R.S.A. Another at 50*l.* was an "Event in the History of Sir William Wallace," by W. B. Johnstone, R.S.A.

TEMPORARY CHURCH AT REDHILL, NEAR REIGATE.—A correspondent informs us that a "temporary church" was opened a few days ago for service at Redhill, containing 550 sittings. The walls are built of hollow bricks, each 18 inches by 12 inches on surface, and 4 inches thick; hollow pier brick, 12 inches thick. Their appearance on both sides is good. Size, 80 feet by 42 feet; formed into nave and side aisles, with chancel, terminated by three sides of an octagon; entrance porch, with two side lobbies; stairs to gallery over porch and lobbies, a robing-room, and a furnace-room, and is provided with hot-water apparatus and pipes, and completed at a cost of 900*l.* It was erected in five weeks. Churches of this description are very desirable in those localities where towns are quickly formed, and where large funds are not easily obtained for the erection of expensive churches; moreover, when the permanent church is erected at Redhill, this "temporary church" will be converted into schools for boys and girls. It was designed and built by Peter Thompson, of the New-road, Regent's-park, who introduced their use some years since at Kentish-town. Such churches are also provided by an annual rent being paid for their use.

HALTING PLACE AT THE BANK.—When next you walk the City round, bend your steps towards Lothbury, and see for yourself the evil and its magnitude to which I now beg to call your attention. From time immemorial, that is, ever since the Bank was finished, a certain halting place, within the iron railing, and immediately opposite St. Margaret's Church, has been a source of considerable annoyance to the passers by. It has lately occurred to a certain commission that a constant supply of water might possibly abate the nuisance, and thereupon the surveyor has taken it in hand and done his part to forward their views. But how? Aye, sir, there's the head and front of the offence. Just look at that slate cistern,—beautiful, is it not? One of Sharp's very best, I believe, perched at one end on a set-off in the wall, and at the other not quite on the tips of the railing. As yet no painter has arrived to clothe the nakedness of the land. Do, sir, raise your voice against this outrage upon all good taste and feeling. Surely sometimes "Vilest things find noblest using," and in this matter some attention might have been paid to the τὸ πρέπον καὶ τὸ καλὸν. We are pleased sometimes to smile at our neighbours abroad for their indifference on these points. A short tour on the continent a week or two back has convinced me that we are wrong in so doing. Look at the stations and their accompaniments on the railway from Heidelberg to Basle (I mention these as a single instance), and compare them with the erections in our chief thoroughfares. On whose side is the laugh? Have we no good taste among us? Is everything to be cut down to the lowest point of utility and economy? At all events, of one thing I am sure, that for the same money we might have had a much better thing opposite that church door. I inclose my card.—R. G. S.

LEEDS TOWN HALL TENDERS.—Having been engaged in taking out the quantities for the above works, will you oblige me by inserting the following correction of one part of Mr. Wilks's statement in the *Builder* of last week, viz. that "The quantities were sold by the architect for me;" the fact being, that the terms of my engagement were arranged with the architect before any tenders were invited, the same being quite irrespective of any payments by the builders; and the small charge for each copy of quantities, in which I have no interest, having been inserted by the architect for the purpose of keeping the tenders select. D. CAMPBELL.

CARDIFF OPERATIVE STONEMASONS' SOCIETY.—This society celebrated its anniversary on Monday in last week, by attending divine service in the Baptist Meeting-house, Hayes, Cardiff. In the afternoon the brethren perambulated the town in procession, preceded by a band of music. The respectable appearance of the body was generally spoken of. In the afternoon they sat down to a substantial dinner in the lodge-room of the Black Lion Inn, which was decorated with laurel and other evergreens. Mr. John Adlam, one of the operatives, in addressing the meeting, alluded to strikes. "We deprecate strikes," he said, "as being injurious to our social and moral welfare. All that we wish is to realize that fair amount of wages which will place ourselves in a position in society which is worthy of us; then we shall be able to foster and cherish our social affections, promote the progress of brotherhood, and serve the interests of our common humanity. To the young men," he added, "I would say, union is strength and knowledge is power. Such is the reasoning of the wisest philosophers. Yes, and ignorance, too, is power. Its desolating blight has destroyed empires, ruined society, and made man a slavish, senseless machine, instead of a 'being of large discourse,' who should look beforehand and after; and it is incumbent on you to look before and after. You ought to leave this world better than you found it. A few more years, and those who are now in the prime of life will have gone the way of all earthly things, and leave their stations for you to fill. Then, let not the 'witch, HOPE, forbid you to be wise.' Learn those truths that exalt humanity. Dig deep after wisdom, as for hidden treasures. But away with vulgar conversation when at work, for that which ennobles and refines."

THE IRON TRADE.—Repudiation and breach of contract are now the order of the day, as a wind up of the late speculative mania, whose unpleasant reminiscences now pervade the law courts. To add to the disorganization of the trade, serious and extensive strikes are taking place in South Wales. The production of pigs, however, is said to be immensely on the increase,—whether to fulfil the old or speculative contracts we cannot say; but assuredly not from the mere demand for it in the subsequent processes of manufacture, for the one is greatly disproportionate to the other; and, moreover, a large quantity of the pigs so produced is mere rubbish. A Birmingham paper, in alluding to this state of things, says,—"It is greatly to be regretted that such large quantities of cinder and rubbishy ore from other districts are now being introduced into the composition of some of the Staffordshire makes. The high character formerly enjoyed by our iron is justly losing ground, and its trustworthiness is rapidly declining, so that unless our first-rate houses will more decidedly discountenance such qualities of pigs, the advantage which has been hitherto enjoyed in the market will soon be lost." This therefore is a new mischief attributable to recent procedure. Prices in consequence of this, and also of the loss of prestige in the quarterly meeting dicta, are so various and discordant, that any special quotation at present would only lead astray. Nevertheless, the acknowledged reductions are already relieving the adversity of the trade, into which high prices were plunging it. In the file trade the manufacturers have come to a unanimous resolution that an advance of wages required for grinding common round and boss work is, under present circumstances, at variance with the true interests of the trade, and should be resisted.

BREACH OF COVENANT TO REPAIR DWELLING.—In the *Nisi Prius* Court lately held at Weymouth before Mr. Justice Talford, Mr. Hallett, builder, Weymouth, brought an action for breach of covenant against Mr. Keeping, a farmer, and others, as landlords of the house in which plaintiff resided. Evidence was adduced to prove that the roofs were in a bad state, ceilings falling down, and rain deluging the house, and injuring plaintiff's property; that after a futile show of repair on the part of defendants, plaintiff had to employ a surveyor and workmen to make the dwelling wind and water tight, and repair ceilings, &c. The jury gave a verdict for plaintiff, damages 46*l.* 14s. 3d. Attorney for plaintiff Mr. John Tizard; for defendants, Mr. F. C. Steggall.

A COMPARISON.—When the Abbey Church at Bath was undergoing repair, some years since, the bishop of the diocese was walking round it with one of the clergy attached to it. While so engaged they were joined by a third "party," who babbled most eloquently upon the various orders of architecture, pointed out this flaw, suggested that improvement, and so talked on most glibly, until, having exhausted all his stock of nothings, he pulled off his hat and walked away, proud to have had a bishop for a listener. "An architect, I presume?" said his lordship to his companion, when the other was out of hearing. "Oh! dear no," answered the other, with perfect coolness; "not an architect, my lord; ONLY AN ALDERMAN!" —*Liverpool Albion.*

MEDALS FOR ART IN PARIS.—The *Literary Gazette* says:—"We mentioned in our last that forty-seven medals, of the value of 1,110*l.* were to be distributed to the authors of the most meritorious works in the Paris Fine Arts Exhibition of the present season. The distribution took place on Tuesday. It was presided over by Prince Napoleon, cousin to the Emperor—a circumstance unimportant in itself, perhaps, but nevertheless an indication of the protection the Government extends to art. In addition to the medallists, ten artists received the cross of the Legion of Honour, and two obtained promotion in that order. Two ladies, Mdlle. Rosa Bonheur and Madame Herbelin, were declared worthy of the cross, but as they could not receive it on account of their sex, they are to have the privilege of having all their future works admitted to future exhibitions without the preliminary approbation of a "Selecting Committee." The Medal of Honour, worth 160*l.* has been awarded to an engraver, M. Henriquet Dupont, for a work exhibited by him. This is a clear proof that engraving is making great progress in France; it used to be, it will be remembered, decidedly inferior to that of England. M. Dupont has declined to accept the value of the medal, and has given half of it to the Distressed Artists' Relief Fund, and half to that raised in entrance-fees from the public, for the purchase of paintings. In order to show the full extent to which the French Government patronizes art, it must be stated that, in addition to the grants of medals and crosses, it causes numerous works to be purchased.

BURNS'S APRON AND MALLET.—These interesting relics of Scotland's greatest bard were on Friday week, on occasion of laying the foundation-stone of Dumfries Workhouse, exposed to the view of thousands of the admirers of the poet. These interesting relics were worn and carried by Mr. James Gilleson, architect, Dumfries, to whom they were kindly granted for the occasion by Mr. Thorburn, of Ryedale, in whose possession they have been for a considerable time. The apron was last worn by the poet on the 14th of April, 1796, at a meeting of the St. Andrew's Lodge, about three months before his death. It is of sheepskin, in a very frail condition, but has at a recent period been lined with a fresh skin, to keep it entire: at the top there is a blue silk fringe, rather faded; the compass and square being also wrought in silk and gold. The mallet is in excellent preservation, the gold upon its circles being quite bright.—*Dumfries Courier.*

EMIGRANTS' COTTAGES AND STORES.—The arrangement, described by us, of sheet-iron cottages, is being worked out in various forms, as in sheet zinc at Edinburgh, and even paper mache! at Staines. In a new modification of the idea now before us, the building is formed of timber, and covered outside with a face of tiles, which give it the aspect of a brick building. The timber is metal tongued, and is so cut and arranged as to be usable for packing goods on the voyage, and readily erected afterwards. The patentee is Mr. Smallwood, of Camden-Town, the inventor and patentee of the Convex and Concave Hollow Tiles. He states that a three-roomed house, 18 feet by 12, will cost 30*l.* and will itself pack into less than 1½ ton. Models of them, we understand, are on view at the Polytechnic Institution, where intending emigrants may judge of them for themselves.

IMPROVEMENTS IN SOFTENING SHEET METAL AND WIRE.—A patent has been granted to Mr. T. F. Cocker, of Sheffield, for improvements in annealing or softening metallic wire and sheets of metal; in reducing, compressing, and drawing metallic wires; and in the manufacture of metallic rolls. Metallic wire and sheets are softened by immersing them in a heated bath of melted lead or other fused metal, either in direct contact, or enclosed in a casing from which the air is excluded. For reducing or drawing metal wires, four cylindrical cast-steel rolls are employed, two vertical and two horizontal, with their peripheries grooved, such grooves meeting in a common centre, through which the metal is drawn. The patent rolls consist of an outer casing of metal, cast upon a wrought-iron mandril or shaft.

LIBRARY OF THE BRITISH MUSEUM.—A return to parliament lately printed shows that the estimated total number of volumes now in the library is 510,110. The number of volumes of each of three sets of the supplementary catalogue (exclusive of three sets of four volumes each, of indexes to long headings) is 305. Each set of 305 volumes contains 220,789 titles, calculated up to 24th June last. These titles are estimated to refer to about 135,000 volumes of printed books.

FIREPROOF CEMENT.—In reply to an inquiry made some time since, we may mention that a patent has been taken out by Mr. William Beales, of Louth, Lincoln, for an improved fire-resistant cement, of which the components are said to be sixty parts by measure, chalk; twenty parts limestone or lime; twenty parts salt; ten parts Bawsey sand; five parts iron filings; and five parts of red or blue clay—properly mixed together, triturated, and calcined.

TUBULAR BRIDGE ACROSS THE NILE.—An iron tubular bridge is being prepared at the manufactory of Messrs. R. Stephenson and Co. for the Nile at Bentra. The trains will pass along the top of the tube. A footpath will be made on each side of the rails. The bridge will be 20 feet above the ordinary level of the water, and the centre portion of it is contrived to swing on a pivot, so that the boat traffic may be secured during the rising of the Nile. The different pieces will only meet at the point of their destination.

METROPOLITAN BENEFIT SOCIETIES' ASYLUM: NEW WEST WING.—On 27th ult. a large number of the friends and supporters of this institution assembled within its grounds, at Ball's-pond-road, for the purpose of witnessing the laying of the first stone of the new west wing by Lord Robert Grosvenor. The erection of this wing has long been in contemplation, but it is only recently that the augmentation of the funds justified the committee in securing the services of Mr. H. S. Ridley, the architect, to carry out the plans, and to enter into a contract for the erection with Mr. J. Edser, of Vauxhall-bridge-road, the builder. In accordance with the main building, this portion will be in the Tudor style of architecture, quite plain. Its length will be about 115 feet, and it will consist of four houses, giving accommodation for sixteen inmates. The cost will be about 1,400*l.*

METROPOLITAN COMMISSION OF SEWERS.—A special court of the Metropolitan Commissioners of Sewers was held on Tuesday at the office in Greek-street; R. Jebb, Esq. in the chair. A communication was read from the authorities of the City of London, agreeing to give 2,000*l.* as their contribution towards the drainage of the site of the new cattle market at Holloway. This offer was agreed to, and the works were ordered to be commenced forthwith.

A BRICK "DIGGIN."—One of the men engaged in the repair of the Exchange in this city, says the *Chester Chronicle*, split a brick on Monday last, which had been used in the erection of the building, and from the centre a bright coin flew out. It proved on examination to be a silver piece of the reign of the first Edward, in good preservation. The exergue bears the following inscription, EDW-R-ANG-I-DVS-HIB, *i.e.* Edward king of England and Lord of Ireland. The obverse contains the words, CIVITAS-LONDON. This coin was probably dropped into a bed of clay in King Edward's time, and lay there until the clay was made into brick when the Exchange was built in 1695 to 1698, a period of more than 400 years.

[ADVERTISEMENT.]

REVOLVING IRON SHUTTERS.

TO THE EDITOR OF THE BUILDER.

SIR,—The letter signed "Patrick Clark," in the *Builder* of the 9th inst. being absolutely untrue in itself and reflecting on the credibility of the statement in our advertisement in your number of the 2nd inst. calls upon us for refutation, which we cannot do more effectually than by requesting you to insert the accompanying letter, this day received from Messrs. Gatty and Howard, the solicitors of Mr. Quincey, which will, we think, put that portion of his letter in its proper light without further comment from us.

As respects the merits of the new patent of Messrs. Patrick and Alexander Clark, we are quite content that the public should form its own estimate of its value by inspection and comparison with our Patent Curvilinear Revolving Iron Shutter, and that it may have less difficulty in doing so, we beg to state that Messrs. Clark and Co.'s New Patent Revolving Iron Shutters are fixed at the National Provincial Assurance Office, No. 127, Cheapside, and those with the Wood covered with Iron at Messrs. Alexander Cowan and Sons, the corner of New Cannon-street, and Queen-street, and also at two of the new shops in Victoria-street, Westminster, which are all that at present have come under our notice.

We are, Sir,
Your obedient servants,
July 28th, 1853. BUNNETT and Co.

COPY.

Angel-court, 28th July, 1853.

DEAR SIR,—By desire of Mr. Quincey we have read Mr. Clark's letter, inserted in the *Builder* of the 9th inst. and at his request we beg to assure you that Mr. Clark's statement of the circumstances under which the injunction was obtained is inaccurate. The injunction was obtained upon a hostile application, supported by affidavits, which are on the files of the Court, and Mr. Clark submitted to the injunction without alleging any such a motive as he now suggests.

We are, dear Sir, yours truly,
GATTY and HOWARD.

Joseph Bunnett, Esq. Deptford.

TENDERS

For boundary wall and iron railing to Hanwell Cemetery. Mr. R. W. Jearrad, architect.

Smith and Appleford	£2,590	0	0
Morris	2,320	0	0
Begby	2,320	0	0
Higgs and Cullingford	1,796	0	0
Cowland	1,775	0	0
Richards and Son	1,719	13	0

For pulling down and rebuilding house, No. 37, Grosvenor-square, for Wright Ingle, esq. Mr. H. Harrison, architect.

Cubitt	£8,645	0	0
Holland	8,357	0	0
Wilkinson	8,351	0	0
Whichelow	8,169	0	0
Kelk	8,028	0	0
Lucas, Brothers	7,670	0	0
Higgs and Cullingford	7,564	0	0

For Westcott Schools. Mr. J. Clarke, architect. Quantities taken out by Mr. Yeldham.

Lucas, Brothers, London	£2,080	0	0
W. Shadgate, Boughton Monchelsea	1,845	0	0
W. Carruthers, Reigate	1,785	0	0
W. Shearburn, Dorking	1,748	0	0
S. and A. Bothwell, Dorking	1,453	0	0

For pulling down and re-building part of 61, Fenchurch-street. Mr. E. Woodthorpe, architect.

Ashby and Sons	£3,826	0	0
Locke and Nesham	3,808	0	0
James Browne	3,786	0	0
Lawrence	3,779	0	0
Ashby and Horner	3,760	0	0
Haynes and Eyre (accepted)	3,349	0	0

For works in Marshall-street and other streets in St. James's, for the Metropolitan Commissioners of Sewers.

Goodison	£8,457	0	0!
Lucas, Brothers	8,275	0	0
Myers	8,170	0	0
Batterbury	7,989	0	0
Rigby	7,328	0	0
Humphreys and Thirst	7,896	0	0
Holland	6,963	0	0!

For two pairs of semi-detached villas, for Mr. B. Baggulley, Richmond-green. Mr. Holmes, architect.

Downs	£8,660	0	0
Sweet	7,990	0	0
Nicholson and Sons (accepted)	7,600	0	0
Titcombe	7,496	14	10

For house at Fulmer, for Rev. H. Way. Mr. F. Hering, architect.

Shoppee	£2,246	10	0
Wilkinson	2,224	0	0
Nicholson and Sons	2,213	0	0

For a new congregational church at New Bexley, near London. Mr. Joseph James, Architect. Quantities supplied by Mr. Charles Poland.

Rowland and Evans, London	£1,129	0	0
Hart, Bexley	1,089	17	9
Pollock and McLennan, London	1,060	0	0
Amos, New Bexley	989	0	0
Young, Crayford	945	0	0

TO CORRESPONDENTS.

"South-Islington District" (the office of the District Surveyor for South-Islington is No. 6, North Side, Islington-green).

Stitching Machines.—Our notice last week has brought us several communications on the subject, for and against, but we are unable now to recur to it. An advertisement in another page shows where the machine may be seen at work.

"J. W." "F. W." (if possible). "T. O. jun." "H. C." (shall appear. Send us plan). "R. B." "J. P." "F. C." (get an answer from one who knows how the *throne* is to be made). "W. H. B." (write particulars of the business alluded to). "R. E." "Martin Mark," "A. A." "T. H. H." "X. Y. Z." "H. D." "C. T. J." "A Mason" (yes; if nature of business be first stated). "C. P." (nothing has been done since that occurrence).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

LOANS.—Persons desirous of obtaining ADVANCES from 50*l.* to 250*l.* upon approved personal security, repayable by easy instalments, extending over a lengthened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES.—Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6*d.* each copy, or 1*s.* per post. Note.—Four new classes are now in course of formation for London, and will immediately commence operations.

NOTICE of DIVIDEND.

BANK of DEPOSIT.

7, St. Martin's-place, Trafalgar-square, London.

The Warrants for the Half-yearly Interest, at the rate of 5 per cent. per annum, on the Investment Stock of this Association, to the 30th June, are ready for delivery, and payable daily between the hours of Eleven and Three o'clock.

Depositors residing at a distance from London, will, on application, have the Dividend Warrants, together with the proper receipts, forwarded for signature; the amount will then be paid on presentation at the Head Offices in London, or transmitted through the Local Agents of the Association, Country Bankers, or in any other way, to suit the convenience of investors, so that the dividends may in all cases be received without difficulty or delay.

July 8, 1853. PETER MORRISON, Managing Director.

Parties desirous of Investing Money, are requested to examine the plan of this Association, by which a high rate of interest may be obtained, combined with perfect security.—Prospectuses and full information may be obtained at the Chief Office, at the Branch Offices and Agencies throughout the Kingdom, or will be sent, post free, on application.

TO HOUSEHOLDERS.

BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company.

Nos. 15 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

SALES BY AUCTION.

TO BUILDERS AND OTHERS.—Important Sale of Ironmongery, Bright and Black Register Stoves, Kitchen Ranges, &c.

MR. BILLINGAY will SELL by AUCTION, at Mr. SITGRAVE'S spacious ROOMS, 28, Leadenhall-street, on MONDAY, the 8th of AUGUST, and following day, an extensive Assortment of IRONMONGERY, comprising a great variety of bright and black register stoves, kitchen ranges, with wrought and cast boilers, patent ditto, patent ovens on the most improved principle, hall-stoves, fire-proof safes, copying presses, locks, hinges, nails, screws, brass foundry goods, &c. &c.—Catalogues may be had of MR. BILLINGAY, Valuer and Auctioneer to the Ironmongery and Metal Trades, 1, Moorgate, London-wall, and place of sale.

TOLLINGTON-PARK and HORNSEY-ROAD.—BUILDING LAND, as laid out for thirteen houses, fronting Tollington-park-road and the new church of St. Mark. TO BE SOLD or LET on LEASE (direct from the Freeholder) for Ninety-nine Years, with immediate possession. Also to be Let on Lease for Ninety-nine Years, direct from the Freeholder, 300 feet of valuable Building Land, fronting the Hornsey-road.—For plans and particulars apply to MR JAMES WAGSTAFF, Highbury-lodge, Islington; or MR. GOUGH, Architect, Tollington-park, or 10, Lancaster-place, Strand.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money and bricks advanced, if required.—For particulars apply to MR. C. HAMBRIDGE, 73, Coleman-street, City.

RECTORY ESTATE, EALING.—Valuable FREEHOLD BUILDING GROUND TO BE LET or SOLD in plots adjoining the old church. The estate abounds in gravel. The roads and drains are being made. Liberal advances will be made as the works progress.—For particulars apply to GEORGE MORGAN, Esq. Architect, 5, Chancery-lane; or to MR. FARQUHARSON, Uxbridge-road, Ealing.

COLNEY-HATCH.—TO BE LET, on Building Leases for long terms, in this greatly improving neighbourhood, at moderate ground-rents, LAND for SITES of NINETY PAIRS of VILLAS, situate within 300 yards of the Colney Hatch and Southgate Stations on the Great Northern Railway. Flint-rate bricks may be had on the ground at 30s. per thousand. The land may be viewed on application at the Railway Hotel, and plans and particulars may be had on application to Messrs. FAGDEN and HODGKINSON, Solicitors, 71, Mark-lane, City.

BUILDING GROUND TO BE LET, near the City, situate in the Queen's-road, Dalston; term, 90 years. Ground rents may be purchased down to a peppercorn.—For terms apply to MR. HUGHES, Solicitor, 25, Old Jewry.—Building Ground also to be Let, situate in the Grove-road, Holloway, and in the high road, Turnham-green.—Apply at the Countinghouse on each estate.

FOREST-HILL and GODALMING.—LAND to LET, at FOREST-HILL, for Building, on Lease for Ninety-nine years, delightfully situate, five minutes' walk from the railway, 120 feet frontage. The whole or any part will be let at 2s. 3d. per foot, or each of the 20 plots. There are six roomed cottages erected adjoining, which let for 24l. and building will commence opposite immediately. To be Let, at 1s. per foot, or 60l. a Plot of Land, five minutes' walk from the railway station, Godalming, commanding the most delightful and magnificent prospect for many miles round. Frontage, 140 feet.—Apply to G. T. C. 19, Edwards-terrace, Peckham.

PADDINGTON.—Valuable LAND TO BE LET on Building Leases for Ninety-five years, near Westbourne terrace and Great Western Station.—Inquire at 27, Westbourne-park, Paddington.

BUILDING LAND TO BE LET, for 99 Years' direct from the Freeholder, for 4-roomed Houses, at 50l. per house ground rent, a short distance from Ring Farm, in the best part of the Wandsworth-road, in lots for twelve houses each. The lessee to build three houses at once, but to have the whole term to cover the remaining ground. Leases to be granted at once, and free from law charges. The roads and drains are made.—Apply, personally, to MR. PARSONS, Seaton Lodge (opposite Devonshire-road, Wandsworth-road).

TO BE LET, a WHARF, with about 35 feet of Water-way, with Warehouse and Dwelling-house, at Clink-street, Banksside.—For particulars, inquire of Messrs. PANSON, 9, Laurence Pountney-lane, City.

TO BUILDERS, RAILWAY CONTRACTORS, AND OTHERS REQUIRING SPACIOUS PREMISES.

TO BE LET, on the original lease from the Duke of Bedford to be Sold, No. 2, BEDFORD-STREET, immediately adjoining the terminus of the North-Western Railway.—Enquire on the Premises; or of JOSEPH IVIMEY, Esq. 30, Southampton-buildings, Chancery-lane.

RARE OPPORTUNITY.—A First-class BRICK and TILE-YARD, now in active and successful operation, only six miles from London, adjoining a railway, and fitted with the best and most recently improved patent machinery. TO BE SOLD, the valuable LEASE of this first-rate concern in the Brick and Tile Trade, consisting of twenty-five acres, with clay of great depth, and in qualities specially applicable to all kinds of brick and tile manufacture.—For particulars (if by letter, prepaid) apply to MR. HENRY CLAYTON, Brick and Tile Machine Manufacturer, Atlas Works, Upper Park-place, Dorset-square, London.

TO BE LET, a large light WORKSHOP or WAREHOUSE, with two good Counting-houses.—Apply to MR. THOS. SAMBROOKE, Arundel wharf, Strand.

NATIONAL FREEHOLD LAND SOCIETY, 14, Moorgate-street, London.—Several lots on the estates at Clapham, Cardiff, Cambridge, Oxford, and Broadstairs, are undisposed of, and may be taken immediately, on payment of the price of the lots, or by purchasing the right to borrow. A plan of either of the estates, with the conditions of sale, may be had on application.

W. E. WHITTINGHAM, Secretary.

Office hours, Nine to Five daily, and on Fridays from Nine to Eight.—July, 1853.

THE NATIONAL PROVIDENT FREEHOLD LAND SOCIETY. Offices, 479, New Oxford-street, London.

Shares, 50l. each. Entrance-fee, 1s. 6d.; and Monthly payments, 2s. per share. Interest on completed shares and payments in advance. No back or extra payments. No fines on unadvanced shares. Prospectus and rules gratis.

PETER WILLIAM CLAYDEN, Secretary.
Agents Wanted.

Yorkshire Coal-field.—Railway and Canal Transit.—Important to Iron-masters, Brass and Iron Founders, Steel-refiners, Railway Rail and Wheel Makers, and other Manufacturers.

TO BE SOLD, by PRIVATE CONTRACT, or LET on 800 years' building leases, in one or more lots, 6,801 square yards of FREEHOLD LAND, adjoining and having an extensive frontage to the Masbrough Station (the junction for Sheffield) of the Midland Railway, a great part being on a level with the railway. The land is within a few yards of excellent coal-pits, and its site is unequalled for any purpose requiring good coal, and the means of railway transit. Water-carriage, for heavy goods, open to the sea, within a few hundred yards.—For plans and particulars, apply to MR. BADGER, Solicitor and Notary, High-street, Rotherham, Yorkshire.

STANFORD and MERTON-ROAD.—VICTORIA-ROAD, KENSINGTON.—TO CAPITALISTS and OTHERS.—This PROPERTY TO BE SOLD, bringing in 1,090l. per annum, or thereabouts. Some of the houses are semi detached, and some in a terrace of six and four houses, on a gravelly soil, and will let from 45l. to 73l. per annum. There are omnibuses to and from the City; it is five minutes' walk from Kensington-gardens, and close by the grounds of the new National Gallery.

For full particulars, apply at Mr. STREDDER'S Office, on the Estate.

N.B.—None but principals or their solicitors need apply.

VERY EXTENSIVE and IMPORTANT FREEHOLD PREMISES, comprising numerous Buildings, and about Six Acres of Land, in the city of Bristol.—TO BE SOLD, either together or separately, the ST. PHILIP'S IRON-WORKS, situated close to the Great Western, Midland, and Exeter Railways, having a water frontage of 1,150 feet. The buildings are on a large scale, and were used by the late owners for engineering purposes; have been recently erected in a superior manner, of the best materials, and may be easily converted into several and separate suitable premises for a soap-house, chemical works, brewery, tan-yard, cotton, flax, saw, or grist-mill, or any manufactory requiring extent, security to coal, and valuable water frontage.—The portion constituting the forges and smithies of the long-established firm of Acramans and Co. cannot be improved on; it has a water-dock within the premises, and coal can be obtained within a few hundred yards, altogether presenting a singularly advantageous opportunity to re-establish the lucrative business carried on by the late proprietors in this old-established concern.—For plans and particulars, apply to Messrs OSBORNE, WARD, and Co. Solicitors, Bristol; or to EDWIN NAISH, Auctioneer, 7, North-street, Bristol.

BRICKS.—In the new Brickfield, Parkville-grove-road, Mile-end, near Victoria-park, are good sound, well-burnt STOCK BRICKS, full size, at 32s. per 1,000.—Apply to Mr. MUDDLE, Foreman, on the Works, or 5, Frederick's-place, Mile-end.

FARNHAM, SURREY.—LAND, eligibly situated near Waverley, and within two miles of the railway station, FOR SALE, at a price under 20l. per acre. Also, a few acres near the railway station.—Apply, for particulars, to Messrs. HAMMACK and LAMBERT, 59, Bishopsgate-street Within.

ADVANCES made on LAND at Bow, Grove-road, Victoria-park, and Hackney, for third and fourth rate houses. Long terms and rents moderate. The proximity of the railway station in the former case renders this a most desirable property.—Apply to Messrs. HAMMACK and LAMBERT, 59, Bishopsgate street.

WITHIN HALF a MILE of MILE-END TURNPIKE—TWENTY ACRES of LAND TO BE LET, in plots for fourth-rate houses, at moderate rents and for a long term. An enormous demand exists in this locality for this class of house, and the present opportunity should be embraced, as little unsevered ground remains in this vicinity.—For terms, &c. apply to Messrs. HAMMACK and LAMBERT, 59, Bishopsgate-street Within.

SUSSEX.—To Auctioneers, Cabinet Makers, &c.—An excellent opportunity now offers for any one to embark in the above business in a market town in the western part of Sussex, not far from a railway station. The business has been carried on for nearly half a century, and is now in a very flourishing condition, having been recently much improved and more widely extended by the present proprietor, who is leaving in consequence of being about to engage in a more extensive business elsewhere. Unexceptionable references will be given and required. The valuation of stock in trade, &c. would probably amount to 600l.—Apply for particulars, by letter prepaid, to Messrs. Nalsted and Sons, Ironmongers, Chichester; or MR. R. MARVIN, Auctioneer and Estate Agent, Queen-street, Portsea, and Grove-road, Southsea.

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TO BE DISPOSED OF, an old-established BUSINESS, within two miles of the City.—Apply to C. C. 9, Norfolk-place, Lower-road, Islington.

WANTED, a SECOND-HAND SINGLE-PURCHASE BUILDER'S CRAB, with Sett to throw out of gear.—Particulars to be sent to Mr. G. P. DOWNING, Lowndes-terrace, Knightsbridge.

WANTED, an ENGINE.—High-pressure Beam Engine, of from 30 to 40 horse power, in good condition.—Address, P. P. to W. A. care of Messrs. W. Everett and Son, 17, Royal Exchange, London.

CLERK of WORKS WANTED.—One who is thoroughly conversant with Brick and Tubular Drainage and Road-making, and can be well recommended.—Applications, by letter only, post-paid, stating terms, and all other particulars, to be addressed, SURVEYOR, National Freehold Land Society, 14, Moorgate-street, London.

ENGINEERING.—Wanted an experienced DRAUGHTSMAN.—Adress, post-paid, stating age, references, and salary, to C. B. Post Office, 49, Strand.

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AN Architect is in immediate want of an efficient CLERK of WORKS to superintend the erection of a Church in the provinces. None need apply unless qualified by previous engagements to undertake the superintendence of work of this character.—Address, X. Office of "The Builder," 1, York-street, Covent-garden, stating qualifications and salary required.

TO ARCHITECTURAL DRAUGHTSMEN

AN Architect is in want of an ASSISTANT, experienced in the preparation of competition drawings.—Address, M. A. Office of "The Builder," 1, York-street, Covent garden.

BUILDER'S FOREMAN.—WANTED, out of London, an active man, to SUPERINTEND the WORKSHOPS and YARDS of a first-rate establishment. He must have been accustomed to machinery, and possess a thorough knowledge of carpentry and joiner's work, and of good character; none else need apply.—Address, H. and C. Office of "The Builder," 1, York-street, Covent-garden, stating age, experience, and remuneration required.

A CLERK of WORKS WANTED in the Country, to SUPERINTEND the ERECTION of a PRIVATE RESIDENCE.—None need apply whose character and capability will not bear the strictest inquiry.—Address, post-paid, stating age, where and how last engaged, and rate of wages expected, to A. A. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS' CLERKS.

WANTED, by a Builder, a respectable Young Man as CLERK, who understands the general routine of the office. None need apply but those who have filled a similar situation for five years.—Apply by letter only to S. S. Office of "The Builder," 1, York-street, Covent-garden, stating age, salary required, and where last engaged.

TO PARENTS AND GUARDIANS.

A PUPIL.—An Architect and Surveyor's Firm, in the City, of good town and country practice, have a VACANCY in their Office for a PUPIL, who would possess every advantage in practically learning the profession. Premium very moderate. N.B. Also an IMPROVER wanted.—Address, H. C. 3, Winchester-buildings, City.

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A BUILDER, at the West-End, has an excellent opening for an IN-DOOR or OUT-DOOR APPRENTICE, who will be treated as one of the family; he must be steady, persevering, and a good scholar. Premium required.—Address, J. J. C. 36, Berkeley-street, Hyde Park-square.

WANTED immediately, by an Architect in the City, an ASSISTANT, who must be a competent Draughtsman.—Address, stating age, former engagements, and amount of salary required, A. Z. care of Messrs. Dawson and Sons, Abchurch-yard, City.

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WANTED, in a Machine Factory, a Person between 30 and 40 years of age, who has been brought up in the trade, and perfectly understands the conversion of timber to the best advantage. He must be al o competent to manage sawframes and tables, keep his accounts, and be a sufficiently experienced judge of timber to be able to purchase occasionally.—Apply (producing testimonials) to B. E. and A. Kate's Grove Ironworks, Reading.

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WISHES an Engagement, a Person who can execute (in a more than mediocre degree) Chromatic Decorations in the Classical, Mediæval, and Modern Styles. Permanency and advancement the greater objects.—Apply to W. H. T. No. 4, Wingrove Place, St. John-street-road, Clerkenwell, London.

WANTED, a SITUATION as FOREMAN of MASONS, or GENERAL FOREMAN; has been upwards of six years in his last employ, and can be well recommended.—Direct to M. N. Office of "The Builder," 1, York-street, Covent-garden.

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WANTED, by a Young Man, a SITUATION as an IMPROVER in the above line. Wages not so much a consideration as constant employment and good practice.—Address, R. JONES, 10, Union place, Stepney-green.

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WANTED, by a young Man, a SITUATION as TRAVELLER or BOOKKEEPER, having previously filled similar situations with a Lime and Cement Merchant.—Address, A. B. 4, Clarendon-cottages, Fairfield-road, Bow.

WANTED, a SITUATION in a Builder's, Surveyor's, or Auctioneer's Office, as CLERK, Timekeeper, Collector, or to take the Management of a Business. The Advertiser, aged 30, having been constantly engaged for the last ten years in the building business, is perfectly conversant with squaring dimensions, measuring up work, making out contracts, and superintending repairs.—Address, A. G. Office of "The Builder," 1, York-street, Covent-garden.

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WANTED, by a steady, respectable Young Man, of industrious habits, a permanent SITUATION as Painter, Glazier, &c.—Address, stating wages given, to G. W. R. 30, Little Russell-street, Museum-street.

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TO ARCHITECTS AND BUILDERS.

WANTED, by a Practical Man, a SITUATION as CLERK of WORKS, or General or Shop Foreman. Unexceptionable references as to character and ability.—Address, M. P. 19, Stanley-street, Walton-street, Brompton.

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WANTED, by a Person fully competent, a SITUATION to make DRAWINGS and SUPERINTEND ERECTIONS, ALTERATIONS, &c.; the Advertiser having a thorough practical and theoretical knowledge of farm and other buildings, making specifications, estimates, &c.; having been engaged in several architects' and builders' offices for several years, by whom he can be highly recommended for honesty, ability, and industry, and also would have no objection to otherwise making himself generally useful.—Address, Y. Z. at Mr. Tibnam's, Printer, Shrewsbury.

TO ARCHITECTS.

A GOOD and EXPEDITIOUS DRAUGHTSMAN, who is perfectly capable of getting up working and finished Drawings, Perspectives, &c.; is a good Colourist, and understands the routine of an office, is desirous of meeting with an ENGAGEMENT. Salary moderate.—Address, C. N. 18, Lavington-grove, Caledonian-road.

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THE Advertiser, a Painter, Grainer, Writer, and Paperhanger, is desirous of a RE-ENGAGEMENT as FOREMAN, or as a Workman in the above branches. Satisfactory references to last employer and others as to character and ability.—Apply, prepaid, to W. A. 7, Normand-place, Brixton-road.

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A THOROUGHLY competent, neat, and expeditious Draughtsman desires a RE-ENGAGEMENT. Testimonials to both architects and surveyors of the highest standing may be had, and specimens seen, by a letter to X. X. Office of "The Builder," 1, York-street, Covent-garden.

TO BUILDERS AND DECORATORS.

A COMPETENT GRAINER and Marbeller is desirous of constant EMPLOYMENT. No objection to fill up his time as plain work.—Address, A. B. 4, Johnson-street, Clarendon-square, Somers-town, London.

A CLERK of WORKS, of many years' experience, just finishing some large works, is OPEN to a FRESH ENGAGEMENT. The advertiser has a thorough practical knowledge of Gothic and Italian detail, understands measuring work and taking out quantities, is capable of making detail and working drawings, has had the management and unassisted arrangement of some elaborate and extensive works, and whose character for industry, sobriety, and integrity will bear the strictest investigation. Satisfactory testimonials can be produced, and reference given to last and former employers.—Address, post paid, to A. B. Mr. Green's, 45, Chichester-place, King's-cross, London.

TO CARPENTERS AND BUILDERS.

THE Parents of a Youth of respectability and well-educated, are desirous of APPRENTICING him to the above business, where he will be treated as one of the family. Town or country not objected to.—Address, with full particulars, to Mr. MONK, Heath street, Barking.

TO BUILDERS

A FIRST-CLASS FOREMAN of JOINERS is in want of an ENGAGEMENT, either as foreman in the shop, to take charge of the erection of buildings, or to take the superintendence of buildings on a nobleman or gentleman's estate, having been accustomed to either.—Address to X. Z. 87, Chiswell-street, Finsbury-square, London.

A SCULPTOR, who has had five years' experience in ecclesiastical work, is open to an ENGAGEMENT; has had considerable practice in modelling. Good references can be given.—Address, A. 77, Great George-street, Liverpool.

TO PAINTERS, BUILDERS, &c.

A YOUNG MAN, who is a first-rate grainer, writer, &c. wishes for a permanent ENGAGEMENT; would fill up his time at painting, if required. No objection to town or country.—Address, T. M. Office of "The Builder, 1, York-street, Covent-garden.

TO BUILDERS WANTING CARPENTERS TO GO INTO THE COUNTRY.

THE Advertiser, a proficient Carpenter and Joiner, aged 38, without encumbrance, is desirous of a COUNTRY JOB, on the usual terms. References given if required.—Address, P. G. 36, Frederick-place, Hampstead-road.

TO CIVIL ENGINEERS AND OTHERS.

A YOUNG MAN, aged 21, is desirous of obtaining a SITUATION. He knows mathematics perfectly, both pure and applied, the theory of levelling and surveying, plotting, ranging, calculation of earthwork for railways, &c.; is a good architectural and perspective draughtsman, and knows the French and Italian languages.—Address, X. Y. 21, Gerrard-street, Soho.

TO MASTER-PAINTERS AND BUILDERS.

A YOUNG MAN, 23 years of age, who has been in the business four years as a Painter and Glazier, wishes to place himself for two years as a good Painter and Glazier, and the son of a Painter; is a very respectable and steady youth. Wages not so much an object as a good shop, where he can improve himself.—Direct S. PRAYER, Painter, 17, Broadway, Westminster.

TO ARCHITECTS.

THE Advertiser, who is an excellent Draughtsman, and has a thorough knowledge of detail and construction, is desirous of an ENGAGEMENT in an Architect's Office.—Address G. G. 1, Brunswick-place, Brompton.

TO PAINTERS, BUILDERS, HOUSE DECORATORS, &c.

A YOUNG MAN (age 30), who is capable of graining, paperhanging, painting, and a little gilding, and has had the management of work, wishes for an ENGAGEMENT.—Direct, J. M. Office of "The Builder," 1, York-street, Covent-garden.

AS CLERK or SUPERINTENDENT of WORKS. The Advertiser, having had experience in superintending extensive building and engineering works, and fully competent to make plans, elevations, and sections, and working drawings, specifications, estimating, measuring, and valuing all kinds of architectural works, is desirous of obtaining a similar ENGAGEMENT forthwith.—Address, A. B. at Mr. SCADDING'S, 21, Mag'al n-street, Exet r, Devon.

TO NOBLEMEN AND GENTLEMEN.

A RESPECTABLE MAN, competent to design and superintend the erection of Villas, Farm-houses, and Buildings, Cottages, &c. and to measure and value Artificers' Work, is in want of a SITUATION. The Advertiser can produce most satisfactory testimonials from his previous employers.—Address, pre-pa'd, to J. L. 3, Paradise-terrace, Liverpool-road, Islington.

PARTNER WANTED.—The Advertiser, who has an extensive connection in a lucrative business, wishes for a PARTNER, who can command about 300l. and would devote part of his time to the business.—Address to A. B. C. 7, Brill-place, Somer's-town.

TO BUILDERS.

WANTED, a PARTNER, to join the Advertiser in a well-established Building and General Trade in London, the senior partner in which has just retired on account of growing infirmities.—Particulars can be ascertained of Mr. JAQUET, 31, Clare court, Drury-lane.

REPERTOIRE of MEDIEVAL ART, 59, Wigmore-street, Cavendish-square.—Mr. BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Metal work, chalice- and patens, offertory, bassons, candlesticks, coronas, branches, gas fittings, crosses, lamps, monumental brasses, hinges, locks, handles, fire-dogs, lecterns, velvets, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver llama, painted candles, picture frames, tripticles, banners, &c. &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kin ds of embroidery supplied and arranged.

GREAT FIRES in MARK-LANE and SOUTHAMPTON-STREET, STRAND.—In these destructive Fires Deeds and Documents of immense value have been preserved uninjured by "LEADBEATER'S PATENT FIRE-PROOF SAFES." LEADBEATER'S STRONG WROUGHT-IRON FIRE-PROOF DOOR SAFES, CHESTS, and DOORS, for Strong Rooms, Plate Closets, and Party-walls, &c. of best make, and possessing all the most recent improvements, are the best depositories for property of every description in the world; extra-strong Cash and Deed Boxes, with Detector Locks; Patent Detector Locks and Latches for all purposes.

A large assortment on hand at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE-STREET, CITY of LONDON, where Prospectuses may be had.

LEADBEATER, many years Manufacturer for Chubb.

MORTON'S FIREPROOF SELF-SUPPORTING IRON ROOFS (requiring no Framing, and only one-tenth the weight of slates); CORRUGATED IRON BUILDINGS (fireproof); Flat Roofs; Verandah and Passage Roofs; and Galvanized Iron Work of all kinds.

FRANCIS MORTON and CO. beg to draw attention to the advantages of their Corrugated and Galvanized IRON ROOFS, Fireproof IRON BUILDINGS for Warehouses, Houses, Lodges, Moveable Offices &c.

Also, their IRON HOUSES and STORES, for Export and for Emigrants; for all kinds of Manufactories, Boiler-houses, Sheds, Covered-ways, Drying-rooms, and for Farm-buildings, Piggeries, Sheep-pens, &c. Where land or premises are held on short tenure, these Roofs or Buildings can be taken down without the least injury and re-fixed, or the material used in other erections.

Corrugated Iron Plates, prepared and fitted ready for fixing galvanized or black.

Corrugated Iron Houses, for Emigrants, from 30l. each upwards. Corrugated Iron Deck Houses, for Ships, prepared so as to be removeable, if required.

Galvanized Eaves Gutters, Water-pipes, Ridge Caps, Nails, Screws, Bolts, Wire and Wirework of all descriptions; Fencing Wire.

Galvanized Sheep Netting, 36 inches wide, of great strength, 1s. 9d. per yard, or with Iron Standards complete, 1s. 6d. per yard. This fence can be erected or removed in a few hours by ordinary farm labourers.

Galvanized Poultry Netting, and cheap Wire Netting, of all kinds.

Galvanized Iron Water and Mill Buckets.

Patent Asphalted Roofing Felt, 1d. per square foot, in rolls 30 to 33 yards long.

Dry Hair Felt, in rolls 20 yards long, the only perfect non-conductor of heat for lining iron buildings, covering boilers, steam-pipes, &c. saving 20 per cent. of fuel.

Copper-rope Lightning Conductors, Sash-cords, &c.

Patent Wire Strand Fencing, much stronger than iron hurdles, and cheaper.

Carriage Entrance-gates and Pillars in cast and wrought iron. Hand-gates, &c. of various designs.

Wrought-iron Hurdles, Field-gates, &c.

GALVANIZED AND CORRUGATED IRON WORKS.

Offices: 10, North John-street, Liverpool; 18, St. Mary's-gate, Manchester.

Sole Agents for THE PATENT SMOKELESS FURNACE, saving from 15 to 20 per cent. of fuel. Licences granted to Engineers and others to fit up the apparatus, and for the Patent Fire Annihilator Machines. All applications to be addressed to the Head Office, 10, North John-street, Liverpool.

FIRE-PROOF CONSTRUCTION.—FOX and BARRETT'S PATENT.

The economy of this system, in which joists of wrought or rolled iron are now almost exclusively used in the construction of floors and roofs, is still maintained, notwithstanding the recent advance in the price of iron. Additional rolls have been prepared, which, by varying the section, admit of the economical application of the joists to all bearings, and to every description of building.

The subjoined classification of buildings erected upon this principle will show the extent to which it has been applied:—

Private mansions, dwelling-houses, offices, and chambers.
Dwellings for the working classes.
Public hospitals.
Lunatic asylums and workhouses.
Colleges, training institutions, and schools.
Hotels, banks, insurance offices.
Public exhibition-rooms, bazaars, &c.
Buildings for publication.
Public baths and wash-houses.
Mills, warehouses, and grain-lofts.

And besides the numerous works completed, the following are some of the buildings of a Public character now in course of erection:—

King's College Hospital.
Guy's Hospital (Extensions).
St. Mark's Hospital for Fistula.
Metropolitan Convalescent Asylum.
Gloucester and Bristol Diocesan Training Institution.
The Railway Hotel, Carlisle.
The Record Buildings at Aberdeen and at Birmingham.
The Bloomsbury Baths and Washhouses.
The Leeds and Yorkshire Assurance Buildings.
Balliol College, Oxford (Extensions).
Trinity Hall, Cambridge.
The New Offices of the London and Brighton Railway Company.

For buildings of the description and magnitude of many of these the system possesses very great advantages; and it is of equal importance in the construction of dwelling-houses, offices, &c.; the cost, which will necessarily vary in different localities, not exceeding in the average that of substantial and well-constructed timber floors.

Further information may be obtained on application to the Proprietor of the patent,—Mr BARRETT, 12, York-buildings, Adelphi.

DESTRUCTION of the PATENT GUTTA PERCHA WORKS by FIRE.—The efficiency of Messrs. MILNER and SON'S Safes is completely established by the facts communicated in the following letter lately received by those gentlemen:—

18, Wharf-road, City-road, London, June 8, 1853.

MESSRS. THOMAS MILNER AND SON, 47A, MOORGATE-STREET.

SIRS,—We consider it only our duty to send you a line, informing you of the entire preservation of all books and papers contained in the large safe you recently supplied us with, although exposed during Sunday last to a fire which has destroyed the larger part of our works; this is the more remarkable, as the intense heat has in many parts melted the outside of the safe.

We are of opinion that so successful a vindication of the merits of your invention cannot on public grounds be too generally known, and we therefore leave you at liberty to use this letter in any way you may wish.

We are, Sirs, your obedient servants,
THE GUTTA PERCHA COMPANY, Henry Ford Barclay.

LOSH, WILSON, and BELL, NEWCASTLE-ON-TYNE, Manufacturers of Bar Iron, Railway Bars, Forge and Engine Work, Cast-iron Goods, and STEWART'S PATENT CAST-IRON GAS and WATER PIPES. Office, No. 7, Sise-lane, London.

COLLINGE'S PATENT HINGES.—Sole Manufacturers, CHARLES COLLINGE and CO. 63 and 65, Bridge-road, Lambeth, where a great variety are always on view for church, park, railroad, coachhouse, and other gates and doors of large and small dimensions, a gate of a ton weight moving with these hinges as easily as a wicket. Ornamental hinges, adapted for drawing-rooms, &c.; doors fitted with them may be removed and replaced in an instant. Rising and double-acting spring hinges, and superior gate fastenings, at moderate prices. None genuine unless marked "Charles Collinge, Patent, Lambeth." Plain and ornamental cast and wrought iron-work, for building and other purposes. Engines, machinery, patent axle-trees, sugar-mills, &c.

SAW-MILL MANUFACTORY, Chelsea, London.—WORSSAM and CO. invite the attention of all concerned in sawing, planing, and moulding wood to the simplicity and compactness of their machines over those now in use, which are both cumbersome and expensive. Drawings and prices sent on application. Estimates given for complete saw-mills for exportation or otherwise.

BUILDERS, Contractors, Carpenters, and others are invited to inspect the stock of NAILS, TOOLS, BRASS, AND GENERAL IRONMONGERY, at PEELL and STEDALL'S, Nos. 5 and 6, BROAD-STREET-BUILDINGS, BLOOMSBURY. The prices will be found the lowest, and the stock one of the largest in the trade. A price list sent on application.

AUSTIN'S IMPERIAL PATENT SASH and BLIND LINE, can be obtained of all ROPEMAKERS, IRONMONGERS, FACTORS, AND WHOLESALE HOUSES IN TOWN OR COUNTRY.

HIGGS and GEORGE, Wholesale and Export Ironmongers, Agents for the sale of the Patent Wrought Nails, Cannon-street and College-hill, London. (Removed from 179, Borough.) HIGGS and GEORGE beg to acquaint their friends and the public that they have removed to the above central and extensive premises, where they keep an ample stock of Nails, general Ironmongery, and the Patent Wrought Nails, for the supply both of the home and export demand.

TO BUILDERS AND OTHERS.

MR. WILLIAM EASSIE, Contractor, Gloucester, being largely engaged in converting Timber for Railways, has fitted up Machinery for the preparation of every article of Joiners' Work necessary in the construction of first-class Houses, Shops, Cottages, Orchard and Green Houses, at prices well worth the attention of the Trade. A large stock of Doors, Windows, Architraves, Mouldings, Skirting, and Flooring always on hand, or may be made to any size or pattern on the shortest notice. Also, Scantling cut to any dimensions. A large stock of well-seasoned Boards, Plaster, and Slate Laths always on hand, and sold on reasonable Terms.—Further particulars may be had on application at the Works, High Orchard, Gloucester.

11th May, 1853.

FOWLER'S IMPROVED WROUGHT PUMPS for CONTRACTORS, BRICKMAKERS, EXCAVATORS, and OTHERS.



The attention of this house for more than fifty years past having been almost exclusively paid to the manufacture of every description of pump-work for every variety of purpose, attention is respectfully requested to their very superior Wrought Pumps, with plain or sliding telescope suction, galvanized and ungalvanized. A large stock of all sizes is kept ready to finish off to order, according to length required, at the shortest notice.

This description of Pump-work varying in almost every case, it is impossible to quote a general price, but the fullest particulars will be given on application.

A large stock of Wrought Pumps, from 3-inch single to double 15-inch barrel, is also kept on hire prepared for hand or steam power, on reasonable terms, at

BENJAMIN FOWLER'S
ENGINE-PUMP MANUFACTORY,
Whitefriars-street, Fleet-street, London.

TO BUILDERS AND PLUMBERS.

The attention of the Trade is called to JOHN WARNER & SONS' PATENT VIBRATING STANDARD PUMP,



which is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the vibrating standard, the cumbrous harness and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.
Manufacturers and Patentees.

STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



Contracts taken for pumping any quantity of water.

JAMES BURTON & SONS,
Engineers and Contractors,
John's-place, Holland-street,
Southwark, London.

TO WATER COMPANIES AND PLUMBERS.

HIGH-PRESSURE COCKS & CLOSETS.



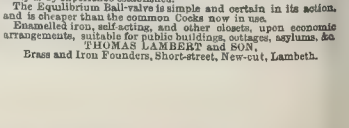
The Health of Towns Commissioners having recommended the adoption of the high-pressure principle in all towns, WARNER'S HIGH-PRESSURE COCK is recommended as a Cock free from leakage, and applicable for all purposes and situations. Patent Closets and Basins with supply-valve for attaching direct to main pipes without a cistern, cocks, or wire.

LEAD, IRON, and TIN PIPE.

JOHN WARNER and SONS, Manufacturers, 8, Crescent, Jewin-street, London.

PRIZE MEDAL, CLASS 22.

HIGH-PRESSURE VALVE COCKS.—LAMBERT'S PATENT.



These Cocks have, during the last five years, been extensively and most successfully used in many Towns under continuous high pressure, varying from 100 to 350 feet; their efficiency and durability is by experience established.

The Equilibrium Ball-valve is simple and certain in its action, and is cheaper than the common Cocks now in use.

Enamelled iron, self-acting, and other closets, upon economic arrangements, suitable for public buildings, cottages, asylums, &c.

THOMAS LAMBERT and SON,
Brass and Iron Founders, Short-street, New-cut, Lambeth.

THE CARNARVONSHIRE SLATE COMPANY (Pr visionally registered.)—Capital, 50 000l. in 50,000 Shares of 1l. each, of which 35,000l. shares are available for the public.

DIRECTORS.

Geo. Tyrrell, esq. Abchurch-lane.
John Lambert, esq. Austinfriars.
William F. Meakin, esq. Token-house-yard.
John Chas. Fuller, esq. Croydon.
George H. Sant, esq. Swansea.
Robert Lloyd Ellis, esq. Carnarvon.

SOLICITORS—Messrs. Tyrrell, Paine, and Layton.
BANKERS—London and Westminster Bank, Lothbury.
SECRETARY—Sydney Kingsford, esq.

Offices of the Company, 8, Church-passage, Guildhall.

The supply of slate has for some years past fallen short of the demand, and this disproportion has been increasing gradually, until at present there is no possibility of getting orders executed within a reasonable time. At all the great quarries now in operation there are as many orders on hand as will require fifteen months to execute, and many of them are therefore compelled to decline further commissions. Vessels from America, and other foreign ports are detained many months for cargoes; and slate of a quality hitherto almost unsaleable is now eagerly sought for by consumers.

Under these circumstances, the importance of an increased supply has been for some time past fully recognised, and several new quarries have been attempted in North Wales; but the difficulty, expense, and delay attendant upon these undertakings, has prevented their affording any effectual aid.

The present Company is formed for the purpose of purchasing the lease of the Tanrallt and Plas Du Slate Veins, and for opening and working the same by means of an adequate share capital.

These veins are situate in the parish of Llanllyfni, in Carnarvonshire, North Wales, seven miles from Carnarvon, to which place there is every facility for the conveyance of the mineral produced. They possess the greatest possible advantages for the deposit of waste, and for keeping the works dry. Hence the delay and cost of quarrying will be reduced to a comparatively in-significant amount.

There are no less than five distinct veins of slate on this property; in four of these openings have been made in various parts, and whilst slate of the very finest description has been found within four or five feet from the surface (a circumstance unexampled in any other locality), there is ample evidence that the supply will prove almost inexhaustible.

One vein alone is about 100 yards in width, extending through the whole of the plot to be assigned to the proposed Company. This is of the beautiful soft green colour formerly much used, but which has now become extremely scarce; and is in great request by the most distinguished architects, for the high pitched roofs of churches, mansions, and villas in the mediæval styles. In most quarries the green slate exists as a fault, and is found only in patches; but the large vein here referred to is a perfect slate formation, of the very finest texture and cleavage; and may be confidently expected to produce at least 25 per cent. more than slate of the ordinary colour. Besides this valuable vein, the property contains others of purple, blue, and other tints, on all of which the openings present the most favourable aspects. From the summit of the mountain there is a constant and ample fall of water, which, as the works proceed, will be eminently serviceable in turning water-wheels to drive the machinery for sawing and planing slate slabs.

With regard to the question of the amount of profit likely to be realized by a judicious working of the property, the following calculations may be worthy of consideration:—From the favourable situation of the veins and the lightness of the top rock, it is calculated that an outlay of 3,000l. will, in the course of a few months, make the necessary openings, and lay bare sufficient rock to employ 100 men on tribute; which number will produce, with the greatest facility, 400,000 roofing slates per month, of various sizes. The average cost of these, including getting and making, conveyance to the port, royalty, and incidental expenses, will not exceed 32s. 6d. per thousand, whereas the selling prices at the present time are 47l. per thousand, leaving a monthly profit of 600l. or upwards of 7,000l. per annum. At the expiration of six months, a further sum of 5,000l. may be expended in the enlargement of the works, so as to admit of 100 more men being employed; when the annual profit may be estimated at 15,000l. which, by the application of further capital to the development of the works, may be increased to a very great extent.

The owner of the lease of the Tanrallt and Plas Du Slate Veins has consented to receive the value of his interest in them in shares in the Company, which are not to be transferable for twelve months.

The grant is leased to the present proprietor for a term of 100 years, but it is believed that a very much longer lease than that of the mineral, which can be worked on a scale equal to the most extensive quarries in the principality.

The following are extracts from numerous Reports from the best authorities on the nature and extent of the slate in the Tanrallt and Plas Du Veins.

From J. Swinton Spooner, esq. Manager and Part Proprietor of the Machno Slate Quarries, Festiniog, Merionethshire.

The Green Slate Rock on Tanrallt is good and well laminated, and splits well; and will unquestionably be found to be more solid the deeper the work is carried. I should strongly recommend a tunnel being drives into it, commencing on a level with the road below.

With regard to the openings on Plas Du there can be no two opinions. In the opening close to the road as good slate as any in the principality is to be found within four yards of the surface of the ground; and I am strongly of opinion that there is an immense body of slate running throughout the grant; and all that is required is a sufficient capital, judiciously laid out, to make a large and profitable work.

From George Godwin, Esq. F.R.S. Architect, Editor of the *Builder*, &c.

Gentlemen,—In accordance with your instructions I have visited the grant of land now in your hands, in the parish of Llanllyfni, about seven miles from Carnarvon, and have examined the slate quarries that are being opened there, aided by the plan of the property, prepared by the Local Mineral Surveyor, Mr. Lloyd Ellis. The estate comprises about 59 acres, and contains blue, purple, and green slates. Of the latter there is a vein, shown on the plan, one-third of a mile in length, and with a mean width of 70 yards.

The estate forms the side of a hill, and is very advantageously placed for working. It is in close proximity to a tram-road already formed, for the transit of materials from the various quarries, and there is a stream of running water on the land, which may be made to supply motive power, if needed.

The slate, so far as it has yet been worked, is of excellent quality, and has a beautiful cleavage, splitting with the greatest ease and regularity. I have made experiments on specimens, which I brought from various parts of the estate, and find it non-absorbent to the most satisfactory extent. Immersion in water for ten hours made no appreciable difference in the weight of the slates operated on.

To sum up: I have no hesitation in expressing my belief that the Tanrallt and Plas Du Quarries are so situate as to admit of being worked economically and advantageously, and that the slate is of a character for which the demand is greater than the supply. In common with other architects, I have found it a matter of great difficulty, for some time past, to obtain a sufficiency of good green slates for works in progress.

I am, Gentleman, your very obedient servant,
GEO. GODWIN, F.R.S. Architect.
24, Alexander-square, Brompton.

Prospectuses, with further reports, and forms of application for shares, may be obtained of Messrs. TYRRELL, PAINE, and LAYTON, Guildhall-yard; and of the Secretary, at the Company's offices, where specimens of the slate may be seen.

THE CARNARVONSHIRE SLATE COMPANY, 8, Church-passage, Guildhall.—Notice is hereby given, that NO APPLICATION for SHARES will be RECEIVED after MONDAY, the 8th day of AUGUST.
By order of the Board.
SYDNEY KINGSFORD, Secretary.

THE PIMLICO SLATE-WORKS. Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—32 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BEABYS, Belvedere-road, where terms may be obtained.

MACHNO SLATE and SLAB COMPANY, near FESTINIOG, NORTH WALES.—The Directors of the above company beg to call the attention of Architects, Slate-workers, Builders, and others, to the great SUPERIORITY of their SLABS over those of any other quarry in the United Kingdom. They are of a beautiful and uniform colour, entirely free from sulphur, harden on exposure to the atmosphere, easily worked, and, from the nature of the vein, may be obtained of almost any size, and have lately been extensively used in the construction of slate houses for exportation to Australia. The Directors can strongly recommend the roofing slates for the excellence of their colour, durability, and the absence of that brittleness so common in the generality of Welsh slates. A reference will be required in all cases with the first order.—J. SWINTON SPOONER, Beaver-grove, near Llanberis, North Wales, Manager.

TO BUILDERS, MASONS, AND OTHERS.

AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.

The largest stock in England of Marble in Blocks and Slabs, Veined, Hardhlls, Dove, Black, and Black and Gold, Sienna, St. Annes, Statuary, &c.

Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.

Portland, Ham Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.

And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.

All goods carefully packed and forwarded to any part of England.

JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their Stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-roods, Fire-stone, &c. sold at the lowest possible prices for the establishment. In London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.:—Good tooled York-hure Paving, at 33s. per 100 feet (retail, at 4½d. per foot); Picklver ditto, at 40s. per 100 feet; very superior, 44s. ditto; thick rubbed Paving, in great variety of sizes, at 52s. ditto; Harehill and Selfaced Slab, of the finest quality; thick Selfaced Paving ditto, from 2½ to 4 inches; Sinks, large or small sizes, at 1s. 9d. per foot; Steps, Sills, 12 inch, and 18 inch Coping, all at very low prices; Duchess, Countess, and other Slates; Clay and Stone Pipes, Chimney-pots, &c.—A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

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Great Western Railway Station.... PADDINGTON.
Great Western Railway Station..... BRISTOL.
Hope-street, Mount-pleasant ..... LIVERPOOL.
Castle-fields ..... MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

BANGOR WHARF, King's-road-bridge, Camden-town.—STRINGFIELD and COOPER, late W. W. Rawlins, beg to call the attention of Builders and others to their stock of Bangor slates, laths, plaster, Roman, Portland, and Keene's cement, blue lias, Dorking, and chalk lime, plasterers' hair, Yorkshire plain, pan, and Mirador tiles, glazed sewer pipes, closet-pans, and traps, Welsh fire-bricks, gravel and shells for garden paths, ballast, sand, &c. Materials landed, wharfed, and carted.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and 19, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy. Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

By her Majesty's Royal Letters Patent.

FREDERICK RANSOME'S PATENT.

THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. Its appearance is accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.

For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in open Terrace-work, Balustrades, Vases, Copings, Strings, &c. or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.

Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.

Specimens may be seen and further particulars obtained at the offices,

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ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the floor-boards generally sold being sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, and Slit, and Moulding Boards prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

By Her Majesty's Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. I. FULLER'S Depôt, 27, Wharf-road, City-road. 8 anish and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and carted home free of charge. Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

FOREIGN TIMBER and DEALS of every description at the lowest prices for cash, and also prepared floors at the following prices for the present month:—
½-inch yellow or white, 13s. to 14s. 6d. per square.
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Battens, 2s.; Deals, 3s. 6d.; and plank, from 4s. 6d. per 12 feet; timber, from 7s. 6d. per load; and every kind of English and foreign wood direct from the docks.—Apply to Mr. MAY, 90, Leadenhall-street.

SEASONED FLOORING.—A large stock of dry YELLOW and WHITE FLOORING, prepared by improved machinery, always on sale, at the lowest possible prices at ARCHBUTT and ATKINSON'S, St. Pancras Saw Mills, Old St. Pancras-road.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's-road West, Chelsea. Bricks, Tiles, Slates, Plaster, Slated and Slate Slab, Tiles, &c. on Sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. D. DRUCE and CO. as above. Great facilities for the prompt execution of country orders.

WOOD MOULDINGS.—TO BUILDERS AND OTHERS.—All kinds of Wood Mouldings, Cornices, Skirting Boards, Sizing Battens, and Gentile Laths, supplied with the least possible delay, and at prices, having regard to quality, lower than any other house. The mouldings are from best dry pine; with patterns and prices, may be obtained at JAMES SIMMONS'S (successor to Messrs. Hollingworth and Co.), Paddington Moulding Mills, 8, North Wharf-road, Paddington.

MOULDINGS by MACHINERY.—ARCHBUTT and ATKINSON will forward their new and enlarged List of Diagrams on receipt of four penny stamps (the price of the postage), St. Pancras Saw Mills, Old St. Pancras-road.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge,

are prepared to supply timber and deals, &c. cut and uncut, to any extent, at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute any description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon).

IMPORTANT CHALK and LIME WORKS and BRICK EARTH, TO BE LET, in a central position, and commanding with great advantage the principal if not the entire supply of Chalk, Lime, and Agricultural Chalk to the centre of the county of Essex.

A line of railway is proposed to be connected with these works (at the expense of the proprietor), which will afford greater facilities and advantages than any existing works in these districts possess, enabling them to successfully compete with other works not possessing like advantages. There is also an almost inexhaustible supply of pure brick earth.

A respectable enterprising man of business may safely calculate upon securing a good income without the expenditure and risk of capital.

Plans of the proposed works, with geological sections, may be seen, and particulars obtained on

MR. HARCOURT QUINCEY'S PATENT CONVEX REVOLVING IRON SHUTTER.

BUNNETT AND CO. ENGINEERS, FOUNDERS, &c.

ORIGINAL PATENTEES OF REVOLVING IRON SHUTTERS,

NO. 26, LOMBARD STREET, LONDON; AND DEPTFORD, KENT;

Respectfully inform the Architectural Profession, Builders, and the public that they are now the only Licensees of the above Patent; the Licence granted to Mr. PATRICK CLARK having entirely ceased, and an injunction having been obtained against him by the Patentee, to restrain him from making, using, supplying, or vending the Shutters described in Mr. QUINCEY'S Patent. In 1850 Mr. BUNNETT became the Licensee of the Patent Convex Shutter for the sole purpose of enabling him to secure and bring before the public, his

"NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER,"

WHICH OBTAINED THE PRIZE MEDAL IN THE GREAT EXHIBITION OF 1851.

In this Shutter, the valuable points of the Convex Shutter are combined with all the improvements suggested by long practical experience in the very extensive use of BUNNETT'S Original Patent. The greatly increased demand, with additions to, and improvements in, their extensive plant and machinery, command of the best markets for material, and employment of experienced workmen, enable B. and Co. to supply this very superior Shutter at a price that will effectually supersede any of the inferior expedients now put forth.

BUNNETT and CO. respectfully caution parties contemplating the adoption of Revolving Iron Shutters, against being misled by fallacious statements in advertisements and otherwise, and recommend that direct inquiries should always be made of those who have them in use. The best proof for the necessity of this exists in the fact, that BUNNETT and CO.'s Revolving Iron Shutters have been in use in many of the first establishments (to whom reference can be made) for fifteen or sixteen years, and are now perfectly sound and good, while those of other makers, which have not been in use more than one-third of that time, are falling to pieces, and BUNNETT and CO. are repeatedly called in to repair and put them in working order, and in some instances to replace them altogether with their NEW PATENT CURVILINEAR REVOLVING IRON SHUTTER.

REVOLVING WOOD SHUTTERS

Of a superior description, fitted with metallic hinges, and adapted to work in any required direction.

BUNNETT and CO. are also the Original Patentees and Manufacturers of

METALLIC SASH-BARS AND MOULDINGS FOR SHOP-FRONTS, SKYLIGHTS, &c.

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SELF-ACTING DOUBLY-TRAPPED WATER-CLOSETS, IMPROVED CLOSETS for SHIPPING, EFFLUVIA-TRAPS, &c.

PATENT VENTILATING FIRE-PROOF IRON DOORS, IMPROVED GLASS LOUVRE AND SLIDE VENTILATORS.

IMPROVED HOISTING AND LOWERING MACHINERY BY STEAM OR HAND POWER,

Unequalled for safety and convenience, as already erected by BUNNETT and CO. in many of the principal banks, warehouses, and hospitals in London and elsewhere.

POWERFUL AND COMPACT STEAM-ENGINES, SAWING, PLANING, MOULDING-CUTTING, AND OTHER MACHINERY, AND IMPROVED JOINERS' BENCH AND FLOORING CRAMPS, &c.

All works are guaranteed of the very best description, and Architects may depend on their designs being faithfully carried out. They are respectfully requested, when intending to adopt any of BUNNETT and CO.'s Works, to see that the name is properly inserted in the specification, much inconvenience having occasionally occurred from the omission.

ESTIMATES, WITH ALL NECESSARY INFORMATION, EXPLANATORY AND DETAIL DRAWINGS PROMPTLY FURNISHED.



JENNINGS'S PATENT SHOP SHUTTER-SHOE and FASTENER costs HALF the PRICE of the unsightly SHUTTER BAR.

May be had from any Ironmonger, or from the Patentee, GEORGE JENNINGS, 29, Great Charlotte-street, Blackfriars-road

JAMES CATLING, Manufacturer of Sashes and Frames, Shop Fronts, and Joiner to the Trade, No. 7, Batchelor's Rents, Church-street, Bethnal-green-road. Estimates given for every description of work. A full list of prices may be had on application.

WINDOW BLINDS.—TYLOR & PACE, Window Blind Manufacturers, 313, Oxford-street, adjoining Hanover-square, and 3, Queen street, Cheapside, London, submit the following PRICES of WINDOW BLINDS, which they can recommend as being made in the best manner:—Venetian blinds, per square foot, 9d.; best hollaud blinds, on rollers, 6d.; best ditto on spring rollers, 9d.; gauze wire blinds, in mahogany frames, 2s.; perforated zinc blinds, in ditto, 1s. 10d.; outside blinds of striped cloth, 3s. Transparent blinds in great variety. Engravings, with prices and discounts to builders and the trade, forwarded on application, post free.

CHARLES WM. WATERLOW and CO. Manufacturers of Sashes and Frames, and Joinerto the Trade.





121, Bunhill-row, Finsbury-square.

Well seasoned materials, superior workmanship, lowest prices.

Upwards of FOUR HUNDRED DOORS, and a large variety of Sashes and Frames, always on sale.

Glazed goods securely packed for the country. Steam-struck mouldings in any quantity.

N.B. This establishment is worth the notice of all engaged in building.

REVOLVING SAFETY WOOD and IRON SHUTTERS.—SNOXELL, Patentee, 86, Regent-street, and at his Steam-works, 135, Old-street. These shutters have fully borne out their superiority over other revolving shutters for security, durability, and simplicity. References can be given to noblemen whose mansions are fitted herewith, and numerous large establishments, where some are fixed measuring upwards of 400 square feet in one shutter, and which are opened and closed in a few moments with the greatest possible ease, without the use of machinery. The Patentee manufactures Brass Sash Bars, Stall Board Plates, &c.

JAMES TUBBY, Manufacturer of Doors, Sashes and Frames, and Joiner to the Trade, Liverpool House, Liverpool-road, Islington, has on hand 300 1¾-in. and 1¼ in. best Christian white deal doors, 4-stiles, 9-in. rails, size of 1¾-in. 2 ft. 7 in. wide, 6 ft. 7 in. high; ditto 1¼-in. 2 ft. 6 in. by 6 ft. 6 in.; price of 1¾-in. 8s. 6d.; ditto 1¼-in. 6s. 6d. each. Terms cash.

N.B.—Houses finished by contract.

J. MILLS (late Shop Foreman to Messrs. Lawrence and Sons), JOINER to the TRADE, 7, Princes street, Stamford-street, Lambeth. Shop-fronts, fittings, staircases, &c. Well-seasoned materials and superior workmanship, at the lowest possible prices. A quantity of doors and sashes always in stock.—By enclosing a postage-stamp, a full list of prices will be returned.

PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c.

ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting a MATERIAL which, when well wrought, is probably superior to every other for drains or conduits, for ridges, hips, valleys, and every part of roofs, for plain or chequered floors, for paving and erections of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro Metallic"), No. 4 WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. The lists contain both prices by number, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 123 (having been at first No. 111).

BRICKS from COWLEY and KENT; Also WHITE, YELLOW, and RED FACING BRICKS. BLUE VITRIFIED BRICKS; Fire Bricks, Lumps, and Tiles. CHARLES RICHARDSON, 3, SOUTH WHARF, PADDINGTON

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at H. DODD'S Brickfields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock, and to judge for themselves.

Malm Place, half-washed Stocks, and Place Bricks, also on sale. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the stock being suitable for external facing.

Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

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MAW'S ENCAUSTIC TILES.—MAW and CO.'S NEW PATTERN-BOOK, which is now nearly ready for post-free circulation, will include an extensive collection of the best mediæval examples; together with a very complete set of designs in the Italian, Greek, Tudor, and Elizabethan styles. In the meantime designs to any given dimensions, with estimates, will be forwarded without charge, and samples at list prices, on application to MAW and CO. Benthall Encaustic Tile Works, near Broseley, Shropshire.

FIRE BRICKS, &c.

WARD'S old-established Honduras-wharf, Bankside, and Jamaica Coffee-house, Cornhill, London—PAN TILES, very best (country), 52s. per 1,000; plain, 35s.; 12 and 9 in. paving ditto, remarkably bright and handsome; Cowley and Kent Stocks, Suffolk White and Red Facing Bricks; oven-grown, and flooring ditto; Windsor Oven Tiles; F. P. and Non-such Fire-bricks; Malt and Corn Drying Tiles; Newburgh, Newcastle and Welsh Brick Lumps and Tiles; Retorts and other Fire Goods made to pattern; Thames Sand, River Gravel for Concrete, Founders' Loam and Sand, White and Red House ditto, Drain Pipes, &c. Barges of sand and Gravel to wharfs or dock at short notice.

ASHES and BREEZE.—WANTED, immediately, about 300 CHALDRONS of ASHES and 100 CHALDRONS of BREEZE. Prices per chaldron, delivered on land in Church-lane, Lee, Kent, or in barges alongside at the nearest wharf to that spot, are requested to be sent to Messrs. TODD, at their Office, Milner street, Brompton, Middlesex. If delivered alongside, the price to include wharfage, and to state at what wharf.

WANTED, CLAY for BRICK-MAKING, accessible either by railway or water, within 20 miles of London.—Apply, with particulars as to quantity, terms, &c. &c. to JOHN A. F. DUFF, Esq. 8, Old Jewry, City.

TO BRICKMAKERS.

WANTED to PURCHASE, 2,000,000 HARD STOCKS, and 1,000,000 GRIZZLES; to be delivered this season, on a wharf at Putney, on the Thames.—Address, stating lowest terms and full particulars, to GEORGE MORGAN, Esq. Architect, 5, Chancery-lane.

TERRA COTTA.—Vases, Figures, Capitals, Coats of Arms, Friezes, Consoles, Chimney Shafts, Flower Trays, &c. &c. manufactured by J. M. BLASHFIELD, Mill Wall, Isle of Dogs (near the West India Docks), and sold at No. 1, Praed-street, Edgware-road, Paddington.

PATENT VULCANIZED INDIA-RUBBER TUBING, for Gas Fittings, Chemical Purposes, Fire Engines, Manure Pumps, &c.—JAMES LYNE HANCOCK, Sole Manufacturer (and Licensee), Goswell-mews, Goswell-road, London, begs to invite the attention of Architects, Builders, Engineers, and the trade generally, to the Vulcanized India-Rubber Tubing, which is now manufactured from 1/8 inch bore and upwards, in lengths from 50 to 100 feet, and of various strengths, suitable to the purposes for which it is applied. VULCANIZED HOSE FOR WATER to BATHS in DWELLING-HOUSES and HOT WATER to BATHS in DWELLING-HOUSES and length and size to order.

*** Testimonials may be had on application at the Manufactory.

N.B. VULCANIZED WASHERS and SHEET RUBBER or Steam and Hot-Water Pipes, and Packings for Pistons and Gland-Boxes of Steam Engines, cut any size to order.

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As perfected and practised by Messrs. DAY and SON, has assumed a position hitherto unattained for artistic excellence, rapidity of execution, and economy of production. The first and only perfect realisation of a painting in colours, "The Blue Lights" (after Turner), executed at this establishment, secured for itself the designation of a Painting Print. Other examples of great merit, more particularly illustrating rapidity and economy of production, combined with artistic excellence, will be found in the three important works by

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Namely, "THE GEOMETRICAL MOSAICS OF THE MIDDLE AGES," "METAL-WORK AND ITS ARTISTIC DESIGN," and "THE INDUSTRIAL ARTS OF THE NINETEENTH CENTURY."

These works, although elaborately printed in colours and gold, have been sold at the price of uncoloured works. The last-named, consisting of 160 plates, issued in Fortnightly Parts of four plates, proves the possibility of adapting Chromolithography to Periodical Works—to book plates requiring long numbers cheaply and quickly—and to geological or other coloured maps.

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H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.

These Pencils are prepared in various degrees of hardness and shades.

H H H for drawing on wood.		F F light and shading.	
H H H for architectural use.		F for general use.	
H H for engineering.		B black for shading.	
H for sketching.		B B	ditto.
H B hard and black for drawing.		B B B	ditto
		B B B B	ditto
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Sold by all the principal Stationers in town or country.

NOTICE.—CHAPPUIS' PATENT MYRIASTRATIC REFLECTOR.—It having come to the knowledge of the patentee that certain parties are offering to the public reflectors to light up dark places, which are imitations and infringements of this patent, this is to give notice, that persons using such are liable to be restrained by injunction under the Act 15 and 16 Vict. cap. 83, and that information, which may lead to the conviction of the infringers, will be rewarded on application to the patentee, AUBIN CHAPPUIS. Sole Manufacturer, 10, St. Mary-axe, City; or to BARLOW and CO. Office for Patents, 89, Chancery-lane.—July 1, 1853.

SURVEYING, ARCHITECTURAL, and ENGINEERING ESTABLISHMENT,

For preparing Gentlemen for Surveyors, Architects, Engineers, Leveller, Draught-men, Measurers, Valuers, &c. and for giving EVENING INSTRUCTION, in Architectural, Civil Engineering and Mechanical Drawing, Colouring, Perspective, Mathematics, Mechanics, Specifications, Taking out Quantities, Preparing Estimates, &c. &c. Terms, one guinea per quarter.—For prospectuses, &c. apply at the Offices, 24, Guildford-street, Russell-square.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade, that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Flare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

TO RAILWAY DIRECTORS, ENGINEERS, &c.—The PERMANENT WAY COMPANY have the satisfaction to announce that the use of their valuable patents for this branch of railway construction is steadily increasing. After a series of careful trials upon the London and North Western and Midland Railways, and personal examination by the directors of these companies of the results obtained on the Eastern Counties line, they have arranged for the use of the Permanent Way Company's patents on upwards of a thousand miles of railway; these results having been clearly proved to consist in economy in the wear of both the road and rolling stock, and greatly increased comfort and security to passengers. Testimonials from the most eminent engineers may be inspected at the Office of the Company, and every information as to the cost and terms of working be obtained by application to Mr. CHARLES MAY, Civil Engineer, the Manager of the Permanent Way Company; or to Mr. WILLIAM HOWDEN, the Secretary, No. 26, Great George-street, Westminster.—London, June 8, 1853.

SPIRAL STAIRCASE.—TO BE SOLD, a handsome SPIRAL STAIRCASE, rising 17 feet, thirty-four steps, made within the last year, of Spanish Mahogany, with ornamental iron risers and balusters; the whole of beautiful workmanship, and will be sold cheap.—Further particulars may be obtained of C. HINDLEY and SONS, 134, Oxford-street.

The Builder.

SATURDAY, AUGUST 13, 1853.

AS it seems tolerably certain that an attempt will be made before long, to provide for England a building to contain the national collection of pictures worthy of the purpose and the country, all information and sound reasoning on the various points which perplex the question become more than ordinarily interesting and valuable. The Parliamentary committee appointed to take evidence on the proposals made for enlarging the present building in Trafalgar-square, or for erecting an entirely new and fitting structure in some other locality, have heard numerous witnesses,—Mr. W. Hamilton, Sir R. Westmacott, Mr. J. Fergusson, Mr. Carpenter, of the British Museum, Mr. E. Bowring, Mr. Thomas Cubitt, Mr. Pennethorne, and many others, and have discussed picture cleaning, picture buying, enlargement, rebuilding, combination of collections, re-arrangements, advantages and disadvantages of different sites, opening on Sunday, and much besides. With the result of their labours we shall deal hereafter. We hope it may prove of more value than we expect it will.

Various pamphlets, too, on the question, have been published; one in the shape of "A Letter to Lord John Russell," by an Old Traveller,* which gives plans for a building, to include sculpture, paintings, drawings, and engravings, arranged in schools and periods; and Mr. Rodwell, "restorer," has circulated some "Remarks on the Pictures in the National Gallery, which have recently been cleaned;"† recalling a little too strongly the old adage, "Two of a trade," &c. to have the weight the observations might otherwise carry with them. He points out justly the knowledge which should be possessed by those attempting to meddle with fine paintings, and sums up thus: "The way in which the managers of the National Gallery have proceeded with the work of restoration is simply at variance with the general method practised, where anything requiring skill and experience is to be accomplished. On such occasions, it is the usual custom to give public notice thereof, and to call upon men possessing talent and knowledge for plans, estimates, or specimens, as the case may be. But did the trustees do this? No; on the contrary, they have intrusted the cleaning and restoring of these and other pictures to those who are, by their evident want of judgment and skill, quite incompetent to the task. Let us, however, hope that the committee now sitting will do something to promote a better management in the cleaning and restoring department of the institution."

The "Old Traveller" manifests the greatest contempt for English architects:—

"When we look back," he writes of the present Gallery, "some five or six and twenty years ago—the hopes and expectations then raised—the miserable failure of that design in every particular—the picture of littleness and ignorance that it has presented to foreign nations—the worse than waste of an enormous sum of money—and the throwing away of a site which the late Sir Robert Peel pronounced to be one of the finest in Europe—as indeed it might be considered for a public building of a different character, though one of the worst for the preservation of works of art,—when, I say, we take a retrospect, and consider the high tone in which that project was brought before, and accepted by, the then House of Commons, as a grand scheme for a National Gallery; and when we reflect on the mortifying ridicule it has exposed us to as a nation,—can we fail to distrust the judgment of public men, or to deplore the degradation into which the science of architecture has fallen in this country? For we have glaring proofs of this, not only in Trafalgar-square, but in the British Museum, the Houses of Parliament, and almost every public building erected in the metropolis in the present century."

He points, foolishly, to the late Crystal Palace as affording a proof of the incapacity of professors of architecture, and says that with the exception of the Royal Gallery in Windsor Castle, the only gallery worthy of the name is Lord Northwick's, at Thirlestane House, "which was built by an intelligent stonemason after his lordship's own plans!" "In short," he continues, "judging from the profound deficiency evinced in the present National Gallery, and considering the distinguished names that were connected with the examination and approval of the designs for that building, it would be difficult indeed to imagine that either British statesmen or English architects have any enlarged or sound idea about the requirements of a National Gallery, beyond its mere name."

Returning to the question of lighting the proposed new building: some months ago, as we mentioned at the time, the Government architect, Voit, of Munich, forwarded to Mr. Hirst, of Bristol, for the society of which he is the honorary secretary, three sections of the rooms of the new Pinacotheca, which has been built in that town from his designs, in order to explain the principles followed in respect to the lighting. These we now place before our readers. In the observations accompanying the diagrams, Mr. Voit remarks that the strength of the light in a given space depends on the intensity of the light, the distance and the angle of the incident light, the size of the window, and the depth of the shaft through which the light must pass. Touching the last, other things being equal, that room is better lighted into which the light falls through the shallowest shaft.

If, therefore, the side of the shaft or opening in the sections A and B, Fig. 1, were deeper than it is in the new Pinacotheca, such, for example, as the dotted lines indicate, the light would be much weaker in the room, or the strongest light would be found on the walls nearer to the floor. So it may happen through continued prolongation of the shaft, that the strongest light no longer falls on the walls, but only on the floor; as would be the case, if the light-shaft of the section B were prolonged as far as the horizontal line *r q*.

It depends, therefore, on the angle *x*, which is formed by the lines drawn diagonally from the uppermost to the undermost edges of the shaft. The greater this angle, the stronger the light in the room. For this reason, the light shafts in the new Pinacotheca were *made as shallow* as the construction of the roof truss allowed, so that in the whole room no part of the wall surface should remain in shade.

Mr. Voit goes on to say, that to prevent a ray of light from falling on the pictures, a second covering with ground glass is fixed on the rolls *n o p*. By these means the light is made very soft, and is so equally divided in the room, that it is hardly perceptibly stronger on the wall fully opposed to the sun than on the opposite side.

These glass surfaces are not hidden from sight, as is the case in another apartment, Fig. 2, where the eye only sees the light on the pictures, but does not observe whence it enters, because an opaque covering S. T. U. is placed

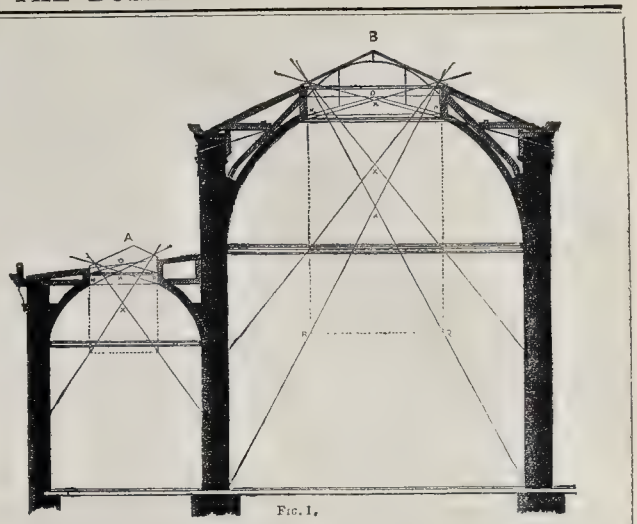


FIG. 1.

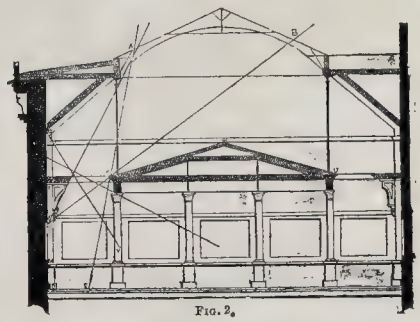


FIG. 2.

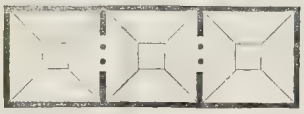
* "On the Formation of a New National Gallery, and the Preservation of Works of Art." London: Chapman and Hall. 1853.

† London: T. and W. Boone. 1853.

between the window and the eye. The light entering through the window A. B. falls on the surfaces *c d e* of the wall and floor. The wall from *g* to *f* is in shadow, or is at least illuminated by a feeble light; and, of the surface of the wall *f g*, only the short portion from *i* to *g* can be seen, on account of the far-projecting cornice at *f*. The surface *m d e* has a very dark colouring, which diminishes the light, so that the brilliant light lies only on the picture *c m*, and consequently produces, he says, an extraordinary effect.

The arrangement adopted by Mr. Voit is not new. It was applied in a room in Newman-street, Oxford-street, built for the exhibition of West's pictures; and Messrs. Papworth, in their work "Museums, Libraries, and Picture Galleries," describe a gallery built for Mr. Allnutt, of Clapham-common, between 1829 and 1833, where the lighting is on the same principle. Sir Charles Eastlake, who considers that *the window or source of light by which a picture is seen, and the picture itself, ought not both to come within the range of vision at the same time*, thought very highly of such an arrangement as that we are mentioning.

In the picture-gallery in the Palazzo Brera,



at Milan, of which we give a plan, a pyramid of dark violet-coloured cotton used to hang under one of the skylights, and beneath this the spectators stood to view the pictures on the walls.



The arrangement in Voit's room C suggests the practicability of forming a gallery below and a book-room above the centre part, both under the same skylight, and subject to the same heating and ventilation, for the sake of economy. Such of our readers as have any useful particulars of Voit's building will oblige us by forwarding them. If we remember rightly it has no windows in the walls, the outer surface being intended to receive fresco paintings.

The *older* Pinacotheca in Munich was built, it will be remembered, from the designs of Leo von Klenze. This is 420 feet in extent; the principal rooms running its whole length in the centre, with a corridor on one side of them, and a series of small apartments on the other. The galleries are lighted from the top.

The "Old Traveller" proposes that his galleries should be lighted from windows high up in the side walls:—

"The grand central suite of galleries, namely, those intended for paintings, should be 36 or 38 feet wide; and the first division, appropriated to the Italian schools, would consist of seven halls or chambers, 60 feet long, and one of 36 or 38 feet square. Their height should correspond with the width, having from the floor 24 feet of dead wall for hanging the pictures, the remaining 14 feet being to contain on each side a row of spacious windows, which would admit a clear, steady, and equal light in every part. They should be placed directly upright in the walls, the plan adopted in the new galleries at Dresden, and should be formed of strong plate glass, with arched heads, corresponding with the windows in the lower parts of the building."

Although side-lights *high up* have been found efficient, there is no question that for large pictures lighting from the top is the best mode. We shall have other opportunities to discuss the question.

We sincerely hope that when the matter comes before Parliament, men of all parties and political opinions will unite their endeavours to make such arrangements as may obtain for us a structure completely adapted for the purpose, and worthy of the age and country: not a building good enough, but the best possible; scientifically correct, structurally perfect, and architecturally magnificent. "The study of art," as M. Guizot writes, "possesses this great and peculiar charm, that it is absolutely unconnected with the struggles and contests of ordinary life. By private interests, by political questions, men are deeply divided and set at variance; but beyond and above all such party strifes, they are attracted and united by a taste for the beautiful in art: it is a taste at once engrossing and unselfish, which may be indulged without effort, and yet has the power of exciting the deepest emotions; a taste able to exercise and to gratify both the nobler and softer parts of our nature—the imagination and the judgment, love of emotion and power of reflection, the enthusiasm and the critical faculty, the senses and the reason."

THE ARCHITECTURE OF PRE-NORMAN ENGLAND.

I BELIEVE that the practice of calling all mediæval architecture in this country "Norman" where the use of the pointed arch does not prevail, results in great measure from a disinclination to the labour of analyzing the facts of various kinds which can be brought to bear upon the question, and from placing too much faith in the traditions and assertions of recent conquerors, whose business it was to decry all that went before them and exalt themselves, rather than narrate historical and impartial truth. I propose, therefore, to call to your recollection certain facts and conditions of society which prevailed in this country antecedent to the advent of the Normans under Duke William (his coming not being by any means the first appearance of the *race* he led in this country), which are calculated, I think, to make us at least pause before we endorse the popular view or the assertions of Norman chroniclers.

It is first to be remembered that when Julius Cæsar came here, more than 1,900 years ago, in continuation of his conquest of Gaul (55 B.C.), he found an unusually high standard of native race, divided into thirty tribes under chiefs or kings.* They had several towns or associated dwellings, built of wood and wattled work, the names of which are in part still retained, as are also those of several rivers. They were warlike and brave; they had chariots and horses, and drove furiously, pretty much, I imagine, after the fashion of the Assyrians sculptured on Mr. Layard's Nineveh marbles, but with the refinement of scythe-blades projecting from the wheels to gash and mangle those they drove amongst. I might here pause to ask how and when the horses were obtained, since they are said to be indigenous only in the East; did the Phœnicians, who are supposed to have come here in very remote times for tin, bring them? But this inquiry, as also the very interesting one as to the traces of two distinct early races of men, discovered by Mr. Bateman, of Youlgrave, would lead us too far a-field on this occasion.

The Britons were numerous, and fought hard for liberty, since it took several large Roman armies 136 years to obtain the final mastery. The last was under Agricola, after two years' campaign, in the reign of Domitian (A.D. 81). The conquest, after all, was more in the nature of assimilation with those who remained than of total subjugation of the people. Some fled to Devon, Cornwall, and the opposite coast, but the greater part retired into Wales, where their descendants to this day live and speak their language; and even here, in England, the "Joneses" (pre-eminently Welsh), as proved by the last census, are the most numerous family we have.

It is foreign to my present purpose to give the details of this 136 years' war, in which large armies were engaged on both sides, all over the country, or the tempting episodes of Caradoc and Boadicea, or any disquisition as to the alleged introduction of Christianity by the family of Caradoc on their return from captivity in Rome, 1,800 years ago (A.D. 51). We may, however, for a moment lift the veil of time, and contemplate generation after generation of our forefathers struggling for that liberty, still so dear to us as a people, and the ruthless determination of the invader, who, using all the means that his comparatively superior civilization and knowledge afforded, continued the struggle, until he at length conquered, or at least exhausted his certainly not less brave opponent, with long intervals, from the wearisomeness of strife, which would prompt alike the invader and invaded to be at rest, and cluster round one common hearth as one human family. It is startling to think that these scenes of strife and bloodshed should take place in the land in which we live at the very time when our Saviour appeared on earth to teach the sublime doctrines of Christianity, with peace on earth and goodwill towards all mankind.

Bearing in mind the above very slight sketch of the general position of affairs in Britain at this period, let us try to ascertain what was likely to have been the state of architecture and the building arts here at this time.

I think it may be said that before the Romans came into the island, it scarcely possessed any architectural building, properly speaking. The Druidical circles, although evincing the existence of considerable mechanical skill, by which large stones, as at Salisbury Plain, were transported, sometimes great distances from the quarries, and then placed as we find them, are not *buildings;* the stones are rough and unwrought, and not *built* or jointed together, and the dwellings of the common people, as stated above, were wattled huts, or caves rudely made in the hills, the houses intended for defence being surrounded by walls of loose stone, and some of them, perhaps, built of brick. Brick is a British word, and they would not have a name for that which did not exist;* and they do not appear to have had any monumental tombs; but we may fairly conjecture, from the general character of the people above sketched, that they would soon take example from the invaders, at least in the art of war, and in the construction of camps and fortifications. Some regular roads they must have had, although the country is described generally as covered with forests. Most likely they had a road on the site of the Roman Watling-street, between Chester and Sandwich, since the site of Rochester, where the road crosses the river was called by the Britains Durobriva, from *dwr* or *dour*, water, and *briva*, a crossing or passage: hence Duro-brivis, the Roman name. And it may be taken as certain, that the Romans, during this 130 or 140 years, were not always fighting; and from the remark of Seneca, quoted by Gibbon, "Where the Roman conquers, he inhabits," the probabilities are, they settled down and formed roads, built camps and fortifications, and most probably built forums and temples; although we have, as far as I am aware, no authentic records of Roman works before the wall of Antoninus. However, Britain was at this time an imperial province with all its privileges, and the above conjecture is confirmed by a passage in Tacitus' life of Agricola, where he says, that "Agricola incited the Britons to erect halls, temples, basilicas, and forums, and to ornament those edifices with porticoes and galleries;" and it is most likely that he practised what he preached. Upon the whole, therefore, I think we may with tolerable certainty conclude that at this time, viz. A.D. 81, nearly 1,800 years ago, this island was well intersected by roads, and possessed camps, fortified places (particularly on this spot, Rochester) and towns with the usual Roman public buildings; more especially, as this was the only province attached to the Roman empire during the first century of the Christian

* The chiefs being in their turn subject to the priests or Druids, who engrossed all the knowledge of the country, such as theology, medicine astronomy, math a history, &c. One very singular circumstance is, that these Druids recorded nothing, but transmitted all their knowledge orally and with great secrecy and ceremony, as the Freemasons now do all over the world; their temples or places of assembly were circular areas inclosed with large stones placed upright with horizontal stones at top, the enclosed area being open to the sky.

* Their camps, amongst which, and now extant, were the Beacon on the Malvern Hills; the Caer-Caradock, near Church Stretton, Shropshire, Moel Arthur, in Flintshire; Chin Castle, Cornwall; and Maiden Castle, Dorsetshire, were in the nature of stockades.

would they be likely to pay considerable ention to its progress.

now come to the second Roman period, prised in the period between A.D. 81 and 409, in the reign of Honorius, according Bede; but other authorities say in the next rn, Valentinian, A.D. 426, when the Britons, r often revolting, and always seeking the privie of freedom, separated themselves from the minion of the emperors. During this period have more light, and can get on a little ter and with more confidence. We have still nty of fighting, more especially with the thern tribes, who were very troublesome, and re at length walled out by Severus, in A.D. 8, a previous wall having been erected of th in the same neighbourhood by Adrian and toninus. Severus came here in person, ove the Caledonians back to their bleak hills, t 50,000 men! (according to Gibbon) by the mate, and died at York in A.D. 211. Britain ems early to have taken its place as an inteal portion of the empire, and at the end of e second century some of the most able men re its governors, amongst them Pertinax d Claudius Albinus. The Britons were also quently engaged in foreign service, and at e decisive battle of Lyons, between Severus d Albinus, where 150,000 Romans were gaged, Gibbon says, "The valour of the itish army maintained indeed a sharp and oubtful contest with the hardy discipline of the lyrian legions;" the Britons previously having ken a prominent part in opposing the sale of e empire, in A.D. 193, to Julius, a rich citin, who was at dinner when he heard of the lection; he left his meal, went to the auction, d high, and secured the prize. Further there a glowing description of Britain by the orator umenius—its harbours, its soil, its climate, its ch pastures covered with flocks, the large evenue it produced, &c. &c.—in his celebration the re-junction of Britain to the empire, after ten years' separation by the revolt of Carausius, in A.D. 287. In describing this revolt, ibbon has (chap. 13) the following suggestive assage:—"Under his command, Britain, deined in a future age to obtain the empire of the a, already assumed its natural and respectable ation of a maritime power." Another revolt, at of Maximus, in the reign of Gratian, A.D. 75, may be mentioned, as it throws some light the state of the population. He invaded, or other made an emigrating expedition, into Gaul, ith a fleet and army composed of 30,000 solers and 100,000 plebeians, who settled in retagne. Their destined brides, says Gibbon, a note, chap. 27), viz. "St. Ursula and 1,000 noble, and 60,000 plebeian virgins, mis- ook their way, and landing at Cologne, were ll most cruelly murdered by the Huns;—alough Trithemius talks of the children of the 0,000 plebeians." But it would be a wearisome, nd perhaps, for my purpose, not a very useful ask, to attempt to follow all the political changes hat swayed and agitated the empire after the eath of Severus, and I shall therefore confine y attention to two points that bear more dictly on the subject of this inquiry; viz., first, ome hints as to the social state of the island, nd second, the very important circumstance of he introduction of Christianity.

First, as to the social state. Passing over the 36 years of desperate struggle already alluded o, we have seen that in the first century, Agrola incited the Britons to adorn their towns with forums and other public buildings; that hey had several towns to adorn is abundantly ecorded; and London, according to Tacitus, was considerable commercial place in the time of Nero, about the middle of the century. St. Albans was a still more important place, under the name of Verulam (a large area, overed with Roman walls, is still to be een); it had many privileges, extending to all the inhabitants, British as well as Roman. Gibbon further says, that in the time of Hadrian and the Antonines, "the most northern tribes f Britain had acquired a taste for rhetoric." rom the earliest times many roads were made r adopted; and—still compressing events—it may be sufficient to notice, that when the peculations of the commanders and the feeble and orrupt administration of the governors at the ime of Constans (six years after Constantine's death), had produced their natural results, and filled the highways with robbers, and the whole country with revolt and distraction, the northern tribes seized the opportunity to make a fearful inroad; and after repeated messages to Rome, Theodosius (temp. Valentinian, A.D. 367-70) was sent to restore, or rather to regain, the province. He is described by Gibbon to have marched from Sandwich to London, with "numerous veteran bands of Heruli and Batavians, the Jovians and the Victors; defeating on his way several parties of the barbarians, releasing multitudes of captives, and restoring spoils taken by the barbarians to the rightful owners." The citizens of London opened their gates to him, and "the prudent spirit and consummate art of the Roman general was displayed in the operations of two campaigns, which successively rescued the province from the hands of a cruel and rapacious enemy. The splendour of the cities and the security of the fortifications were diligently restored by the paternal care of Theodosius." He sailed round the island, subduing all he met; established a new province, which he called Valentia; and, as the homely phrase is, made a thoroughly good job of it.

Splendour of the cities seems almost an exaggerated term, but it may be justified, when we recollect the remains of several noble villas that have been found; one containing seventy-four apartments, and measuring 630 by 335 feet; and when we notice that Gibbon further says: "Every production of art and nature, every object of convenience and luxury, which they were capable of creating by labour or procuring by trade, was accumulated in the rich and fruitful province of Britain." (Chap. 25.) Making every allowance for pomposity of style, all this shows, at all events, that Britain was much prized, and evidently in a highly civilized state at this time (A.D. 370).

The evidence as to the exact time when Christianity was brought into Britain is wanting; it must, however, have existed here before the time of Diocletian, since St. Albans and St. Amphibalus, and two others, Julius and Aaron, are said by Bede to have suffered martyrdom under the persecution of that emperor; however, Christianity was thoroughly established under Constantine, when it became the religion of the empire (306-37); and in A.D. 314 three British bishops attended the synod of Arles, viz. Ivor, or Eborius, of York, Restitutus, of London and Adelfius, *de civitate colonia Londinensium* (supposed to be Caerleon). British bishops also attended councils of Nice, A.D. 325; Sardica, A.D. 346; and of Arminium.

Gibbon says,—"The British church might be composed of *thirty* or *forty* bishops (we have twenty-two now), with an adequate proportion of inferior clergy; and their want of riches, for they *seem* to have been poor, would compel them to deserve the public esteem, by a decent and exemplary behaviour." He further says,—"The episcopal synods were the only councils that could pretend to the weight and authority of a *national* assembly." (Chap. 31.) It would seem by this that the power of priestcraft, notwithstanding the general good behaviour of the priests, was quickly established.

To the above I will merely add the summary of the laws and government under the Romans, and then proceed to the next period. After narrating the final and successful revolt of the Britons—*i.e.* Anglo-Romans—against the imperial yoke, and also the *subsequent* one of the Armoricans (inhabiting the maritime countries of Gaul between the Seine and Loire), he proceeds to say,—"This revolution dissolved the artificial fabric of civil and military government, and the independent country, during a period of forty years, till the descent of the Saxons, was ruled by the authority of the clergy, the nobles, and the municipal towns. Zosimus, who alone has preserved the memory of this singular transaction (and who lived A.D. 410), very accurately observes that the letters of Honorius were addressed to the *cities* of Britain. Under the protection of the Romans, *ninety-two* considerable towns had arisen in the several parts of the great province; and amongst these thirty-three cities were distinguished above the rest by their superior privileges and importance.

"Each of these cities, as in all other provinces of the empire, formed a legal corporation, for the purpose of regulating their domestic policy, and the powers of municipal government were distributed amongst annual magistrates, a select senate, and the assembly of the people, according to the original model of the Roman constitution." (Chap. 31).

We ought to notice, that previously to this time Gaul had been overrun by barbarians, whilst Britain, protected probably by its insular position, was *not* so invaded, and consequently did not lose civilization; indeed, the Britons had the power to assist in its defence by sending 12,000 independent British soldiers into Gaul to the assistance of the Emperor Anthemius (about A.D. 467), even after the Saxons had first appeared here.

Before discussing the question as to the works left by the Romans of this period, I will finish my tiresome task of recapitulation, by glancing at the events which took place under the Saxons, and then come to the consideration, the main object of this paper, as to whether the majority of antiquaries have fully apportioned the merits due to these people with respect to the works now extant.*

HENRY DUESBURY.

ON THE POLYCHROMY OF THE MIDDLE AGES.

FROM the remotest ages of antiquity the application of colour has been numbered among the arts. So universal, so general, so apparent is its adaptation from nature, that we must seek for the laws which governed the earliest schools in the works of nature herself. Every age of the world might afford a theme for the principle on which their use of the polychromatic art was based, and the means employed for the object: it is, however, to the Mediæval Ages to which our attention is to be now more immediately directed.

While every age and country has possessed its own distinctive mode of building, characterized by a spirit embodied under widely differing and incompatible forms, the appliances of colour fall under one law, and the same combinations that impart elegance and harmony to the exquisite contours and open surfaces of classic art, are also capable of producing an equally pleasing effect when found in the shadowed projections and intricate shapes of pointed architecture.

The attention which of late years has been directed to the study of our national monuments of the past, has removed the prejudices against the use of colour in restoration, inasmuch as it has established beyond doubt the fact of its use, and, as discoveries were from time to time brought to light, the almost universal use of the polychromatic art.

The object of polychromy is to heighten the effect of architectural decorations, by causing a more just subordination of the various parts than can be obtained by mere chiaro-scuro.

When the details of enrichment are minute or greatly removed from the eye, the use of strongly-contrasting colours is necessary to mark the various details and subdivisions, which would otherwise be lost; or to connect more elaborate with plainer portions of the same work. It is often also used to attract the eye to the more important portions of a building; and the beautiful effect of the brilliant lines, gilded prominences, and rich surfaces harmoniously toned with diaper, is known to every admirer of mediæval architecture.

It is probable that in the practice of classic antiquity the ornamented colouring of walls and ceilings, and perhaps in general even the detail of the arabesques, was left to the skill and fancy of the workman. The style of execution, in such instances as remain to us, exhibits great facility of production, accompanied by characteristics that distinguish them in a marked manner from the work of an artist. Yet in most cases there exists a certain concordance of parts and unity of effect, that uneducated taste would be unable to attain. Perhaps we should be correct in viewing the various specimens as diversified reproductions of a few types in fashion at the time, with which the workman would necessarily be familiar, and capable of applying, without

* To be continued.

further assistance than the general direction of the superior artist.

In point of fact, decorative painting was naturally subject to the same influence of the same external cause that affected art generally, and in the fourteenth and fifteenth centuries had evolved for itself a style essentially distinct both from the classic and revived manner. In Italy the style thus formed not only appears from the first to have had a looser hold, but was earlier abandoned for a style in imitation of the antique. All the productions of that country subsequent to the revival are conceived in a distinct spirit, and executed in a manner rapidly deviating from the practice of northern Europe. Decorative painting in the hands of the Italian school gradually ceased to be polychromy, and assumed a form subject to all the laws of pictorial composition.

It would be a matter of great difficulty to reduce the practice of polychromatic decoration to any precise rules: observation, and comparison of remaining examples, will however be sufficient for the architect to understand the spirit which guided the use of the art.

In Gothic polychromy, as in Gothic architecture, notwithstanding the fertility of detail that prevailed, there will be found during the epoch of any particular style, a vast number of instances in which the ancient architects have imitated themselves: continual repetition of the same idea will frequently be observable in particular districts, or if differing at all, only in the degree that circumstances or individual taste may have modified the original standard. The skill of the designers was exhibited in the reproduction of certain set forms, and in suiting them to particular localities or requirements, rather than the thirst for novelties: copies of a few ceilings, strings, shafts, and canopies, with their mouldings and enrichments, and a few examples of diaper, would form an alphabet of polychromy which would supply all the knowledge of ancient colour an antiquary could require.

In churches of almost the earliest date, traces of colour may be found, generally applied in a very rude manner, and frequently consisting of nothing more than yellow wash and red or black bands. This observation holds true of almost all the decorative painting that is supposed to have been executed during the prevalence of the Saxon and Norman styles: where any pattern has been attempted, it may be immediately recognised by the resemblance it bears to the sculptured enrichments of the period. Perhaps the earliest account of the art is to be found chronicled by Gunton in his "History of Peterborough." He says, "There was within these few years a door in the church (Peterborough), having the picture of Abbot Hedda and the king of the Danes, as it were expostulating the business." In the north transept of Winchester Cathedral there exists a singular relic of early painting: the arches of early Norman date have their massive masonry concealed beneath a coat of plaster, which retains indications of colour. On the side of one of the arches that face eastwards, are a series of radiating lines, drawn to represent the arch stones in a blood-red colour, in each of which are intersecting bands, forming a kind of cross saltire, which bands are dotted with spots of a deeper red: the opposite side of the arch is ornamented with a different design, but of the same colour, and a scroll pattern is also existing running round parallel to the arch. A nearer approach to the manner of a later age is shown in the nave of Rochester Cathedral, where the sculptured enrichments that fill the spandril spaces between the double arches of the triforia and the large single arch within which they are embraced, are picked out in different colours.* In some of these cases the enrichments resemble the flattened tooth ornament with which the walls of Westminster Abbey are covered. The whole of the Norman work in Rochester Cathedral appears to have been covered with colour: the stones of the shafts and arches were painted alternately red, green, and yellow, the whole face of the stone being filled by the same colour, not distinguishing the mouldings. In the south transept, the date of which is early in the thirteenth century, a similar system has been adopted.

* See View in present number, p. 517.

Where the stones and not the mouldings are distinguished, similar to the Lombardic churches of Italy, the stones of which are used of contrasting colour, the labels only are treated as distinct features: the tier of windows at the south end have each stone of the labels marked in a contrasting colour to those of the arches; thus, if an arch-stone be green, that portion of the label in contact with it will be red or yellow and *vice versâ*. During the former part of what is commonly called the early English period, that is, from 1189 to 1216, decorative painting made but little progress, and the extant specimens exhibit a similar mode to that formerly in use. Colours were used in masses without distinction of detail.

A screen of about this date against the north and south walls of the Lady Chapel at Winchester, has the centre columns of its tripled shafts painted alternately red and black, the columns on either side of the centre being painted in the contrasting colour. In this case the colour on the columns extends to the adjacent hollow, without any other relief than a double band of black encircling those columns that are red, at about every foot in height. When painting was only partially introduced, as was the case in simpler works, such as churches in rural districts, red was the favourite tint used in the capitals and bases of the columns, and often appearing as a margin to the internal window jaumb, if the jaumb was without mouldings of the breadth of two or three inches, sometimes with a narrow black line running beside it on its outer edge.

Few traces of colouring of much greater interest will be found prior to the accession of Henry III. The paintings in churches of an early character were often executed at a later period, and this may generally be suspected when the decorations are of an elaborate kind, when no letters or costumes are represented to determine the precise date. Such decorations as we have alluded to, with a few figures on the plaster, of the chancel walls, under the east window and on the chancel arch, painted in red or black outline, a few sentences, and a ruder cross or two, are all that the art of the former part of the thirteenth century appears to have been capable of producing.

In the reign of Henry III. a great improvement in the art is apparent. In close connection with historical and imaginative subjects, and forming with them part of the same design, we find a more developed mode of decorative colouring applied, both to heighten the effect of sculptured forms, and in the shape of arabesques and diapers, diversifying plain surfaces.

A free and bold style in arabesque prevailed from the time of Henry III. until the close of the reign of Edward III. Bright and lively colours were applied in masses, the grounds covered with compositions of foliage and birds, animals and human figures, sometimes in one tint, sometimes in varied colours. One of the most beautiful designs in use was a pattern of vine-leaves, frequently drawn with remarkable freedom and elegance, in which the leaves, the tendrils, and the fruit, are represented in red and green tints, with various coloured birds nestling among the leaves: this is found repeated in groinings of this date; for example, in a piece of wall-painting in St. William's Chapel, in Rochester Cathedral, and under the canopy of the monument of Aveline, Countess of Lancaster, in the choir of Westminster Abbey. Various figures and devices are found incorporated with foliage in designs of this description, at some times free and in composition with the foliage, at other times displaying, within co'oured medallions, the faces of men and angels, full-length figures and emblems. The groined ceiling of Adam de Orlton's chantry, in Winchester Cathedral, exhibits, on a straw-coloured ground, among green foliage, with flowers, green and blue medallions, in which are painted the heads of angels surrounded by a nimbus: the groining ribs have their mouldings marked in various colours, and a running enrichment, in a chevron pattern, is painted in red and black on the centre moulding: the coloured mouldings of this date are often powdered with rosettes, or similar ornaments, in red, black, or gold; and it was not unfrequent to cover with a sculptured diaper even th mouldings that were intended to be painted.

Even at this period, however, when the *ensemble* of Gothic edifices was perhaps m gorgeously magnificent than at any other ti the antiquary will perceive a want of t nicety that distinguishes the work of a succe ing age. To the fifteenth century may ascribed the perfection of a system of Po chromatic decoration, which, if wanting so what in the striking and original character earlier work, exhibits art acting under the fluence of settled laws, with greater certain of effect, a vast improvement in technical sk and more elaborate variety in the designs.

The difference in the modes of painting th prevailed during the Decorated and Perpe dicular periods, shows itself particularly in t forms of the diapers, which at the later da are more set, with a frequent use of geometric patterns, and a greater minuteness in t colouring.*

JOHN WHICHCORD, Jun.

THE METROPOLITAN SEWERS' ACT CONTINUANCE BILL.

THE House of Commons went into committ on this Bill on 9th inst. when some discussi ensued, particularly on the power of borrowi 200,000*l.* to which the Home Secretary desire as he said, to restrict the heretofore unlimit power of the commission. Sir Benjamin Hs questioned the practical existence of any su unlimited power, and objected to give even t restricted power proposed. He sketched t history of the different commissions, and of t waste of money chargeable on them. Mr. Pe followed on the same side, and explained his ow connection with the penultimate commissio He complained that the state of the metropol was painful in the extreme. His two year experience had shown him that, for sixtee hours out of the twenty-four, the whole of t district south of the Thames was one huge ces pool, which ought not to be permitted to co tinue for a week. In the north of the metropoli the case was not much better. While he wa on the commission numbers of cases of typhoi fever, arising from insufficient drainage, and a of the most painful character, were continuall coming under his notice; and the commissio was unable to do what was necessary even fo giving temporary relief. The question now was what was to be done?

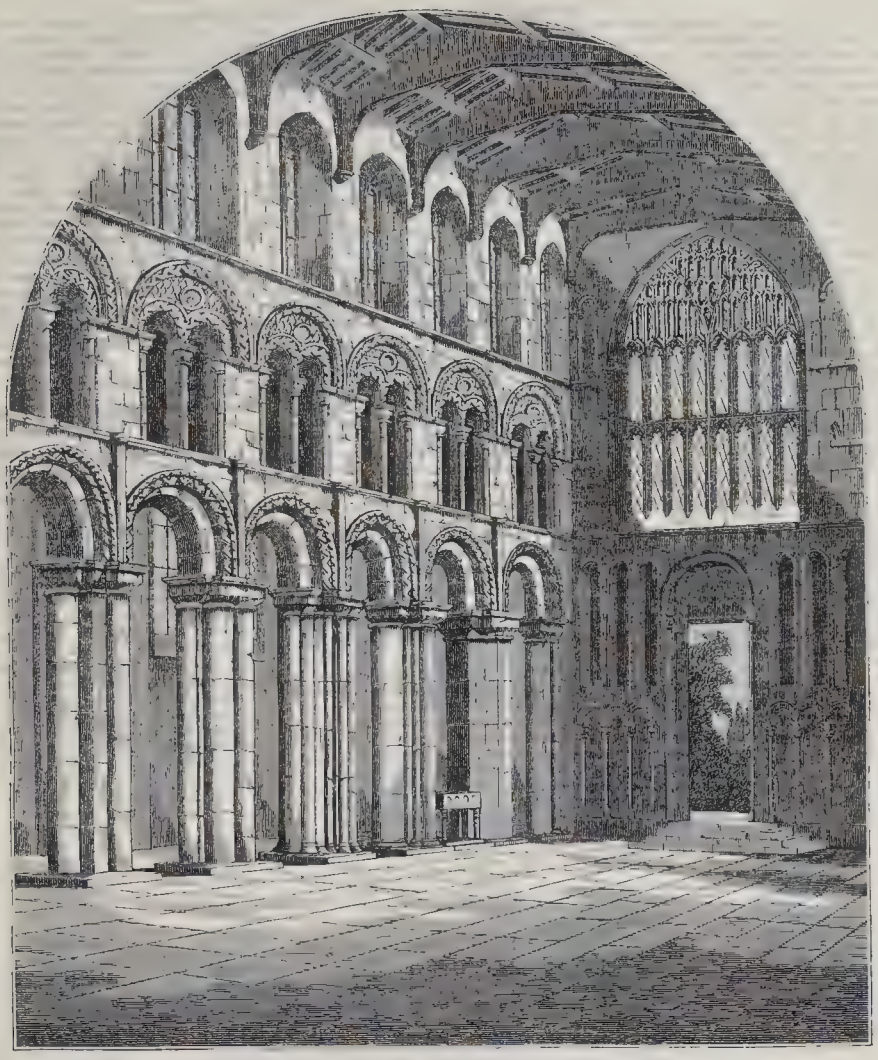
Sir John Shelley, Lord D. Stuart, and othe members followed, all of them denouncing th Sewers Commissions; and Lord Palmerston, o the question that the preamble be postponed assured the House that he would act on a sug gestion of Mr. Peto, that no works be under taken which were not in the first place approve of by Sir William Cubitt and Mr. Stephenson also, that the works should be of such a natur as to connect places that were not drained wit existing outlets; and that all the works shoul be such as might be brought into keeping an harmony with any general system that might hereafter be adopted. He would only add, that he believed there were about 2,000 miles of street in the metropolis; and he understood that there were only about 900 miles of drains. There were therefore at present 1,100 miles of street without drains; and, as Milton had described the evils of a populous city, when he said that it was a place where

"Houses thick and sewers annoy the air,"

he asked the committee to consider what must be the annoyance where there were "houses thick" without any sewers at all; yet such was the condition of a great part of the metropolis.

Sir J. V. Shelley objected that Sir William Cubitt had declared in favour of the Thames as the great natural sewer of the metropolis. He would prefer leaving the case in the hands of Mr. Stephenson. The preamble was then postponed, and the restrictive borrowing clause was agreed to, Mr. Peto recommending the expense of new sewers to be spread over thirty or forty years,—a suggestion which Lord Palmerston said accorded with the intention of the Commission.

* To be continued.



ROCHESTER CATHEDRAL: NAVE, LOOKING WEST.

INTERIOR OF ROCHESTER CATHEDRAL.

The annexed engraving, to accompany the account of Rochester Cathedral given in our last number, represents the nave looking west, with its fine Norman arcade and clerestory. The diapers under the larger connecting arches in the latter are very varied and beautiful. The interpolated perpendicular window at the west end is very discordant.

The transepts are Early English. A large chapel on the south side of the nave, known as St. Mary's, of the Perpendicular period, was restored last year at the cost of Mrs. Griffith, and has a compo-and-cast-iron aspect. The outside of the Cathedral has been sadly mauled and disfigured.

Embankment of Thames.—The Commons Committee have resolved, by a majority of ninety-four to twenty-seven, that a sum not exceeding 35,000*l.* be granted to her Majesty, towards defraying the expense of constructing an embankment and public roadway between Battersea and Vauxhall bridges; and an approach from Sloane-street to Chelsea-bridge.

THE AMERICAN INDUSTRIAL EXHIBITION.

INAUGURATION, JULY 14, 1853.

This 14th July, 1853, has been what we may call a Royal day in the Republic of North America. On this eventful epoch of industry, the midsummer day's dream of the Chaucer of the old world,—if we can call that a dream which the old poet so clearly and so strangely foresaw,—has been realized in a new world itself unknown to him. Here, in this good city of New York, shines his palace of crystal, and in it walk the *élite* of the land, sight-seers of industrial wonders, as they would indeed have been in Chaucer's time.

Had the New York Exhibition been the first of its order, it would doubtless have been regarded as magnificent even in its present state of immaturity; and to eyes which, unlike our own, had not the opportunity of witnessing the grand industrial archetype in London, it is magnificent, and will yet be much more so.

As regards the building, our readers have already had the advantage of *seeing* it through the telescopic columns of the *Builder* itself. As that view, however, or rather the descriptive detail of it, was at that time but speculative, and although the design has been generally carried out as intended, it may be worth while going over some of the principal details as they have been actually realized.

The building has been erected in Reservoir-square, at the northern extremity of the city. Its leading features are as follows:—

With the exception of the floor it is entirely of iron and glass. The general form is the Greek cross, with a dome at the intersection. Each diameter of the cross is 365 feet 5 inches long. There are three similar entrances, each 47 feet wide, that on Sixth-avenue approached by a flight of eight steps. Over each front is a large semi-circular fanlight, 41 feet wide and 21 feet high, answering to the arch of the nave. Each arm of the cross is on the ground plan 149 feet broad. This is divided into a central nave and aisles. The central portion or nave is carried up to the height of 67 feet, and the semicircular arch by which it is spanned is 41 feet broad. There are thus in effect two arched naves crossing each other at right angles, 41 feet

broad, 67 feet high to crown of arch, and 365 feet long; and on each side of these naves is an aisle 54 feet broad and 45 feet high. The central dome is 100 feet in diameter, 68 feet inside from floor to spring of arch, and 118 feet to crown; and on the outside, with lantern, 149 feet. The exterior angles of the building are filled up with a triangular lean-to, 24 feet high, which gives the ground plan an octagonal shape, each side or face being 149 feet wide. At each angle is an octagonal tower 8 feet in diameter, and 75 feet high. Ten large, and eight winding staircases connect the principal floor with the gallery, which opens on three balconies over the entrance-halls, and affords ample space for flower decorations, statues, vases, &c. The ten principal staircases consist of two flights of steps with two landing-places to each. The eight winding staircases are in the octagonal towers, which lead also to small balconies on the tops of the towers and to the roof. The building contains, on the ground-floor, 111,000 square feet of space, and in its galleries, which are 54 feet wide, 62,000 square feet more, making a total area of 173,000 square feet for exhibition purposes. There are thus on the ground-floor 2½ acres, or exactly 2 52·100; in the galleries, 1 acre and 44·100; total amount, 4 acres. The dome is supported by twenty-four columns, which rise beyond the second story, and to a height of 62 feet above the principal floor. The glass is one-eighth of an inch thick. The enamel, with which the whole of it is covered, is laid upon the glass with a brush, and, after drying, is subjected to the intense heat of a kiln, by which the coating is vitrified, and rendered as durable as the glass itself. It produces an effect similar to that of ground-glass, being translucent but not transparent. The sun's rays, diffused by passing through it, are deprived of that intensity of heat and glare which belongs to them in this climate.

The exterior has a light bronze hue, with ornamental touches in gold. The interior has a general tone of buff, or cream colour, in the cast-iron work, relieved by the three positive colours, red, blue, and yellow, in their several tints of vermilion, garnet, sky-blue, and orange (certain parts of the ornamental work being gilt),—to accord with the decoration of the ceilings. The only exceptions to the use of oil colours are in the ceiling of the American lean-to and in the dome: these decorations are in tempera on canvas.

Space need not be occupied in mere details of the ceremonial of the opening by General Pierce, the United States president, and the representatives, not only of most of the American states, but of most of the European. These details the readers of the *Builder* have probably already had described in the London papers. Let us therefore at once endeavour to give some idea of the contents, as they appeared when the opening did take place.

The exhibition is still only partly occupied: indeed, the *Literary World*, a New York paper, to which we have been occasionally indebted, estimates that not more than a fifth or a quarter of the screens and courts is yet occupied; but enough was seen to justify the fullest expectation of the most ample success, when opportunity has been afforded for the various cases to be unpacked and displayed. Nowhere was there any effort, on the part of the exhibitors, which was not an improvement on previous displays of the kind in this city, and in which good taste and the evident desire to do the best were not liberally exhibited. It was easy to be perceived that this was no show of the mediocrities.

Among the articles especially worthy of mention are the Florentine mosaics, consisting of slabs for table-tops, of black and white marble, with flowers, fruits, &c. inlaid. They are regarded as fully equal to the best specimens to be found at Florence.

The *specialité* of a sister city of Italy, the silver filagree work of Genoa, is well represented by a statuette of Columbus, formed, as it were, of woven silver.

A large collection of dinner and other services of china, from England, displayed great beauty and variety. A fine display of painted china was also made in the French department.

Near the tables spread with china, were several specimens of tiling for floors, an article combining beauty and utility in a high degree.

A sideboard of carved oak, with painted panels and carvings, representing game, wine, and fruit, executed in New York, is worthy of special mention.

The statuary occupies the space under the dome. In the centre is the colossal Washington, "in his habit as he lived," by Baron Marochetti. Near it is Kiss's Amazon, a statue of Columbus, one of Webster, a large marble vase, and many other works. Winterhalter's picture of the Royal Family of England hangs from the frame-work of one of the four compartments of the gallery overlooking the centre. Each of these had also stationed in front a figure, in a full suit of armour, from the Tower of London collection.

Several specimens of inlaid work, in wood, occupy a compartment near the centre. On another side are a number of artistic bronzes, and figures in terra cotta. Among the latter is a fire-place and picture-frame of great beauty.

The casts from Thorwaldsen's statues of Our Saviour and the Twelve Apostles are arranged in an amphitheatre, hung with dark velvet. These noble works of art will alone repay the visitor's pains. They form a beautiful feature in the exhibition, viewed from any of the numerous points, near and remote, at which they are visible.

RUSKIN, THE REFORMER OF TASTE AND ARCHITECTURE.

SIR,—Reviewers have given Mr. Ruskin credit for possessing a very unusual degree of eloquence; yet surely some of its flowers must have been picked up at piscatory Billingsgate rather than in academic bowers on the banks of the Isis. He flings coarse, vituperative epithets against everything that happens to incur his dislike,—sweeping denunciations against entire styles of architecture and other art; seemingly fancying that his mere *ipse-dixit* ought to settle the matter at once, and without further appeal. After pronouncing our English Perpendicular style to be "detestable;" after calling Renaissance not only "detestable," but "lascivious;" after abusing Claude, Canova, and I know not how many celebrities besides, he has the especial effrontery to talk of "the *base* Greek portico,"—for which he himself deserves to be styled a *base* slanderer,—a mere pretender in art, and an utter ignoramus in æsthetics. Or is Mr. Ruskin to be allowed to fling his firebrands, and hurl his venomous missiles, just as he lists, without opposition or contradiction?

Hardly is any particular forbearance or courtesy due to one who shows himself to be anything but particularly courteous or forbearing. Is his unscrupulous, if not altogether unwarrantable attack on the late Mr. Welby Pugin, while he was yet living, already forgotten?

In my opinion, Mr. Ruskin's ambition as a writer is by no means of the most elevated kind; his great aim apparently being to startle people, and make them stare at and talk of him. Even the titles he gives his books, and which usually partake largely of quackery, betray that pretty plainly. What are those of "Sheepfolds" and "Sea Stories" but mere "shams," and catchpenny artifices?—tricks of trade to which, it might have been presumed, an Oxford graduate would hardly condescend; and, least of all, one who professes to entertain an unconquerable aversion to everything that partakes of deception and disguise. Mr. Ruskin's peculiar taste in that respect is, however, matter of very little moment, as is likewise the studied peculiarity of his literary style; which last surely does not indicate sincere earnestness. A man who really wishes to instruct others, and is at the same time thoroughly master of his subject, endeavours to express himself as intelligibly as possible, without any of those affectations, coquetries, and mincing *minauderies* of language, wherein Mr. Ruskin shows himself to be so great an *artist*. In fact, with all his ultra love of nature, he does not care to adopt a natural style,—perhaps cannot afford to do so; for were his style stripped of all its trappings,—were all his capriole curvetings with his pen, his innumerable tirades and sentimental *hors d'œuvres* expunged, it would then be seen how very little of actual matter to the purpose there is in his writings.

With regard to his opinions and doctrines, if is incontestably certain that if Mr. Ruskin is right, we have all of us been completely wrong,—professional men and the public, teachers and learners, professors and students, alike.

During the three last centuries and more, all Europe has gone on in utter architectural darkness; fondly admiring, studying, and practising styles which are now suddenly discovered, by means of certain "lamps," to be "base" and "detestable." Glorious—certainly notable—as such discovery is in itself, one rather awkward consequence of it is, that it renders all previous doctrine and teachings a mere dead letter, and architectural publications mere waste paper; at any rate, must cause them to be looked upon as mere curiosities. It is therefore fortunate for the forthcoming treatise on architecture, in the new edition of the "Encyclopædia Britannica," that it may now take the lead among productions of its kind in promulgating, enforcing, and, if possible, clearly explaining the new and "lamp-lit" Ruskinian system of architectural taste and criticism. Or will Mr. Hosking be so barbarous as to ignore Ruskin altogether? *A propos* to the matter of ignoring, I have not met with a single notice of any of Mr. Ruskin's publications in any foreign periodicals.

Of a certainty, Mr. R.'s doctrines and criticisms are not likely to be at all better relished by continental architects than by those here at home, many of whom, although they do not care to come forward and oppose him, cannot but wince at the heavy blows which he has levelled at, if not yet actually inflicted upon, their chief works, by denouncing the styles they have adopted for them. "Yet this," to quote from what is said of him in the July number of *Blackwood*, "is the self-constituted *arbiter elegantiarum*, who has too long had listeners or readers,—writes bombastical confusion on what he knows nothing about,—and misleads people by the ears!" That he has but a very limited knowledge of architecture is evident from his own writings relative to it, since he lets it be plainly enough seen that he has neither eye nor feeling for aught in it save individual parts and matters of detail,—the carving of capitals, contour of mouldings, symbolic ornaments, incrustations with marble. To the value of artistic composition, general character, and effect of *ensemble*, he appears utterly insensible, notwithstanding that they are of infinitely more importance in architectural design than those minutiæ of it which, whatever may be their merit, are so very rarely examined that they may very well be classed with what Mr. Ruskin himself calls "unnoticed fineries." Let me not be misunderstood: I am no advocate for inattention to detail,—quite the contrary, since it affords great scope for original artistic design; let careful consideration therefore be given to detail duly,—subordinately, not exclusively; whereas John Ruskin makes it the very "all-in-all" of architecture. Such and so peculiar is his critical vision that he sees nothing for notice in the architecture of St. Paul's but the festoons with their ribstone pippins; perceives nothing but *baseness* in a Greek portico; for which he deserves to be hooted at as a slanderer.

Z.

RAILWAY MATTERS.

THE project for a Subterranean Metropolitan Railway, some time since noticed in our columns, has now assumed the shape of a sanctioned measure, the Bill authorising its formation having been passed through Parliament. It will run from the lower end of the Edgeware-road to King's-cross, a length of 2½ miles, with stations at about each quarter of a mile. The charge for the whole distance will only be twopence. The carriages will be lighted. In twelve months it is expected the line will be in full operation. A few such lines might settle the question of central connection, while, at the same time, settling the omnibus and cab fare questions. The capital for the execution of the work is set down at 300,000*l.*: a responsible contractor, it is said, has undertaken it at considerably less, and a guarantee of 6 per cent. for twenty years on the capital expended is said to have already been given.

The new central station at Birmingham is rapidly progressing under nearly 200 workmen. The building will contain no less than 122 rooms and offices, including a refreshment-room, about 73 feet long by 34 feet broad, and hotel accommodation to the extent of seventy chambers, with apartments *en suite*. Some alterations have been made in the original plan. The great iron roof of the station is proceeding. Here, also, considerable alterations have been made. It is now proposed to extend the roof to the mouth of the tunnel at Worcester-street. There it will terminate in that direction with a glass gable screen, divided into arches. By this extension the roof, which is 212 feet across, will be about 1,000 feet long; but, according to the Birmingham *Journal*, there is a still farther extension of station room contemplated in the direction of Swallow-street.

The new station, at Heaton Norris, is rapidly approaching completion. It is said to be a commodious structure, worthy of the London and North-Western Company, as it has raised the borough of Stockport to a level with other principal towns on the line, being equal in its appearance to any other station not being a terminus. Besides an office station, there is a shed equal to all requirements. The old building will be converted into offices for warehousing purposes. The estimated cost of the new building is 3,000*l.*

The tunnel through the Alleghany Mountain, to facilitate the construction of a new trunk railway into the Western States of America, was holed through on 31st January last. It is 3,670 feet in length, and had three shafts sunk in the entire distance, besides working from the ends. Great difficulties have been experienced from a superabundance of water, loose strata, falls of roof, &c. but the contractors, Messrs. John Rutter and Sons, and Mr. T. Seabrook the engineer, have overcome every obstacle, and so far it is successfully completed. Mr. T. Rutter, as surviving partner, now directs the operations.

PROVINCIAL NEWS.

Colchester.—The new Grammar-school, in Lexden-road, was opened on Thursday in last week. It is mediæval in style, and is built of red brick, with Bath stone dressings, and will accommodate eighty boys, including twenty boarders. The school-room is 41 feet in length, by 20 feet 6 inches in width, and 16 feet in height. The ceiling is panelled in wood. Attached to the school-room is the residence for the head-master, including entrance-hall, drawing and dining-rooms, library, four bedrooms, dressing-room, attics, with kitchen and other offices. The ground-plan embraces a frontage of 103 feet, and the least elevation of the house is 50 feet. There is an embattled parapet to the house, and bell-turret to the school-room. The foundations were laid during the latter part of last August, and the fabric was erected under the direction and superintendance of Mr. Henry W. Hayward, of Colchester, the "architect and builder" to the trustees.

Uttoxeter.—The tender of Mr. Evans, of Ellastone, it is said, has been accepted for the erection of the proposed town hall and the formation of the "Smithfield," as it is called. The demolition of warehouses, &c. on the site has commenced.

Lytham.—The endowed schools are being rebuilt at the expense of the endowment connected with St. Cuthbert's, the parish church. The design is by Mr. E. T. Owen, of Leicester, architect, and consists of boys' and girls' schools, and teacher's residence. These parts will be so arranged as to form three sides of a square, the centre surmounted by a bell-tower. The chief stone of the building was laid by Mrs. Clifton, of Lytham Hall, on Tuesday in last week. The Rev. B. B. Robinson, the incumbent of Lytham, concluded the proceedings by an invitation to the workmen to supper, at which he presided.

Bordesley.—The foundation-stone of the new schools in connection with Trinity Chapel, Bordesley, was laid on Monday in last week by the vicar of Aston. The building is intended to accommodate 400 children, and is to be erected by Mr. Heywood, of Bordesley, from the designs of Mr. Bateman, architect. It will comprise a boys' and girls' school, each 54 feet by 24 feet, and four class-rooms, each 16 feet by 12. Owing to the nature of the ground, the boys' school will be approached from a railed area, and will be lighted from the side. The girls' school will have a stained timber roof. The elevation is of ecclesiastical character, and consists of a centre, 45 feet high by 27 feet broad, pierced with a square-headed window of ten lights, and terminating in a bell-turret, finished with a cross. The main edifice will be relieved by wings, containing the doorways of the respective schools. The design is intended to be carried out in red brick, with stone dressings. Space has been secured for a master's house, for which a design has been furnished.

Stockport.—On Saturday week, the chimney belonging to the Heaton Mersey Cotton Works, which has been in the course of construction for several months past, was completed. It is 90 yards high, 26 feet at the base outside, 18 feet inside, summit 17 feet outside, with a circumference of 9 feet 4 inches inside, and contains 700,000 bricks.

Dukinfield.—On Saturday last the workpeople employed in the erection of a new mill belonging to Mr. Wainwright, at Dukinfield, partook of a repast at the Globe Inn, having completed the building to the roofing. Mr. Drinkwater, clerk of the works, occupied the chair, and Mr. Coffey, master bricklayer, vice-chair. Messrs. Sigley are the contractors. The mill, which is 130 feet long by 94 wide, and four stories high, and the warehouse, which is 82 feet long by 48 wide, was commenced on 20th April last.

North Shields.—The various streets in the town, says the local *Gazette*, are now being measured with a view to the entire drainage of the principal thoroughfares, but it will be Christmas before the works are fairly commenced.

Sunderland.—The new theatre is to be built in Bedford-street, and will be commenced this autumn. Mr. Middlemiss, of Sunderland, is the architect.

Darlington.—The church of St. John, situated at the bank-top, Darlington, was consecrated on Saturday in last week, by the Bishop of Durham. It is of the Early English style, and will seat 620 persons, the whole being open stalls. It has a district assigned to it under Sir Robert Peel's Act. The cost of the building has been about 4,000*l.* the whole of which has been raised with the exception of about 250*l.* It was originally designed to place in the tower a spire 160 feet high, but abandoned for want of funds. There is a peal of five musical bells. The church consists of a chancel, with vestry at the north side, nave with north and south aisles (the latter with a porch), and a tower at the west end, which opens to the nave by a lofty arch, beneath which is a stone screen for the support of an organ; but this, like the spire, is yet wanting. Under the east window is a reredos of seven trefoiled arches. The roof is open, the nave arched, and the chancel canted. The stained glass in the great east window is arranged in circular and vesica-formed medallions, on which are represented Moses, the Raising of the Impotent Man, St. Matthew, the Nativity, the symbol of the Trinity, the monogram *I.H.S.*, St John, with his symbol the winged Serpent in a Chalice; the Last Supper, St. Mark, the Ascension, St. Luke, and the Crucifixion. The side windows of the chancel and the clerestory lights are filled with various quarried patterns. The east windows of the aisles contain figures of St. Peter and St. Paul, the amount for which was raised by the Misses Benson. The tesselated pavement within the communion-table was presented by Mr. Herbert Minton; the communion-plate by Mr. Robert Henry Allan. The architect, Mr. John Middleton, presented the pulpit, which is composed of Caen stone.

Dundee.—On Thursday, in last week, the foundation-stone of a new and larger edifice than the church presently occupied by St. Paul's Episcopal congregation, was laid. The plans of the church are by Mr. Scott; the style being the Decorated, but modified by some local peculiarities of the ancient architecture of Scotland. It is expected to hold about 800 persons, without galleries. The estimated cost of the building is about 9,000*l.* exclusive of the ground.

THE LABOUR QUESTION.

A MEETING of the operative masons of London was held last week at St George's-hall, Southwark, to receive a report of the labours of the "Nine Hours' Committee." This was the tenth of a series of meetings held in the metropolis for the furtherance of their object. Circulars had been sent to all the master builders requesting their co-operation, and, in some instances, we hear, favourable answers had been received. Several resolutions were passed, pledging the meeting to pursue the system of agitation adopted. The meeting was addressed by Messrs. Turner, Wood, and others, who stated, that while other portions of the building trades were striking for an advance of wages, they preferred to seek, by amicable arrangement, the shortening of the hours of labour.

The Operative Joiners' Society at Bolton lately gave notice that they would leave off working unless their employers ceased to send their timber to be cut at the saw-mill of Messrs. Goodwin and Sharrocks. It is understood that this movement has originated from a fear on the part of the men that Messrs. Goodwin and Sharrocks are about to introduce machinery for joiners' work into their business; and that, by way of retaliation, it is sought to put a stop to their mill, at which timber from all the firms in the town, with one exception, is cut. The business to which the exception applies is extensive, and has a saw-mill of its own, machinery for joiners' work being also used there; but most of the men employed are non-society men, and consequently the firm have scarcely been disturbed in the matter: a few who were in the society turned out, but have recommenced working. It is said that the demand made upon the masters generally cannot be acceded to, but that, on the contrary, each employer feels it necessary to adopt the machinery as soon as possible, in order to meet competition.

The strike of the joiners of Leeds has not yet terminated, though several of the masters have conceded the terms asked by the men. Some of the operatives are still on strike, their employers refusing to grant the hour asked for Saturday afternoons. But the stonemasons are now in the field, asking for shortened hours of labour; and it is expected that the bricklayers, plasterers, plumbers, and painters will follow. The *Leeds Intelligencer* reports, that on Thursday evening in last week a meeting of the masters engaged in the building trade was held in the Music Hall, to consider the present position of the trade, and devise means for its protection. There were between sixty and seventy masters in the various departments of the trade present, and some discussion took place, after which it was resolved by the majority, "that the hours of labour be (as at present) 59½ per week; that it be left with the masters to make their own arrangements with the men by paying them on Friday or otherwise, so that the men may leave their work punctually at five o'clock on Saturdays." This, it was argued, would meet the whole case, as the men would thereby actually leave the shop earlier than if their work ceased at four, and they had to be subsequently paid. To this, however, it was objected, on the other side, that the men would insist upon leaving at four o'clock, and some masters who had conformed to that regulation declared that they could not submit to any resolution which would involve the forfeiture of their engagement with their men. The masters are thus disunited. On the other side, the operative joiners and carpenters have not been idle. They have held a meeting, when resolutions were passed pledging the trade to adhere to their original demands. The joiners' committee regard the strike as being virtually at an end, as of the whole number of joiners who originally struck, there are but twelve who remain out of employment. Not that the masters have all given way, but the men (whose employers refused to concede the hour on Saturdays) have obtained work elsewhere.

"We are very sorry," says the *Glasgow Reformers' Gazette*, a staunch friend to the working classes and the poor generally, "to find that there has been a strike of the mason trade in this city during the last and current week; but we hope it will not continue for another, as these strikes are never beneficial to anybody connected with them. The working man generally suffers to gratify the speechifying propensities, or worse foibles, of some black discontented sheep or other in the trade. There are always ring-leaders in every strike, and these are the parties who contrive, somehow or other, to take care of themselves and leave the simpletons they have infected to starve, or shift for themselves as they best may. This has been the case in almost every strike in this city for the last twenty years."

In reference to the labour question generally, we may here note that Lord Palmeston's Bill to alter and amend the Act which prohibits the payment of wages in goods, enacts that the artificer in any of the trades enumerated in the above Act is to have complete disposal of the entire amount of his wages, and

that if any goods or merchandise in which the employers have any interest be paid in lieu of wages, and the wages be stopped in payment thereof, or if they are paid otherwise than in the current coin of the realm, the transaction is illegal, null, and void, and subjects the employers to heavy penalties. Other clauses of a forcible kind are directed against the truck system.

HANDWROUGHT IRON AND BRASS WORK.*

The beautiful portion of a gate of handwrought iron in the accompanying engraving is from the Church of St. Lambert, Luneburgh.

The wrought-iron locks are characteristic specimens; that at the top of the cut is from the Hotel de Ville, at Bruges, and has an exceedingly rich effect, the iron foliation, &c. being relieved by a tint of deep crimson. May we suggest in passing, that at the present time we are still too sparing of the judicious application of colour to our art-manufactures.

The other lock, of the fifteenth century, in the *Musée National de Cluny*, is a cunning piece of "handiwork." We can imagine the pleasure with which the ancient artist fashioned the animal which forms part of the design, and also the delicate reliefs and forms of the tracery. Each of these examples shows artistic feeling in the workman, and it will only be when artistic knowledge is widely spread, that we shall equal the architectural accompaniments of former times.

It is well known that the practice of working in iron, silver, &c. was formerly a favourite pursuit amongst persons of condition. Sir Walter Scott, who was well versed in the history of those times, referring to this circumstance in the "Abbott," says, "My patron, the knight Avenel, used to compel the youth educated in his household to learn the use of axe and hammer, and working in wood and iron. He used to speak of northern champions who forged their own weapons, and of the highland captain Donald nan Ord, or Donald of the Hammer, whom he himself knew, and who used to work at the anvil with a sledge-hammer in each hand. Some said he praised this art because he was himself of churles' blood. However, I gained some practice, as the Lady Catherine Seyton partly knows, for since we were there, I wrought her a silver brooch."

The brass chandelier is from the "Hospice des Vieilles Femmes Nommé le Grahl," Luneburgh; in this district, now a province of Hanover, are preserved many examples of good work and design. The town of Luneburgh, the capital, dates as far back as A.D. 1200, and where there are several matters of interest, amongst them the royal palace, the Church of St. Martin, in the vaults of which are the monuments of ancient kings.

The iron screen of Queen Eleanor's tomb in Westminster Abbey, which has been a short time since fortunately restored to its original position, and which is known to be of English workmanship, will bear comparison in design and in other ways with the gates at Luneburgh, and it may not be uninteresting while mentioning this, to look generally at the ancient iron and metal which is still left in that building and in other parts of England.

There has been great destruction of iron ornament in the "Abbey;" we must therefore prize highly that which remains. The rich iron screen of Henry V.'s tomb for long lay in numerous pieces and was passing rapidly to decay in the "Blaize Chapel;" this has also been restored to its proper place, and the necessary repairs have been well executed by a neighbouring smith.

In the 10th vol. of Rymer's "Fœdera" is a copy of an order for the payment of 12*l.* to John Arderne, clerk of the works, for thirty-six tons of Caen stone, by him purchased to make the king's (Henry V.) tomb, and 23*l.* 6s. 8d. more for making the tomb. This order bears the date of the first year of the reign of Henry VI. In the same volume is also an agreement for the fabrication of the iron-work round the tomb,—made by Roger Johnson, smith, of London, and copied from the patent rolls of the ninth year (A.D. 1431) of Henry VI. "Not a doubt, says Neale, can be entertained but that the iron-work therein mentioned is the same *that still remains*, though Dent has erroneously assigned it to the time of Henry VII.; and it is evident that it could not have been put up till the front at least of the Chantry Chapel was completed. The ornamental parts of the gates which inclose the tomb are entirely allusive to the armorial insignia of Henry V. and the devices and workmanship of the whole are very curious."

"The recess in which the tomb is placed is nearly a square, inclosed by iron gates. The latter open under a handsome pointed arch of stone,—surmounted by an elegant arrangement of canopied niches turretted (including statues and other ornaments), and flanked by octagonal towers. The general pattern of the open work of the gate consists of small-sized squares, each containing four trefoils, and their impost or fascia is divided into thirteen compartments,—which have been painted alternately blue and red; on each blue space were placed three gilded *fleurs-de-lis*, and on each red space three gilded lions; below these, near the middle of the gates, were fixed alternately a row of swans and a row of antelopes,—but only one swan and two antelopes are now remaining."

Those who remember the Confessor's Chapel before the replacing of these gates, will be surprised how greatly the effect has, by that means, been improved. We gather the following particulars respecting the erection of the elaborate tomb of Henry VII. which is in many respects a fine piece of work, and which is particularly interesting, as showing an important transition in English architecture and art.

The care taken by Henry VII. to provide the richly-decked and diapered chapel at Westminster Abbey is well known. In his will, speaking of the tomb to be placed in the said chapel, the king directs, "that our Towmbe bee in the myddes of the said Chapell, before the high aultier, in such distaunce from the same as it is ordered in the plat made for the same Chapell, and signed with our hande. In which place we Wol, that for the said sepulture of us and our dearest late wif the Quene—whose soul God p'donne—be made a Towmbe of stone called touche, sufficient in largieur for us both. And upon the same, one ymage of our figure, and another of hers—either of them of copure and gilte, of such faction and in suche maner as shal be thought moost conuenient by the discrecion of our executours; yf it be not befour done by ourself in our daies. And in the borders of the said Towmbe be made a conuenient scripture, conteignying the yeres of our reigne and the daie and yere of our decesse. And in the sides and booth ends of our said Towmbe, in the said touche, vnder the said bordure, we Wol tabernacles bee graven, and the same to be filled with Ymages, sp'cially of our said avouries (certain patron saints), of coper and gilte. Also we Wol that incontinent after our decesse, and after that our bodye be buried within the said Towmbe, the bodie of our said late wif the Quene be translated from the place where it now is buried, and laid with our bodye in our said Towmbe; yf it be not soo doon by our self in our daies. Also we Wol, that by a conuenient space and distaunce from the grees of the high aultier of the said Chapell, there be made in length and brede aboute the said Towmbe a grate in maner of a closure, of coper and gilte, after the faction that we have begoune, which we Wol be by our said Executors fully accomplished and p-fourmed; and within the same grate, at our fete, after a convenient distaunce from our Towmbe, be maid a aultier in the honour of our Salviour Jh—u Crist, straight adionynying to the said grate."

Below the spot now covered by his tomb, Henry, who died on the 22nd of April, 1509, was buried with great pomp; and Torrigiano, the Florentine, who it will afterwards be shown was then in England, and had obtained the favour of Henry VIII. was employed to execute the work. The contract for the work is still in existence, and the sum granted to Torrigiano was 1,500*l.*

A contract was also made with Torrigiano, or Torrysany, as he is called in the English manuscript, to make an altar, as is shown by an indenture of some length, preserved among the archives of the Dean and Chapter of Westminster, and which carefully describes the various proportions and materials: for this it was covenanted that Torrigiano should receive 1,000*l.*

"It has been concluded," says Neale, in his "History of Westminster Abbey," "that the altar, &c. thus covenanted to be made by Torrigiano was that which stood within the grating, at the foot of Henry's tomb; but this is certainly a mistake."

Mr. Neale quotes from the "Burgley Papers," in the British Museum ("Bibl. Lansd." No. 11[illegible]—13). Mr. Neale shows that the altar must have been too large to be contained inside the boarding of the tomb. "It must, therefore," continues this author, "have stood without the screen on the west side; and is unquestionably the very work which Sandford engraved as the monument of Edward VI. who was known to have been buried at the head of his grandfather, underneath this very altar." This altar, according to Sandford, was destroyed during the civil wars.

The screen, or "closure," as it is called in the king's will, is wholly constructed of gilt brass and copper, having a stone plinth for its base. This screen, so different in style to the tomb itself, and corresponding closely in its forms and proportions with the architecture of Henry VII.'s Chapel, is more likely to have been the work of English than Italian workmen; it was certainly not the work of Torrigiano, who was not engaged upon the tomb until after Henry VII.'s death: and that king, speaking of the screen in his will, partly given above, says:—"There be made in length and brede aboute the said Towmbe a grate inmaner of a closure of coper and gilte, after the fastion that we have begoune." Formerly there were thirty-two statues of brass-gilt, representing apostles, saints, and martyrs, only six of which now remain. Widmore, in his "History of Westminster Abbey," says that in 1570 several things were stolen from the monument of King Henry VII.; and he supposes them to have been several "of the little gilded images belonging to it." The "thief," he adds, "one Raymond, was prosecuted by the Church." We will not enter into a particular description of the tomb and enclosure, which is so familiar to many, and which is undoubtedly a fine specimen of artistic skill and ingenuity. In addition to the tomb of Henry VII. and his queen, and other smaller works for Henry VIII. Torrigiano, that able yet ferocious artist, most probably executed the tomb of Margaret, Duchess of Richmond, also in Westminster Abbey. The history of this famous sculptor is most painful; his rage and violence would seem to have known no bounds. It was he who, in a fit of passion and jealousy against his contemporary, Michelangelo, assaulted him, and inflicted so severe a blow upon his nose as to crush and disfigure it for ever, and was, in consequence, obliged to fly from Florence to Rome. He afterwards served as a soldier under different generals; yet, although remarkable for great audacity, and having more the air of a rough soldier than an artist, he only obtained the rank of ensign, and seeing no chance of speedy promotion, left the army once more to practice the arts. Having executed some small bronze figures for some Florentine merchants, he accompanied them to England, where he obtained the favourable notice of Henry VIII. who employed him upon various works.

While engaged on the king's tomb, he returned to Italy, and endeavoured to prevail on Benvenuto Cellini (then only eighteen) and other artists to accompany him to England. Cellini, however, on hearing how brutally he had treated Michelangelo, at once refused to have to do with such a desperate character, and could never afterwards bear the sight of him. After finally quitting England, in 1519, Torrigiano visited Spain, where he executed several pieces of sculpture for convents, and amongst others, a Virgin and Child, so beautiful that the Duke d'Arcos commissioned him to make a copy of it. The sum offered seemed so immense that the artist thought he would be at once enriched, but was so much disgusted to find that the vast heap of coin sent home to him amounted to not more than thirty ducats, that he took a hammer and broke the figures to pieces. On this the duke caused him to be imprisoned in the Inquisition as a sacrilegious heretic. He was condemned by that tribunal to suffer death, but preferring starvation to an ignominious doom, he refused all food, and died in 1522.

* See page 424, ante.



ANCIENT METAL WORK.

CHURCH BUILDING NEWS.

North Hykeham.—A Lincolnshire paper states, that churchless North Hykeham is at length to have a church built. The parishioners in vestry meeting have resolved to contribute 250*l.* towards building the new church, and for this purpose that a church-rate of 2s. 6d. in the pound should be levied, the payment to extend over five years, so that a sixpenny rate will be collected annually until the whole sum is completed. The Bishop of Lincoln has contributed 25*l.* and 10*l.* have already been subscribed. The cost of the projected building will be about 1,000*l.*

Colchester.—Monday last was fixed for laying the chief stone of St. Mary Magdalene Church, when the members of the Masonic order were to walk in procession to the site. The foundations of the church have already been laid.

Cambridge.—Trinity Church has been undergoing a thorough cleaning, painting, and repairing, during the last three weeks.

Esher.—The new church now erecting in this quiet village is proceeding towards completion, Mr. Myers, the builder, under Mr. Ferrey, who is the architect. It is being built on an elevated site; and the tower, with the spire, will be 158 feet high. It is to have 850 sittings, with light galleries, and will be completed by September next. The cost of erection is estimated at 5,000*l.* The site was presented by Mr. J. W. Spicer, of Esher-place.

Shrewsbury.—A pulpit of Caen stone, from a design by Mr. S. P. Smith, of Shrewsbury, is being executed by him for a memorial of the late Rev. W. G. Rowland, of St. Mary's Church, where it is to be placed. The scaffolding of the spire of this church is now being raised, and the work of restoration of that portion of the edifice will be immediately proceeded with.

Taunton.—The foundation-stone of a new church, to be erected on the site of the old one, at Buckland, St. Mary, was laid by the Rev. J. E. Lance on Tuesday in last week. The church is to be built in the Decorated Gothic style of architecture, with flint walls and plain stone dressings, the walls to be lined inside with 4-inch Bath-stone ashlar. The architect is Mr. Ferrey; and the works are to be carried out by Mr. Davis, of Taunton.

Hereford.—Archdeacon Lane Freer has addressed the churchwardens of All Saints, in the *Hereford Times* and other local papers, complaining of their culpable neglect of duty in not consulting some architect of experience and skill as to the condition of the church, and more especially of the tower and spire, and threatening law proceedings to compel them to look to the public safety. The archdeacon says, in the address, that he gave them directions for the reparation of the battlements of the tower and removal of the angle-mouldings of the spire, because he felt convinced from the perished state of the stone their downfall was inevitable. "My fears," he adds, "have proved but too well grounded: stones of a very considerable size, and destructive weight, have already fallen: the danger increases daily." He has since urged them to comply with his directions, warning them of the danger, yet nothing has been done. The churchwardens, after a public challenge such as this, will surely not persist any longer in risking accident to life as well as farther damage to the church.

Drayton.—The parish church was re-opened a few weeks ago, after having undergone to some extent the work of restoration, having been newly roofed, re-pewed, and furnished with a new chancel and vestry, after the designs of Mr. Sidney Smirke, and at the cost of Sir Robert Peel. Having been waited upon by the churchwardens, and asked for a subscription, Sir Robert requested the plans to be carried out at his own cost. The work was intrusted to Mr. Woodcock and Mr. Mitchell, of Tamworth. The cost has been nearly 2,000*l.*

Fazeley.—The foundation-stone of a new church was laid here on 29th ult. The plans have been furnished by Mr. Stevens, of Derby; and Messrs. Lilley, of Measham, are the builders.

Sheffield.—The proposed new church of St. Andrew is to be erected at Cherry-tree-hill. The church is to contain 750 sittings, one-half free: the total cost to be 3,000*l.*

Skipton.—At a recent vestry-meeting as to the damage done to the parish church by a recent storm, a committee was appointed to obtain information from competent persons as to the repairs required, and the best way of making them; to procure plans, specifications, and estimates of such repairs, and to report the result.

ASSESSMENT OF MINES FOR THE POOR-RATE.

ACCORDING to the *Mining Journal*, the survey of the parish of Aberdare, in Glamorganshire, by Mr. J. D. Paine, in order to enable a re-assessment of its value to be made, involves a question of importance to iron manufacturers. This question is, whether the ironstone with which the district abounds, and which is raised in large quantities for the use of the blast-furnaces, is rateable to the poor-rate, or should be exempt. Mr. Payne has submitted the case to the Poor-Law Commissioners; and it appears that the ironstone of the Glamorgan mineral basin crops out on the Hirwain-common, the mineral belonging to the Marquis of Bute, as lord of the manor, and is leased to Mr. Crawshay, the eminent ironmaster. The method of working this ironstone deposit is to cut into the foot of the mountain, and remove the soil and ore, the latter being stacked in a convenient locality for use. The most extensive of these open patches is between 1,500 and 1,800 feet in length, comprising forty or fifty acres, presenting a front in two stages, in some places exceeding 100 feet in height. The material to this area and extent is open to the day; and, to all intents and purposes, may be justly termed an ironstone quarry. The highest legal authorities have concluded, that as for a long period the decisions have been uniform that all mines, with the exception of coal-mines, were exempt from assessment to the poor-rate, they would not disturb such course of law. Mr. Cornewall Lewis, M.P. in his evidence before the House of Commons, said he saw no reason why mines should not be rated as well as brick-making establishments, stone-quarries, &c. He considered the productions part of the value of the soil; but he acknowledged he was not aware of a case where such views had been acted upon. The Commissioners say they can only state generally, that the question raised is a very important one to the parish, and one in which the churchwardens and overseers would be justified in taking good legal advice from some professional gentleman of standing and reputation.

ROYAL ITALIAN OPERA.

THE lovers of fine music are indebted to Mr. Gye for the production of Spohr's *Jessonda*, supported by Madame Bosio, Madame Castellan, Formes, Belletti, and Lucchesi. It is not an opera calculated to attract the public and fill the house like the *Huguenots* or *Prophète*, but as a work of high mind, displaying the most elaborate instrumentation and majestic harmonies, it necessarily commands the admiration of those best qualified to judge. Bosio is a great acquisition as a singer, though not equal to her part in this opera as an actress. The scenery is all rich and appropriate,—the first scene, for example, the interior of a Brahmin temple,—but we seem to have a recollection of most of it. The season here is now drawing to a close, to the regret of all lovers of the lyric drama.

ROMAN WATER-PIPES OF POTTERY.

AT Leicester, they are opening the roads to lay water-pipes; and in the street near to the old spot called South Gates, there have been found in two places Roman red earth water pipes, of about 1¾ inch bore. The lengths are about 16 inches, and the joints are made with very hard white cement. The pipes are encased with coarse mortar, as hard as stone, and the direction is from west to east: the insides, of course, are quite dry and clean.

In a specimen obligingly forwarded to us by Mr. Thomas Lahee, the end of each pipe is made with a projection or shoulder, and passes into the next pipe an inch and a quarter.

ISLINGTON INFANT POOR ESTABLISHMENT.

WITH reference to the letter in the *Builder*, allow me to remark, that the gentleman with whom I am connected had no knowledge of, or anything whatever to do with, the committee empowered to adjudicate, neither was he interested one iota in the matter. His name or influence was never used, directly or indirectly; and for myself, I was altogether unknown to any member of the Committee.

The competition was a private speculation of my own, undertaken in perfect ignorance that any impediment existed from my connection with a trustee in other matters; had I been cognizant of the objection, I should, both from policy and integrity, have abstained from interfering.

I have thought it due, however, both to the committee and myself, to comply with their request, and retire from the position of success, but I must submit this to be a case in which "the measure of the law" is scarcely justice. WM. C. BIRCH.

A paragraph in your paper of the 30th ult. stigmatises the selection of Mr. Birch's design as the "grossest job ever recorded in the annals of competition," and states that the "canvassing was open and perpetual."

I am authorised by the committee who selected the design to deny, in the most unqualified terms, both these assertions.

Mr. Birch was a perfect stranger to every member of the committee, to whom his connection in business with one of the trustees was wholly unknown until yesterday morning, when, in consequence of the statement in your last publication, an explanation was required of him; and he admitted the fact, but alleged that his partner had allowed him to attend to the business for his own exclusive benefit. The committee at once decided that his partnership was an insuperable objection to his being employed, and they therefore required him to withdraw his plan from the competition, which he has done.

W. SPARLING, Clerk to the Trustees.

THE KENSINGTON POTTERIES.

IT is to-day only that I read in your paper of the 6th instant your notice of "Kensington Pigs and Potteries."

There is one mistake at the commencement which will fully account to those who are conversant with the business for the other mistakes that follow.

The great evil of the Potteries piggeries was *not* brought before the justices of the parish under the "Kensington Improvement Act," but under the Nuisances Removal Act, 11 & 12 Vict. c. 123. Under this Act the justices are empowered to give an order for the removal of the nuisance within *two days*; and in case of failure on the part of those complained against, an order upon the Improvement Commissioners to remove the pigs. Both these orders were given, and by both parties have been disobeyed.

The Improvement Commissioners applied last Tuesday to the bench for summonses against the pig-keepers, which the justices agreed to grant. These penalties against defendants, as sued for, will be heard on Tuesday next.

My name is mentioned, and I trust, therefore, you will allow me to say that both myself and my brother magistrates, "who all, and each, and every one" concurs in the amount of the nuisance, are ready and willing to give any orders that we are intrusted with; but we have no authority to remove the pigs *instanter*: the results rest with the pig-keepers in the Potteries in defence of their property, *versus* the Kensington Improvement Commissioners, backed by public opinion and such authority as the Act enables the justices to invest them with.

M. B. E. H. NIXON.

Bladen Lodge, Aug 10, 1853.

Miscellanea.

THE ESSEX ARCHÆOLOGICAL SOCIETY.—On 21st ult. the third meeting of this new society was held at the Castle, Hedingham, the seat of Mr. Ashurst Majendie, an interesting *locus quo* to archæologists. The society seems to be progressing rapidly, rather too fast, indeed, so far as regards papers to be read, of which there were more than enough. In the apartment where the meeting was principally held, various interesting articles were exhibited. Mr. Disney took the chair. The papers read were,—On the Castle itself, by Mr. Majendie: on Roman Sepulture, by the Hon. Mr. Neville; on the De Veres, by Mr. R. Almack; and on Little Maplestead Church, by Mr. Buckler. Mr. Harrold, secretary to the Northwich Antiquarian Society, gave an account of the excavations at Hedingham, which were visited after the meeting, as also the church, and the members afterwards dined at the Bell Inn.

THE GOVERNMENT WORKS AT ALDERNEY.—The *Jersey Times* gives an account of these works, from which the following particulars are condensed:—The works were commenced in 1847, and have made considerable progress; indeed, the breakwater is already so far advanced as to afford good and safe riding in the most stormy weather. The works now employ 700 men, and a number of new houses are springing up under the appellation of "New Town." The breakwater will consist of two arms; the western, 3,600 feet in length; the eastern, 1,400 feet; the opening between them on the N.E. 400 feet; in all, about a mile. The western arm is extending from 300 to 350 feet per annum, and the whole will be completed in about eight years. The area of water enclosed will be, at high tide, 236 acres, and at low-water spring-tides 157 acres. Within this harbour, which can be entered at all times, sixty men-of-war or large steamers can be moored in perfect safety. The only rock within the space is one half-tide rock, which will be removed. The depth at low-water varies from 30 to 70 feet. A quay, 25 feet wide, is formed 6 feet above high water; 15 feet above this is a promenade of 10 feet, protected by a parapet 4 feet high and 4 feet thick The top of the parapet is 26 feet above high-water spring-tides. At the close of the season (probably about the end of August) all the new work is faced with blocks built of stone and cement, 6 feet square by 8½ feet deep, weighing 12 or 14 tons. The fortifications of the island are to be constructed by the same parties as the harbour-works, and will be very formidable. Every bay and accessible point will be protected by fortifications on the most approved principles. The contractors have diving-bells for blasting under water, lime-kilns, saw-mills, steam-engines and steamboats. They have established a place of worship, schools, news-room, library, and resident surgeon for the workmen, who have formed a band of music among themselves, and have earned a good character for order and steadiness.

COMPARATIVE COST OF GRANITE AND WOOD PAVING.—The surveyor to the City Commission of Sewers, in a report which has been printed, gives much valuable statistical and other information as to the comparative merits of wood paving and granite. He considers granite to be far superior to wood both in convenience and economy. There are so many conditions and circumstances, however, taken into consideration in the report, that it is not easy to condense the result into a brief compass. Granite, as respects economy, only in fact ceases to be valuable or useful after it has been ground to dust,—and not even then, as our builders can testify; while wood not only lasts a far shorter time in the shape of paving on account of wear and tear, but also rots. It moreover requires constant covering with sand or gravel to prevent slipping. Granite, too, however, we often see, will become too smooth and slippery. Its economy and convenience, it appears, are beyond question; but still its noise is a great nuisance, which wood frees the streets from. The surveyor states a fact which we have often found to be called in question, but of which we have never felt any doubt,—that the traffic of London-bridge is, without any exception, the greatest in London, and indeed in the world.

TIME IN CONTRACT FOR VORTEX WHEEL.—Two cross cases have just been tried at Belfast in respect to a contract entered into between Messrs. F. and H. Russell, proprietors of a mill at Edenderry, and Mr. James Thomson, the patentee of a new vortex water-wheel, which Mr. Thomson engaged to provide for Messrs. Russell. In the action for damages from delay, Messrs. Russell, the plaintiffs, led evidence to show that the wheel was begun in July, 1852, but was not finished till January last, and was not put up till 4th of February, after which it appears to have worked till 7th July, when it was taken to pieces on account of something, as alleged, being wrong in the construction. Mr. Thomson had distinctly refused to enter into any contract as to time. His contract, moreover, seems to have been to provide the pieces and assist in the fitting up, the wooden casing not being altogether within the limits of his contract, except as to information to be given. In the action brought by Messrs. Russell, the jury could come to no decision as to the question of "a reasonable time," on which the action mainly turned. In the cross action, which was in fact for payment of the wheel, which had been refused on the ground of breach of contract and positive loss, a verdict of 200*l.* damages, with 6d. costs, was given.

SCOTTISH NATIONAL MUSEUM.—Government, it is said, have resolved to propose a grant for the erection of a suitable building for a museum in Edinburgh. The question of a site is now under consideration. The ground westward of the College, including the property occupied by the Trades' Maiden Hospital, according to a local paper, is the most likely to be selected. Dr. Lyon Playfair, it is added, has carefully examined this site, and another in St. Andrew's-square, connected with the Royal Bank.

NEW MAYOR'S OFFICES, MARKET, &C. AT STAFFORD.—Extensive alterations and enlargements of the assize courts have been determined on,—the present mayor's office, police-office, and butter-market, comprised in the Shire Hall premises to be removed. In the front towards the market square it is proposed to erect a handsome building, in the basement of which there will be cells for police purposes; on the ground-floor, police-offices, witnesses' waiting-room, and record-office; on the chamber story, mayor's office and magistrates' retiring-room. The front will be composed of stone and white bricks, surmounted with a massive stone cornice. The butter-market, at the back, is to occupy an area of 600 superficial yards, and to be entirely roofed over with skylights, to light the interior. The market at the other end opens into Crabbery-street. The contract for the erection of these buildings has been taken by Messrs. A. and G. Holme, of Liverpool, for 2,708*l.* to be completed by the 1st of February, 1854. The designs for these buildings are the work of Mr. C. Trubshaw, the county surveyor. The buildings on the Star premises have to be removed (except those occupied by the militia), and it forms part of Messrs. Holme's contract carefully to take down these buildings, and dress and stack up the materials, which remain the property of the county, such portions as are approved of by the county surveyor to be used in the new buildings. Messrs. Holme, as reported in the *Stafford Advertiser*, sent up a foreman to remove these buildings, and on pulling them down, on Monday week, a wall, 47 feet long, and 12 feet 6 inches high, suddenly fell, burying three men, two of whom were killed on the spot, and one severely injured. An inquest jury have returned a verdict of "Accidental death," adding that they considered due caution was not exercised in taking down the wall.

HAMMERSMITH CHURCH TOWER.—We are informed, but can scarcely believe it, that the churchwardens are covering the solid stone tower of Hammersmith Church with "*compo.*" Had this occurred twenty years ago we should have suspected one of the churchwardens was a plasterer, but of course we cannot venture to suppose such a motive would operate now. Some hundreds of pounds, we are told, have actually been spent in whitewashing it year after year, and now comes Roman cement to crown the absurdity. Surely, if not too late, some of the inhabitants will interfere.

ISLE OF WIGHT.—COST OF RIVER IMPROVEMENTS AT NEWPORT.—In respect to the tenders lodged, and the probable cost of improving the Medina, the *Hampshire Independent* of week before last has an article in reply to some remarks in another local paper on this subject, and in which it reiterates a previous statement that the lowest tender out of the eleven, for completing the river improvements, together with the expense of the Act, the surveys, &c. and neither including contingencies, nor the cost of superintending the works during its progress, by far exceeds the powers granted by the Act, which enables the corporation to borrow 15,000*l.* only to complete the undertaking. The amounts of the tenders are then given as follows:—

Name of Contractor.	River only.	Bridge only.	Total.
Hobart and Co.....	£28,000 0 0		
Diglie	23,700 0 0		
Ed. Smith, Portsea	18,321 0 0		
Myers.....	(For both)		£17,613 19 7
Crompton	(ditto).		16,775 0 0
Treadwill	16,300 0 0	£2,750	19,050 0 0
Hack and Son	15,677 0 0		
Whitmore	14,800 0 0		
Bower.....	13,676 0 0		
Wade and Co.	13,096 13 14	1,860	14,956 13 1½
Greenhall	13,306 16 0	1,100	14,406 16 0

Contractors for Bridge only.

Croft and Co	£2,029 0 0
Lawrence and Co.....	1,997 0 0
Bank Quay Company	1,934 0 0

The projectors, the *Independent* states, admit that the expense of obtaining the Act, the surveys, the engineering, and advertising departments, exclusive of contingencies, will swallow up at least 2,200*l.*; and it is laid down by the surveyor that every contractor must calculate upon at least 1,000*l.* for contingencies; while the Medina banks are continually slipping and sliding into the bed of the river, and how much they will do so, and how much it will cost to prevent them from doing so, when 10 or 12 feet of the middle of it shall have been abstracted, remains for experiment to ascertain; but, if the contractor refuses to keep the channel clear for a certain term of years, the council must add this expense also to the cost of the works. The town, it remarks, may "pay too dear for its whistle." The committee, it alleges, are frustrating the real efficiency of the plan by slipping off an abutment here, and slicing off a projection there, and are endeavouring to induce the surveyor to consent to a substitution of concrete, in the room of wood and stone.

WATER SUPPLY AND DRAINAGE WORKS FOR CHELMSFORD.—At the last monthly meeting of the local board of health, the committee reported as to tenders for the steam-engine, that they recommended the adoption of Mr. John Gilbert's, of Hackney-road, at 1,690*l.* Mr. Fenton stated that the sum was 40*l.* above his estimate.—The tender was accepted, the Clerk to take sureties. With respect to the reservoir, the committee recommended a piece of ground at the top of the hill, above Wood-street, to be purchased. It was left to the committee to carry out the purchase, as the surveyor said he wished to begin the work at once. The contracts for the supply of water-pipes, &c. were signed. The tenders of Messrs. Guest and Co. for hydrants and fire-plugs were recommended to be accepted. Mr. Fenton stated in his report, he had had an offer to supply thirty of these hydrants at a reduced price: they were only fixed and used for two months by the Sewage Manure Company. The tender was 155*l.*: it was accepted. For the cast-iron cylinders for the well, the tender of Messrs. Ransome and Sims, of Ipswich, at 222*l.* was accepted: and for the erection of the engine-house, boiler-house, and chimney, that of Mr. T. Moss at 324*l.* Tenders for the artesian well had been received, but had not been decided on. With respect to the contracts generally the surveyor in his report said —"The whole of the works, with the exception of the artesian well, the reservoir, and air-vessels, being now under contract, it will I have no doubt be satisfactory for me to state to the board, that the sum expended will be within the estimated sum, namely 13,400*l.*" The amount of the several contracts up to this time was 10,850*l.*; the estimated expense of the artesian well, reservoir, ground, and air-vessels, was 1,180*l.*; total, 12,030*l.*

THE NEW WORKHOUSE IN SALFORD.—This establishment, which was begun nearly two years since, is now nearly completed. It stands on a site in Eccles New Road. The establishment, which consists of five detatched portions, is built of brick with stone dressing, and is in the Elizabethan style. The front portion of it, which is to be used as union offices and receiving wards, is two stories high. The front of the buildings has stone facings. Passing through the centre of the front building and the court-yard, crossing a space of some 50 feet, to be laid out ornamentally, the main building is approached, which has an arcade entrance of polished Yorkshire stone, surmounted by a trellis battlement, cut and moulded. The front of this building extends to the length of 400 feet, and has a wing at each end, which comes forward from the main building 60 feet. The central portion is three, and the wings two stories high: the roofs are high-pitched, and have projecting gables and carved barge boards. On the centre of the building there rises a clock tower, with an octagon shaft. Last week's *Manchester Courier* contains a pretty full description of the whole buildings and of the general arrangements. The grounds round the main building are to be laid out in yards for each class of paupers, the aged and infirm and the able-bodied of both sexes. In the yards for the latter class workshops have been erected, which comprise, for women, washhouses, drying-houses, mending-rooms, and clean linen stores; for men, there are rooms provided for tailors, shoemakers, carpenters, painters, oakum-picking, &c.; and incorporated with the workshops for each sex is a cell for refractory paupers. In the men's yard there is a dead-house and *post-mortem* examination room. There are large airing grounds for boys and girls, with suitable workshops for each sex. To the right of the main building, at about 100 feet, are three erections, the infirmary, the building appropriated for idiots, and the fever hospital. To each of these buildings, which are two stories high, there are yards attached for each sex. Between them are washhouses for linen used in infectious disease. The front boundary of the buildings is to be inclosed by a dwarf wall, with iron palisadings, and the yards and garden are to be fenced in with high walls. The whole has a southerly aspect, and stands upon 7 acres of ground, 5 covered by buildings and yards. Ventilation in the various apartments is effected by means of perforated glass in the top compartments of the windows, and the whole establishment will be heated with hot-water pipes. It is expected that possession will be taken in September next.

METALLIC ORNAMENTATION.—Mr. T. Fearn, of Birmingham, has patented some improvements in ornamenting metallic surfaces, and in machinery and apparatus to be employed therein. These improvements are applicable chiefly to the ornamentation of tubes, pipes, and rods of metal, but can also be adopted for operating on strips or flat surfaces. In all cases, the ornament is produced by rolling pressure. The claim is for the general arrangement and application of the various parts set forth, constituting apparatus or machinery for the purpose of rolling or pressing engraved or embossed designs on the surface of metal tubes, rods, or strips.

THE NEW SEWERAGE OF BIRMINGHAM:—A numerous party of the borough magistrates and members of council assembled on Monday in last week, on the invitation of the mayor, at High Park Mills, Nechells-green, to inspect the progress of the works connected with the outlet of the new sewerage of this borough, and to witness the placing of a large iron tubular structure intended to convey the sewage matter under the canal at that point, in order to its transmission to the river Tame. After the works had been examined, the tube was moved, under the direction of Mr. Pigott Smith, into its place, by means of large wooden rollers. About 100 gentlemen afterwards partook of refreshment in a tent erected near the works. The mayor occupied the chair. Mr. Pigott Smith described the main features of the plan. The borough would be embraced by two main sewers, having one common outlet at the junction of the Rea with the Tame, quite removed from the building area of the borough, and at the lowest point of the area. Five acres of land had been purchased, on which are to be constructed tanks for the reception of the sewage. The bottom of these tanks will be 5 feet above the ordinary surface-water of the Tame, rendering unnecessary any engine-power. Here it was proposed to convert to profitable account the sewage of the entire borough. If it be found desirable to apply it in a liquid state, it could be delivered down the valley of the Tame and Trent, extending to the Humber, 100 miles in extent, the whole available by gravitation alone; or precipitation and solidification might be effected, and the manure rendered portable; or evaporation might be employed, by which a highly concentrated manure would be obtained. Provision had been made to obtain from the proposed works easy means of transit either by railway or canal. To intercept the mass of pollution now discharged daily into the streams of the borough, and to restore these streams to their natural state of purity, and effect the salubrious and profitable disposal of the polluted matter, would supersede the present pernicious system, that had for generations applied the manure to the air and the water, instead of to the earth, corrupting the uses of two elements, and foregoing the fruits of a third. He proposed that a company should undertake to construct and work the whole of the plant, paying the council a rent or share of the profits. The whole cost, exclusive of house drainage, Mr. Smith estimated at 150,000*l.*

IMPROVED COTTAGES.—Four model cottages have just been erected on the estate of Lord Leigh, at Westwood Heath. The *Coventry Herald* says that two end houses have each three bed-rooms, the centre houses two bed-rooms, containing about 100 superficial feet; and that there is also a sitting-room, kitchen, with boiler and sink, pantry well ventilated, and large cupboard. The sleeping rooms provide for separation. Each has its distinct access, with a window into the open air, and fireplaces. All the windows have stained-wood frames, and are glazed with squares. Each of the front doors is approached by stone steps, and sheltered from the wind by a stone porch. The fronts are built with dressed red bricks, the corners and foundations of the buildings with red sandstone. There is a large cistern under ground, with a pump, for soft water, besides an excellent well of spring water, also supplied with a good pump. Each house has at the back a substantial brick barn, with a large oven in the centre, capable of baking eight stones of flour: behind the barn are erected privies, piggeries, and dust-bins, all so arranged as to be convenient and not offensive. Each house has nearly an acre of garden ground, and the rents are so low as 3*l.* 5s. for the five-roomed houses, and 3*l.* for the four-roomed. Five others of the same kind are now in course of erection.

STRANGE DISCOVERY OF COINS.—Some workmen at the new Limerick markets (already referred to in the *Builder*) were digging opposite the Ordnance barracks, when a brown lacquered jar with a quantity of silver coins in it was turned up. They consist of dollars of French, Spanish, and Austrian dominions. One of Louis XIV. is in good preservation, dated 1670, with the monarch's head on one side, and on the reverse the arms of France with fleur de lis, and motto, "Sit nomen Domini benedictum." Another an Albert and Elizabeth, dated 1619, besides about 500 others all of silver. We believe the contractor, Mr. Ryan, purchased a large number of the coins.

WISBECH PARISH CHURCH COMPETITION.—At a meeting of the restoration committee, on the 1st inst. it was decided to adopt the plans of Messrs. Glover and Smith, of Norwich and Lowestoft: there were eight competitors. The whole of the old roofing is to be taken down, as well as the double-tiered galleries: the new roofing is to be open with carved spandrils and arched ribs. The new seats are to be open, with carved ends, and the pulpits, desk, and lectern, are to be highly ornamented. There will be accommodation for nearly 1,800 worshippers, without galleries.

VALUE OF LAND, HORNSEY.—In your journal of the 30th ult. which I have only just now been able —through press of business—to read, there is an article headed "Value of Land at Wood Green, Hornsey." Referring to the case of *Pearson* v. *New River Company*, it states that gentleman's claim to have been 4,280*l.* for 1 a. 2 r. 26 p. of land, and that it was supported by several eminent professional men, and my unworthy self, who conducted the case. Allow me to correct the impression this statement gives, and to say that the claim was not for the value of the 1a. 2r. 26p. only, but for the deterioration of the residue of a fine meadow of six acres, intersected by the Company's works, and also for a long length of building frontage on the high road. Had we put the dry value of the land, as your article would suggest, at the large price of 2,560*l.* per acre, a fresh impetus might have been given to the already rapid progress of land societies, but we might have risked being forwarded on to the Colney Hatch station, there to be detained until a lucid interval might justify the humane officers of the asylum in loosing us again upon the public.—HENRY R. ABRAHAM.

THE METROPOLITAN SMOKE NUISANCE BILL.—This Bill has been committed *pro forma*, by the House, which resolved itself into a committee for the purpose of considering the subject. Some opposition was evinced. Mr. Bass declared he had found it impossible to consume the smoke on his premises. Mr. Spooner moved the postponement of the Bill for the present session; but his motion was withdrawn on Lord Palmerston consenting that it be committed *pro forma*, to be afterwards recommitted. His lordship said he meant to introduce some important alterations in the bill. He proposed that instead of a penalty which should run on from day to day, there should be one from 2*l.* to 5*l.* for the first offence, 5*l.* to 10*l.* for the second, and for each successive offence to be doubled. He should exempt pottery-works and glass-works at present in existence from the operation of the measure. He further proposed that the Bill should not come into operation until the 24th of August next year.

CARDIFF DRAINAGE AGAIN.—Mr. Hawkeshaw having been called in to report upon the best mode of draining this town, has sent in a plan which is to be carried out, it is said. It consists of brick sewers communicating with the houses by pipes: the same outfalls have been adopted which Mr. Rammel proposed. Mr. Hawkeshaw's estimate is 30,000*l.* but he does not bind himself to that sum. His charges are to be 5 per cent. on the outlay, exclusive of the drawings: the works are to be proceeded with in the course of six weeks.

ARCHITECTURAL STUDENTS AT THE ACADEMY.—May I be allowed to suggest through the medium of your valuable columns, the great advantage it would be to the Royal Academy if probationers for the architectural studentship were permitted to attend in the evening as well as the day to prepare the necessary drawings. It is a well-known fact that many of our young architects would be glad to receive the advantages of the Academy if they were not forced either to lose their situations temporarily, or give up to study the time which otherwise they would spend in necessary annual recreation in the country. I understand that it is so permitted to artist probationers, and can see no cause for the prohibition to others.—AN ARCHITECT.

NEW HOUSES BUILT WITH OLD MATERIALS.—May I presume to call your attention to the fraud, daily practised by builders, auctioneers, and others, of selling as new, houses almost entirely constructed with old materials. Unfortunately, it is almost impossible to detect the deception, as new flooring-boards, stucco, plaster, paint, and whitewash effectually hide old bricks, rotten timber, and other rascality. Intending buyers generally pay more attention to the "ornamental finish," than solidity of erection, otherwise these houses would not meet with so ready a sale. —C. R.

ANCIENT FONT AND PAINTINGS DISCOVERED AT WINCHESTER.—During the removal of the old pewing of St. John's Church here, the workmen have discovered the ancient font beneath the flooring, broken into pieces. It is of very simple workmanship, and is formed out of a block of fine sandstone. It is supposed to be a work of the twelfth century. The font appears to have been supported on a central shaft surrounded by four small columns. The pieces are capable of being fastened together, and might be restored or repaired, and replaced in the interior of the church. During the repairs some mediæval paintings have been discovered on the walls of the church, which appear to have been originally covered with them. The subjects represented are the Crucifixion (cross St. Andrew's), with the two thieves. Figures of St. Bartholomew, St. Christopher, and other saints also adorn the walls. The Virgin Mary is represented, and there is also a painting of the martyrdom of St. Thomas à Becket. Most of the mural paintings are, however, in a very imperfect state, and to restore them would be impossible. Several sketches have been taken of them by Mr. Baigent, jun. according to our authority, the *Hampshire Advertiser*.

TENDERS

For erecting gasworks, laying mains, &c. at Southam.

Penny	£1,850	0	0
Reynolds	1,380	0	0
Emson	1,355	0	0
Deeley	1,350	0	0
Peters	1,350	0	0
Bowers	1,300	0	0

Each contractor provided plans and specifications, which were submitted to an engineer for examination and approval, and the tender of Mr. T. Reynolds, builder, of Southam, according to plans and specifications prepared by Mr. T. A. Hedley, C.E. was accepted.

For alterations and additions at 6, Clifford-street, Bond-street, for Mr. John Almond. Mr. T. Bradley, surveyor. Quantities supplied.

Pilgrim	£1,090	9	0
Allen	1,080	0	0
Chas. Smith (accepted)	868	0	0

For Commercial Travellers' School, Pinner.

Kelk	£19,126	0	0
Hyamson	18,670	0	0
Locke and Nesham	18,229	0	0
Ashby and Harmer	17,880	0	0
Hayward and Nixon	17,796	0	0
Holland	17,781	0	0
Little and Son	17,682	0	0
J. Wilson	17,551	0	0
Piper	17,474	0	0
Myers	17,439	0	0
Parker	15,186	0	0
Mills (Egham)	13,891	12	5½

For works at Belsize-park, Hampstead (sewers and roads). Mr. C. J. Richardson, architect.

Humphreys and Thirst	£14,816	18	0
Phillips and Gotto	12,700	15	4
John Coker	12,650	0	0
Friend and Hamil	12,498	0	0
John Baker	11,830	0	0
J. B. Oldham	10,954	14	6

TO CORRESPONDENTS.

"*Stains in Plaster from Smoked Bricks.*"—A "new Subscriber" asks for a preventive. We may refer him to Vol. IV. p. 465, where it will be seen that well-haired cinder-ash mortar was found effectual for thirty-three years; the purer the cinder-ashes, and the more of them used with the lime and hair, the better. Another method recommended is to cut out the plaster, if the stain be limited, and insert a slate before the brick, to be then plastered over. Others recommend the first coat of plaster to be like the ordinary cow-dung pargetting.

"H. G. C." "R. K. P." (time has gone by), "O. H." (happy to hear from him), "Islington Park," "A Smith" (it is not in our power to assist in establishing correspondents in business), "A Mason" (we regret that we cannot assist), "R. C." "O. Y." (yes), "O. S." ("rouse the press"), "Martin Mark" (will be made use of), "J. L" Hampstead (we shall be glad to see the paper), "H. G. C." "R. L. F." "Philo" (usually estimated from the surface of the ground), "Smoke," "E. W. T." (shall appear).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE. All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

MR. ALBERT SMITH'S MONT BLANC. Every Evening, at Eight o'clock, except Saturday. Stalls, 3s. (which can be secured at the Box-office every day from Eleven till Four); Area, 2s.; Gallery, 1s. A Morning Performance every Tuesday and Saturday, at Three o'clock.—Egyptian Hall, Piccadilly.

REPERTOIRE of MEDIÆVAL ART, 52, Wigmore-street, Cavendish-square.—MR. BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Metal work, chalices and patens, offertory, basons, candlesticks, coronas, branches, gas-fittings, crosses, lamps, monumental brasses, hinges, locks, handles, fire-dogs, lecterns, velvets, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver llama, painted candles, picture frames, tryptichs, banners, &c. &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kinds of embroidery supplied and arranged.

STEPHENS'S PATENT PROPELLING PENCILS.—A new kind of ever-pointed Pencil in Wood, lined throughout with lead, requiring no cutting, as the lead is propelled to the point by a novel, easy, and ingenious contrivance; is more economical than even the wood pencil, which is destroyed as used, whereas in these pencils the lead only is consumed, the pencil remaining as perfect as at first, ready to be refilled, and this is required only at long intervals. Prepared and sold by the Proprietor HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London. Sold by Booksellers and Stationers; where also may be had his Writing Fluids, peculiarly adapted to Steel Pens.

IMPORTANT to ARCHITECTS, SURVEYORS, ENGINEERS, and BUILDERS.—Messrs. BERRELEY and CO. beg to inform Gentlemen connected with the above Professions that their PATENT FLUID INDIAN INK, which is considered by the most eminent architects superior to any in use, in consequence of its superiority of colour, fluidity, and its easiness of eradication from drawing paper, may be obtained only from the Manufactory, 29, Albert-street, Camden-road, London. Forwarded carriage-free to any part of the United Kingdom, on receipt of the amount in postage-stamps. Sold in cased bottles, 8s. 6d.; double size, 5s.

Caution.—No agents appointed but what are announced in this paper.

MR. ROBERT WARD begs most respectfully to inform timber merchants cabinet-makers, gentlemen, and others, that he does not intend confining himself entirely to his Periodical Sales, but would be most happy to UNDERTAKE any COMMISSION that might be intrusted to him, both in town and country.—London, 8, Oxford-street, and Barmondsey New-road, Southwark, Aug. 9, 1853.

SALES BY AUCTION.

HYTHE, KENT.—TO BUILDERS and CAPITALISTS.—Important and extensive Sale of Marine Freehold Building Plots. TO BE SOLD by AUCTION (by order of the Mayor and Town Council of the Borough of Hythe, and with the consent of the Lords Commissioners of her Majesty's Treasury, for the purpose of erecting Public Baths, and carrying out and completing the various improvements now in progress in the above rapidly improving watering-place), by Mr. EDWARD HOBDAY RONALDS, at the TOWN HALL, in Hythe aforesaid, on MONDAY, the 29th day of AUGUST, 1853, at TWO o'clock in the afternoon (subject to conditions), the large and valuable tract of FREEHOLD BEACHY LAND, lying to the westward of the town, and immediately adjoining the sea on the south, and the outlands lately purchased by the Board of Ordnance for the Minié Rifle practice on the west, and also four other lots of valuable land, lying at the western extremity of the parish, containing altogether upwards of 43 acres and which will be divided, for the convenience of purchasers, as follows:—

Lot 1.—A Piece of Land, marked A on the plan, and numbered 1 to 12 inclusive, and containing about 9a. 3r. 24p. If an adequate price be not offered for this lot, it will then be put up in twelve separate lots.

Lot 2.—A Piece of Land, marked B on the plan, and numbered 13 to 24 inclusive, containing about 9a. 3r. 2p. If an adequate price be not offered for this lot, it will then be put up in twelve separate lots.

Lot 3.—A Piece of Land, marked C on the plan, and numbered 25 to 31 inclusive, containing about 6a. 2r. 2p. If an adequate price be not offered for this lot, it will then be put up in seven separate lots.

Lot 4.—A Piece of Land, marked D on the plan, and numbered 32, containing about 0a. 1r. 8p.

Lot 5.—A Piece of Land, marked E on the plan, and numbered 33 to 36 inclusive, containing about 4a. If an adequate price be not offered for this lot, it will then be put up in four separate lots.

Lot 6.—A Piece of Land, part of the block marked F on the plan, and numbered 37, containing about 0a. 3r. 28p.

Lot 7.—A like Piece, part of Block F, numbered 38, containing about 0a. 3r. 34p.

Lot 8.—A like Piece, part of Block F, numbered 39, containing about 1 acre.

Lot 9.—A like Piece, part of Block F, numbered 40, containing about 1a. 0r. 5p.

Lot 10.—A like Piece, part of Block F, numbered 41, containing about 1a. 0r. 5p.

Lot 11.—A triangular Piece of Land, numbered 42. Also the following Parcels of Land, part of the Outlands, lying at and near the western extremity of the parish.

Lot 12.—A Piece of Land, numbered 481 on the Tithe Commutation Map, situate on the north side of the Dymchurch-road, and at the western extremity of the parish, containing, by parochial admeasurement, 3a. 3r. 18p. or thereabouts.

Lot 13.—A Piece of Land, numbered 483 on the Tithe Map, situate on the north side of the Dymchurch-road, and the west side of the road leading to Burmarsh, containing, by parochial admeasurement, 2a. 3r. 38p or thereabouts.

Lot 14.—A Piece of Land, numbered 488 on the Tithe Map, situate on the east side of the road leading to Burmarsh, containing, by parochial admeasurement, 0a. 3r. 32p. or thereabouts.

Lot 15.—A Piece of Land, numbered 500 on the Tithe Map, situate on the north side of the Dymchurch-road, extending from the south-western point of land belonging to St. John's Hospital to a point near the centre of land belonging to Mr. Thos. Marshall, containing about half an acre.

The above presents a most favourable opportunity for the investment of capital, and the erection of marine villa, and other residences, the land being close to the town of Hythe, and in a high and dry position, commanding extensive and picturesque views by sea and land.

Hythe is an easy distance from London; the beautiful scenery around it is unsurpassed on the coast; the sea-bathing is most superior, and continues to attract an increasing influx of visitors, for whom more extensive accommodation is loudly called for: added to which, vast sanitary improvements have been lately carried out in the borough; a complete and effective system of arterial drainage has been perfected; new water-works, which supply an unlimited quantity of the purest spring water from the spring-head to every house, are in full operation; the roads have been improved; and other works are in progress which will render this delightful spot the most desirable and unique residence for visitors and inhabitants.

For further particulars, with plans of the property, apply to the Auctioneer; or to Mr. EDWARD WARRS, Town Clerk, Hythe.

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GREENWICH, STREET,
DEPTFORD, ILFORD,
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R. A. MARCH, Secretary

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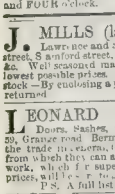
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ROBERT TUCKER, Secretary.

By her Majesty's Royal Letters Patent.

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Medieval Works, Memorials, Fonts, Screens, etc.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave-place, Pimlico.

MARBLE CHIMNEY-PIECES manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the Trade.

MARBLE WORK in all its branches, at a remarkably cheap rate, for HALLS, DAIRIES, LARDERS, &c. &c.

Circulars sent on application

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank

ITALIAN and GALWAY MARBLE QUARRIES. Depôt, Whitehall-wharf, Parliament-street, Westminster.

NOW LANDING at the above Depôt, ex *Persian* and *Omero*, from Leghorn:—

FIFTY BLOCKS of superior STATUARY, VEIN, SICILIAN, BLACK and GOLD, RIASSI, &c.

Also a cargo of superior Black Marble of all thicknesses and dimensions in blocks and slabs, and 15,000 cubic feet of St. Ann's.

Apply to Mr. FRANKLIN, Proprietor of the Quarries

P.S.—Just arrived, ex Penelope and Succedaneum, at Leghorn, two cargoes of FIFTY BLOCKS of very choice Statuary, Vein, Sicilian, Black and Gold, Sienna, &c.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marble, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Office, 8, Crescent-terrace, Millbank. Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons and others, to their stock of Portland, York, and Derbe Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Lath, Fire-cement, &c. &c. at the lowest possible prices for Cash. Portland Head-stones, Ledgers Slops, Landings, &c. cut to order on the shortest notice. Parpaulines to hire. A Stock of Scotch's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair. Fine Stuff, &c. Prompt attention paid to country orders

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.:—Good tooled York hire Paving, at 33s. per 100 feet (retail at 4½d. per foot), thicker ditto, at 40s. per 100 feet; very superior, 44s. ditto; thick ribbed Paving, in great variety of sizes, at 33s. ditto; Hurdle and Selected Slabs, of first quality; thick Selfaced Paving (viz. from 3½ to 4 inches); Sinks, large or small sizes, at 1s. 8d. per foot; Steps, Sills, 12 inch, and 18 inch Coping, all at very low prices; Dashes, Counters, and other Slates; Clay and Stone pipes, Chimney-pots, &c.—A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

BATH STONE OF BEST QUALITY

RANDELL and SAUNDERS, QUARRYMEN AND STONE-MERCHANTS, BATH.

(DEPOTS.)

Great Western Railway Station..... PADDINGTON.
Great Western Railway Station..... BRISTOL.
Hope-street, Mount-pleasant ..... LIVERPOOL.
Castle-fields ..... MANCHESTER.

List of prices at the Quarries and depôts, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts

GRANITE.—The Cheesewring Granite Company, of Liskeard, Cornwall, are now prepared to supply Granite of excellent quality, and the largest sized blocks. Prices may be ascertained on application to N. TREGELLES, 3, Pinner's-court, Old Broad-street, City, or to JAS. J. TRATHAN, Liskeard.

THE PIMLICO SLATE-WORKS. Patronized by Royalty the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—38 and 40, Upper Belgrave-place.

VALENTIA SLATE SLABS.—The Valentia Slate Company invite attention to their Slabs now supplied of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital various lunatic asylums, the Ordnance Works, Model Prison, Pentonville and other penitentiaries, Marine Floors in Bedfordshire and Herefordshire, Breweries the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

MACHNO SLATE and SLAB COMPANY, near FESTINIOG, NORTH WALES.—The Directors of the above company beg to call the attention of Architects, Slatemerchants, Builders, and others, to the great SUPERIORITY of their SLABS over those of any other quarry in the United Kingdom. They are of a beautiful and uniform colour, entirely free from sulphur, hardened to exposure to the atmosphere easily worked, and, from the nature of the vein, may be obtained of almost any size, and have lately been extensively used in the construction of slate houses for exportation to Australia. The Directors can strongly recommend the roofing slates for the excellence of their colour, durability, and the absence of that brittleness so common in the generality of Welsh slates. A reference will be required in all cases with the first order.—J. SWINTON SPOONER, Bewsergrove, near Llanwrst, North Wales. Manager.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, beg to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to ¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin

By her Majesty's Royal Letters Patent.

TO BUILDERS AND OTHERS.

SEASONED WOODS by the Patent Desiccating Process for SALE, at E. L. FULLER'S Depôt, 37, Wharf-road, City-road, Islington, and Honduras Mahogany, Wainscot, Hornbeam, Limetree, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANKS, DEALS, and BATTENS, &c. sawn on the most approved principle; Boards, &c. prepared, matched, and grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks, and their home free of charge.

Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing

PREPARED FLOORING.—ALFRED ROSLING begs to call the attention of Builders and Consumers generally to his STOCK of BOARDS, prepared in the best possible manner, and fit for present use; their superiority to the foot-boards generally sold being sufficiently evinced by the greatly increased demand. A. ROSLING is in a position to offer every description of Baltic and other deals imported into this country at the lowest possible price consistent with fair trading; and begs to solicit the orders of those who have not as yet favoured him, feeling assured he can offer them advantages which they will appreciate.—Southwark-bridge Wharf, Bankside.

FOREIGN TIMBER and DEALS of every description, at the lowest prices, for cash; and also Prepared Floors at the following prices, for the present month:—

1 inch Kellow or White	18s. to 20s.	per square.
1 inch ditto	18s. to 21s.	ditto.

Battens, 2s. 5d.; Deals, 4s. 6d.; and Plank, from 5s. 3d. per 12 feet. Paving Timber 80s. per load. Every kind of English and Foreign Wood direct from the docks.—Apply to Mr. MAY, 90, Lendenhall street

SEASONED FLOORING.—A large stock of dry YELLOW and WHITE FLOORING, prepared by improved machinery, always on sale, at the lowest possible prices at ARCHBUTT and ATKINSON'S, St. Pancras Saw Mills, Old St. Pancras-road.

A LARGE ASSORTMENT of WELL-SEASONED, DRY, PREPARED WHITE and YELLOW BATTEN FLOORING, also a large quantity of SCAFFOLD POLES, FOR SALE, at a low price, at DRUCE'S, No. 2 Wharf, Queen's-road West, Chelsea. Bricks, Lime, Cement, Sand, Plaster, Slates, and Slate Slab, Tiles, &c. on sale at the lowest remunerative prices. Goods landed and carted. Ladders for sale. Apply to H. P. DIXON and CO. as above. Great facilities for the prompt execution of country orders.

MAHOGANY.—TO COACHMAKERS and BUILDERS, &c.—JOHN NEWSON begs to offer to the Public about 30,000 superficial feet of 1-inch MAHOGANY, of very fine quality, from the Honduras, and has also a large quantity of WELL-SEASONED FLOORING, DEALS, PLANKS, &c. together with a large stock of Oak, Wainscot, Veneers, Mouldings, &c. at his Steam-power Deal-yard, Pimlico. Saw-mills on the Premises being constantly at work, offers great advantages to purchasers. N.B. About 150,000 good Suffolk Red Bricks for Sale, 34s. per 1,000, cash-price, on wharf.

WOOD MOULDINGS.—TO BUILDERS AND OTHERS.—All kinds of Wood Mouldings Cornices, Skirting Boards, Shaving Battens, and Panelled Laths supplied with the least possible delay, at prices hitherto never reached for quality, lower than any other house. The moulldings are from best dry pine; with patterns and prices, may be obtained of JAMES SIMMONS (successor to Messrs. Hollingworth and Co.), Paddington Moulding Mills, 3, North Wharf-road, Paddington.

MOULDINGS by MACHINERY.—ARCHBUTT and ATKINSON will forward their new and enlarged List of Diagrams, on receipt of four penny stamps (the price of the postage), St. Pancras Saw Mills, Old St. Pancras-road.

THE GENERAL WOOD-CUTTING COMPANY, TIMBER WHARF, SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, near Waterloo-bridge,

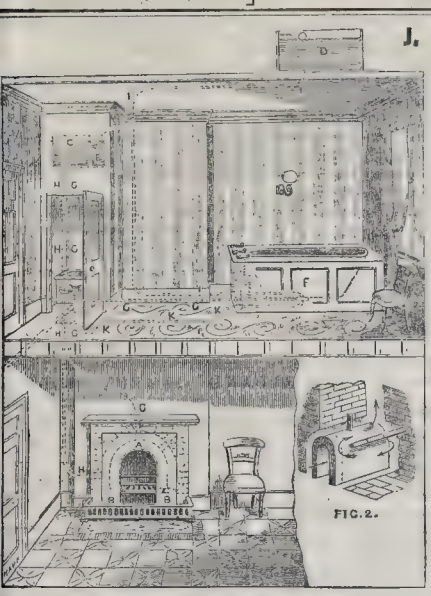
are prepared to supply timber and deals, &c. cut and uncut, to any extent at the current prices of the day. They keep a large stock of WELL-SEASONED FLOORING and MATCH BOARDS, which, being manufactured by themselves, they offer at the lowest remunerating profit. Buyers of timber, &c. from the company, will find their extensive saw mills a convenience for the immediate conversion of their purchases to any purpose which may suit them.

The Company beg leave to call the attention of the trade to their NEW MOULDING LIST, the largest ever published, and to state that, in addition to the numerous patterns therein delineated, their machinery enables them to execute every description of mouldings, from drawings, &c. with an accuracy and despatch which must insure satisfaction.

The moulding list, containing nearly 300 diagrams, with prices attached, may be had at the mills, or shall be forwarded on receipt of six postage stamps (the amount of the postage thereon)

TO BE SOLD, a Contractor's LOCOMOTIVE ENGINE and TENDER, in good condition. 14-inch cylinders, 24-inch stroke, driving wheels 5 feet 6 inches diameter.—Apply to R. M. SMYTH, Esq. 31, Parliament-street, Westminster.

J. TYLOR AND SON'S BATH APPARATUS.



To heat a Supply of Water for a Bath from an open Fire in a Hall, or any Apartment, either below or on the same level as the Bath.

A. Copper Saddle Boiler.

B.B. Stove Front, which covers the face of Boiler, and entirely conceals it from view.

In order to set the Boiler to the greatest advantage, a 4-inch Flue, if practicable, should be carried over it and stopped off along the middle of both sides (see fig. 2), to within about 6 inches of the front. The Fire will pass from the back, along the sides, over the top, and up the chimney at the back (see fig. 2). Nearly the whole of the boiler is thus exposed to the action of the fire.

For the convenience of cleaning the Flues, the Stove Front being screwed up can be readily taken down.

C. Cistern for Hot Water, having a small Feed Cistern *E*, supplied from the Cold Cistern *D*.

This Cistern can be made of Tinned Iron or any suitable material and fixed in a Water-closet as shown in engraving, or in any convenient position.

The overflow can be carried into waste of Bath, or any convenient outlet.

F. Copper or Tinned Iron Bath, having three Pipes for Hot, Cold, and Waste Water, as indicated by the engraved levers on the cocks. The overflow is carried into Waste Pipe.

G. Inch Pipe from top Pipe of Boiler, and standing up 6 inches above bottom of Cistern. A branch from this Pipe supplies the Bath with Hot water.

H Inch Pipe from side of Boiler to bottom of Hot Cistern.

These Pipes *G* and *H* should be cased in and well packed with sawdust, to prevent the heat being given off to the atmosphere.

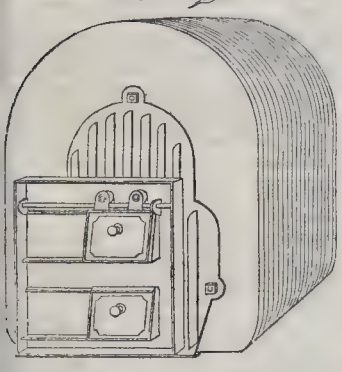
I. Inch Pipe to supply Cold Water to Bath.

K. Inch Pipe to carry Waste Water from Bath into Soil Pipe, or other convenient outlet, and must be well trapped before entering a drain.

For particulars of Shower Baths, and estimates for fixing ditto, see Catalogue.
Illustrated Catalogue showing every method of fixing Warm Baths, to be had on application.

J. TYLOR and SONS, Warwick-lane, Newgate-street, London.

Gill Stove.



For fixing underground

STUART AND SMITH,

ROSCOE-PLACE, SHEFFIELD,

SOLE PROPRIETORS & MANUFACTURERS

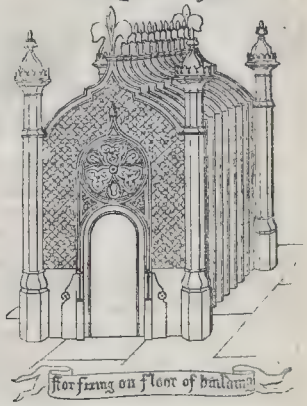
OF

THE GILL STOVE,

PATENTED BY THE LATE

JOHN SYLVESTER, Esq. C.E.

Gill Stove.



For fixing on floor of building

THE LONDON PARQUETRY

NOW MANUFACTURE

1. PARQUET PANELS, from 1s. 6d. per square foot.
2. PARQUET BORDERS, in geometrical and spiral designs, from 2s. 6d. per square foot.
3. PARQUET BORDERS (Veneered) on a new system, fixed in or upon ready-made floors, from 1s. per square foot.
4. DECORATIONS FOR WALLS AND CEILINGS, in Wainscot, Walnut, Mahogany, Rosewood, Maple, &c. &c. at very moderate prices.

N.B.—Persons building entire rows of first-class houses or villas, can be supplied with PARQUET BORDERS No. 3 for all the best rooms, at a material reduction in the prices.

Applications (by letter) from Architects will be promptly attended to by

THE LONDON PARQUETRY,

8, WHITEFRIARS-STREET.

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the



admission of pure air through an

EXTERNAL WALL

With single pulley, from 6s. each: with leading pulley, from 6s. 6d.
These Ventilators are so arranged that the requisite quantity of air may be admitted for the due ventilation of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the case is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 186, Blackfriars-road, and 117, Union street, Borough; and of all respectable ironmongers, builders.

PAPER-HANGINGS and WALL-DECORATIONS.—E. T. ARCHER, Patentee and sole Manufacturer of the Royal Tapestry Silk Hangings. Every description of Paper-hangings, from cylinder work to the most delicate hand printing, in papers for the cottage or the mansion. Borders, Pilasters, Centres, Medallions, &c. &c. from the drawings of the best artists in the colourings of the most refined taste. Always on hand a large stock of French and all Continental Manufactures.
Machine Printing Works, Royal Mills, Wandsworth, Surrey;
Block Printing Works, 401, Oxford-street, London.

PAPER-HANGINGS, the cheapest in London, at CROSSE'S Wholesale and Retail Warehouse, 29, Great Portland-street, Oxford-street, where builders and the trade can select from a stock of 50,000 pieces, at the following reduced prices:—

Good Red-room Papers	from 6½d. per yard.
Painted Marble, Granite, and Oak Papers	from 6½d. do.
Superior Dining-room Drawing room Papers	from 1s. do.
Sashes and Flock	from 2½d. do.

WATKIN DOYLE (late Meeson, Brothers, and Doyle) begs to inform the trade that he is carrying on the business of COAL MERCHANT and LIME BURNER, and trusts for a continuance of their favours. Grey Chalk and Flare Lime fresh at the kilns every day.—N.B. All kinds of Red Goods, Sand, Hair, &c.—Stratford, near London.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manner of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons, Architect in particular, that he has established himself in Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern styles.—Apply to F. SANG, Decorative Artist, 58, Pall-Mall, London.

NOTICE.—CHAPPUIS' PATENT MYRIA-THATIC REFLECTOR.—It having come to the knowledge of the patentee that certain parties are offering to the public reflectors to light up dark places, which are imitations and infringement of this patent, this is to give notice, that persons using such are liable to be restrained by injunction under the Act 15 and 16 Vict. cap. 83, and that information, which may lead to the conviction of the infringers will be rewarded on application to the patentee, AUBIN CHAPPUIS Sole Manufacturer, 10, St. Mary-axe, City, or to BARLOW and CO. Office for Patents, 89, Chancery-lane.—July 1, 1853.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Exterior of Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,
12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

TESTIMONIALS.

" Brighton, Croydon, and Dover Railways,
Locomotive Department, New Cross, Sept. 25, 1845.

" SIR,—In reply to yours respecting the 'Patent Protoxide Paint,' I have much pleasure in stating that what has been used in this establishment has been highly approved of, and I consider it the best description of paint yet used, particularly for iron-work, for which purpose I can strongly recommend it.

" I am, Sir, your obedient servant,
" BENJ. CUBITT."

" Regent's Canal Iron Works, Eagle-wharf-road, Dec. 5, 1845

" Sir,—As it is always my wish to render justice to every one, as far as it is in my power to do, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint;' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will, moreover, use it for all my own work, and wish I had known it somewhat earlier.

" I am, Sir, yours respectfully,
" HENRY GRISSELL,
" Pro H. and M. D. Grissell.

" P.S.—It must be good for Boilers."

" St. Day, near Redruth, Cornwall, 7th April, 1848.

" SIR,—We have used your 'Patent Metallic Protoxide Paint' extensively about various parts of machinery with great advantage. We find it prevents oxidation, and stands any ordinary heat without being the least blistered or injured. About two years since we painted with it the interior and exterior of some steam-boilers and steam-tubes, and they still remain in the most perfect state, and we consider it of great value for all iron-work.

" HOCKIN and LOAM, Engineers."

CHURCH and TURRET BELLS,
EXHIBITION PRIZE MEDAL granted to
J. WARNER AND SONS,
BELL FOUNDERS AND ENGINEERS,
who are prepared to contract for the supply of
CHURCH BELLS
of any weight or key, single or in peals, of superior tone. Peals augmented, cracked bells recast, rehung, &c.



MUSICAL HAND BELLS,
Clock, House, Ship, Cattle, and every other description of Bells kept in stock.
Old Bells taken in exchange.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen," &c. and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 13, Albany-street, Regent's-park.

FRONTS of HOUSES.—BELL'S PATENT COLOUR is now established beyond question for permanency, beauty, and economy, destroying all greenish vegetation. May be applied by any ordinary workman, and only one-eighth the cost of oil paint. In casks of 1, 2, and 3 cwt. at 8s. 15s. and 21s. each.

DAMP WALLS—PATENT ELASTIC PAINT, as used at the Tunnel, Zoological Gardens, Regent's-park, and various other public and private establishments. Sold in quantities to cover 150 square feet for 10s.; and guaranteed.

BLACK MINERAL PAINT, very permanent, half the usual price; only 3s. per gallon.

PATENT INDIA-RUBBER PUTTY, never shrinks, therefore no possibility of leakage, 3½s. per cwt. or 4s. per stone.

C. BELL and CO. Steam Mills, 2, Wellington street, Goswell-street, London.

THE VIEILLE MONTAGNE ZINC MINING COMPANY beg to inform the public that they have appointed Messrs. T. and S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innocuous and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior article of a very superior paint, and the economy realised by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark—in Hull, by Messrs. BLUNDELL, SPENCE, and CO.; when ground and dry, by Messrs. T. B. MORLEY and CO.; and by the Company's Grinding Agents. In London, Messrs. CHARLES DEVAUX and CO., wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail agent, 8, Tottenham-court, New-road, and 60, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO. of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ANDERSON and CO. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 21, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 12, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, previously confined by its cost to the use of the artist, is now, by Hubbuck's Patent, reduced to less than White Lead.

The principal characteristics of HUBBUCK'S ZINC PAINT are—Economy, Health, Beauty, and Durability.

Builders and Contractors find Hubbuck's Paint the only one adapted to all their purposes; possessing the great desideratum of economy, combined with its high excellence as a paint, it ranks alone. Contractors effect a saving of 25 per cent. by using HUBBUCK'S ZINC PAINT

HUBBUCK and SON feel it necessary a caution should be circulated against the fabrications of their Paint. White Lead manufactures, containing frequently pernicious ingredients, are baneful to health and worthless in use, whilst the inexperience of these imitators in the protection of pigments is evidenced, not alone by the coarse grainy appearance, but also by the deficiency of that body in their produce, which is known to the painter to be all-essential. That an imposition be not practised, therefore, notice that the cask is marked with the name of the original manufacturer, thus—

HUBBUCK——LONDON——PATENT.

If not so marked, the reason may be inferred.

Every information in the circular to be had of THOMAS HUBBUCK and SON, Paint and Varnish Manufacturers, Upper East Smithfield (opposite the London Docks), London.

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE, Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride is most, if not in all respects, is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60 lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the cost of coating in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co 8, Upper Thames-street.
	Mr. Richd. Cooke, 7, Sise-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Douglas
LEEDS	Messrs. T. and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm. Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Slimshaw, Glasgow.
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PORTLAND CEMENT.—JAMES WESTON having enlarged that portion of his CEMENT WORKS on Mill-wall, Poplar, for Manufacturing the above CEMENT, begs to inform the Trade in general that they can be supplied with any quantity they may require, either at the Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT.—ASPDIN'S PATENT.

Messrs. ASPDIN, ORD, and CO. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin) much improved the quality of this cement with-ut any increase in price.

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ASPDIN, ORD, and CO. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is considerably cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New-wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, MR. HENRY ROBINSON, 31, King-street, Liverpool.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its cementitious properties; that it is not affected by frost, and does not vegetate in damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

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PORTLAND CEMENT.—CHARLES RICHARDSON has the greatest confidence in introducing to the trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious qualities, resists the action of frost and heat and is more durable than any other Cement; does not vegetate, turn green, or crack; combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be, and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

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PARIAN CEMENT for internal use, to be PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS. CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

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THOMAS FREEN and CO. LIME BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

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THOMAS FREEN and CO. invite the attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. Its satisfactory qualities constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.
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WARWICKSHIRE BLUE LIAS LIME.—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings where great substantiality is required, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and JACOBS, 16, South Wharf, Paddington, and at the Works, Stockton-fields, near Southam, Warwickshire.

PERMANENT STUCCO WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. have registered some important improvements in the manufacture of this very useful material, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO or BRICK WORK. It is a Stone Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Railway Stations, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 350 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, is suitable enough for internal as well as external surfaces, places it above all other materials of its kind; it has no caustic qualities; may be painted or papered in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILIP HARE and CO. at the Warehouse, 22, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

PORTABLE BRICK HOUSES, Tile-faced on Metal-tongued Yellow Deal Wainscoting, suited to any climate, promptly erected. Three rooms, 30ft. 1½ ton measurement; four rooms, 38ft. 1½ ton, packed solid. Adapted for chapels, bazaars, galleries, stores, &c. A chapel, 300 sittings, 37ft.—E. SMALLWOOD, Contractor, Grove street, Camden-town.

The Builder.

SATURDAY, AUGUST 20, 1853.

THE terrible accident which occurred on Monday last, at the Sydenham Crystal Palace, has necessarily created a deep sensation. The daily papers have already told the majority of our readers the particulars of the event, which has hurried out of life thirteen fellow-creatures, and so severely maimed five that the result is more than doubtful. They were engaged in putting up the framed trusses, or centres (to convey the idea more popularly), on which to construct the vaulted roofing of iron, wood, and glass of the great central transept. Adopting for a time the official statement made by the contractors,—

"The central transept of the building is 384 feet long by 120 feet wide. At the south end its length is diminished to the extent of 24 feet by a recessed front, reducing the length to 360 feet. It is to be covered by a semi-circular vaulted roof of 120 feet span, the ribs having standards at the bottom and lantern on top, which increase its total height or rise from 60 feet to 76 feet. This roof springs at about 122 feet from the ground-floor line, but the ground-floor is upwards of 30 feet above the upper terrace, making the total height to the top of the central transept 208 feet.

At each end of the transept there are five tiers of galleries, each of them 24 feet wide, and at the points where main ribs have to be fixed additional columns are introduced for their support, projecting 8 feet into the body of the transept."

The difficulty that had to be encountered was, that of fixing the main ribs, purlins, and intermediate ribs (forming the centering), for supporting the roofing, and this again resolves itself into a question as to the nature of the staging to be employed, and the method of fixing it.

"The kind of staging decided upon was to occupy nearly one-half of the total space to be covered. It consists of seven main trusses 120 feet long by 30 feet deep, surmounted by seven other similar main trusses, 90 feet long by 30 feet deep, and, when put together, forming seven double trusses, each of them 120 feet long at the base, 60 feet deep at the centre, and 60 feet long at the top. The trusses are formed upon the principles generally adopted in constructing large roofs or the framed ribs for bridges, the ties being made of wrought iron, the struts being framed of timber, and the connexions being made of cast-iron, the whole of the parts being arranged and calculated so that when the greatest weight was upon the stage no part would be strained to an extent amounting to one-fourth of the total strain required to break it. In ordinary bridge building, or roof building, when ribs or principals have to be thrown across openings similar to the one here dealt with, it would be necessary to prepare scaffolding or centering upon which to erect the very trusses that in this instance form the staging. In this case, however, the construction of such scaffolding and centering was avoided by erecting the first pair of lower trusses on one of the platforms described above as forming the upper gallery floor; having erected these two trusses, one of them was firmly fixed on the upper gallery floor, or platform, nearest to the front, and the second one (having been erected on the same gallery floor, or platform) was attached to it by cross timbers at frequent intervals. The attachments of these timbers to the first-named truss were then loosened (the attachment to the second truss being firm), and then the second truss was moved forward off the platform, over the open space, 120 feet clear, to the ultimate position designed for it, the cross timbers alluded to being used as guides, so as to keep the second truss vertical while being moved; the cross pieces of timber were then made secure to the first truss, transverse diagonals and planking for the men to work upon were added, and the whole made thoroughly secure. This being done—viz. a complete staging having been formed with two trusses, 120 feet span by 30 feet deep, at a distance of 24 feet apart from centre to centre, the completion of the staging was carried on by constructing a third truss immediately inside of the second one, the several parts being supported during construction by timbers overhanging from the second truss and supported on its tie bar. Upon the third truss being completed, and its parts connected together, cross timbers were attached to it, reaching over the second truss, and nearly to the first one; it was then shifted forward to its place, the ends of the cross timbers were secured to the ends of the second truss, and the diagonals and planking were added as before. The fixing of the remaining lower trusses was merely a repetition of the fixing at the third truss."

Four of the lower trusses for staging having been fixed as described above, three of the upper ones, 90 feet long by 30 feet deep, were erected upon them; the two first main ribs were erected in place, and the workmen were engaged rivetting the various parts together. Two more of the lower trusses had been moved to their ultimate position, and the seventh was advanced very nearly to the position of completion and removal to its place, when three of the lower trusses—namely, two completed and one in the course of construction—fell, together with the cross timbers, attachments, and planking thereto attached, as we have already said. There were nineteen men on the scaffold at the time, and wonderful to say, one of them, notwithstanding the terrific height from which he fell, escaped uninjured. The sad fate of the eighteen we have before mentioned.

On Wednesday an inquest on the bodies of the ten men lying dead in the building (three are at Guy's Hospital) was commenced under the Coroner for Surrey, Mr. Carter, and adjourned, till Friday, by the way, before the business was more than opened, much to the inconvenience apparently of some of the jury, who, being there, were naturally anxious to proceed. The only witness examined beyond those who identified the bodies, was

George Williams, who said in the course of his examination,—I am a foreman carpenter in the employ of Messrs. Fox and Henderson, the contractors for building the Crystal Palace at Sydenham. I was standing on the ground-floor of the centre transept, within 24 feet of the iron column on which the scaffold stood. The scaffold rested upon columns, and was composed of iron and wood, properly framed together, and tied with iron bolts. It consisted of trusses erected for raising the iron ribs or roof of the main transept. The first truss had been up perhaps about a month, and the rest have been in course of erection since that time. The men acting under me were preparing the seventh truss for the next day. I heard the ends giving way, and on looking up I saw it coming down—the trusses of the north end. Could form no opinion as to how it had fallen. It appeared to come down all at one time. Three trusses only of the north transept came down. The deceased fell about 170 feet. It was part of my duty to select the wood for the trusses. I superintended the erection of the transept of the Exhibition in Hyde Park, and by reason of that circumstance I had a full knowledge of the nature of the works in progress. No portion of the trusses came from the old building; it was all new and of the best material to be found in town, Dantzic timber. The columns formed part of the old palace. None of those upon which these particular trusses stood have given way. The entire height of three of the trusses had been carried up, and the end ribs were constructed over them. The trusses under those ribs are remaining perfect; they were made of the same material as those which fell. The one next to those which were carried up remains. It seems to have been shaken, but I have no doubt it will continue in its position, until we can get it more secure. It is shaken, but not displaced. The others do not appear to have suffered in the least; they seem quite secure. I cannot form any opinion why the three trusses should have fallen, which had no weight bearing upon them, and that those which had should remain firm.

He went on to say there had been no want of care on the part of the men; could not form the slightest idea as to the cause of the accident (Sir Charles Fox said the same thing); none of the workmen had ever expressed apprehensions of them, or fear of working on them; the scaffolding put up in the first instance had fallen through not being strong enough, but for the present trusses extra strength was given. In reply to a juror who seemed to have a better knowledge of what he was about than was elsewhere apparent, he said no portion of the ironwork had given way, only the woodwork; labourers were generally employed in this kind of work, and he preferred them to mechanics, as they acted better at such a height from the ground.

A juror suggested that some disinterested engineer should be directed to examine the building, and give the jury the advantage of his survey. But the coroner said the Legislature had given him no power to call in such aid. All he could do would be to make an application to the Secretary of State on the subject. Mr. Ballantine, who attended on the part of the contractors, begged to observe, that if the jury would mention the name of any competent engineer, the company would take care to afford him the fullest opportunity of surveying the building, and would produce him when the inquiry was resumed.

We are disposed to hope that this will be done, although the opinion of the contractor that the wood-work is so broken up that no one can form a just opinion of the cause, may be quite correct. It will serve to allay the excitement which prevails, and, moreover, may lead to precautionary measures in future proceedings. Eloquent praise of "boldness" and "daring" in the daily journals reads very pleasantly, but it should be remembered that these qualities of themselves do not always deserve it, and may in truth be culpable. To arch over a span of 120 feet, at a height of 102 feet from the ground, is a work of no common difficulty, and the mode proposed by Messrs. Fox and Henderson of forming the staging for it is ingenious and beautiful. But no one can shut his eyes to the fact that it was exposing the men engaged to a frightful risk, which has unfortunately become a certainty. Far be it from us to say anything which would tend to discourage the introduction of new modes scientifically conceived and carried out; although it is of course our first duty to insist upon arrangements which may lessen the risk to human life. We must necessarily return to the subject; but at the present moment we will simply say, that we hear with gratification that, whatever may be the result of the inquiry, the contractors intend to have a scaffolding raised from the ground to complete the roof of the transept.

Turning for a few minutes to a pleasanter subject, we may mention that great progress is being made in the interior fittings of the various courts and in the formation of the grounds without. The Pompeian Court is the most advanced; the coloured decorations being to a considerable extent completed. The Egyptian Court has also taken shape; so also the Greek Court; but this, as it strikes us, will be less unlike what the people have already seen than the former and some of the other portions. The collection of casts from antique statues will nevertheless render this a very attractive point in the Exhibition. The shell for the corridors and doorways forming the Byzantine, Italian-

Mediæval, Gothic, and Renaissance Courts is being rapidly constructed; and in the gallery above is a marvellous collection of casts from all parts of the world, destined to occupy the floor and walls of the apartments thus being prepared for them. Amongst the casts the colossal head of "Bavaria," from Munich, and the legs of the sitting Memnon, now in progress, strike the visitor on entering; while past the Pompeian Court the equestrian figure of King Charles has already given the name of "Charing-cross" to that part of the building in which it stands. It is impossible to form a just conception of the extraordinary whole which the Crystal Palace will present when the numerous ideas now all working towards fulfilment are realized and opened to the inspection of the world.

In the grounds an immense amount of work has been done; terraces levelled and formed; here the earth cut down, and there again brought up to a height of 18 or 20 feet, in thin layers, made solid by continuous ramming. Flights of granite steps from 40 to 50 feet wide; thousands of feet of stone balustrading on strong brick substructions to keep back the ground; and stone arcades to contain dolphin-fountains,—are all nearly completed. Upon the pedestals of the steps and balustrades,—the architecture of which, by the way, might be better,—are sphinxes and statues; "Italy," by Monti; "Australia," by Bell, with kangaroo by her side and golden nugget in her hand; and a series of copies from the antique by Bernini, including the distorted Farnese Hercules, Æsculapius, and Mercury. The two first clever statues are casts in cement merely. It is worth noticing the large sizes of the granite blocks for steps—many of them 12 feet in length.

The preparations for the water-works are on a colossal scale. Four pipes, 2 feet 9 inches each in diameter, are being laid down for two cascades, which will run along a large extent of ground, and at the end fall over and pass the face of an arcade 200 feet long, where visitors will walk. The extent of water from end to end will be 2,000 feet. The great basins are 360 feet across, with a high jet in each. In the whole there will be ten great fountains. For these it was thought desirable to obtain fresh ideas, and a competition was accordingly invited on a very satisfactory footing. Ten architects and sculptors, some foreign, some English, were selected to give designs, and the sum of 100*l.* was paid to each. Amongst them are John Bell, Hector Horeau, Owen Jones, Kiss of Berlin, John Thomas, D. Wyatt, &c. The designs, about 100 in number, have just now been sent in.

We must not conclude without reference to the last project in connection with this immense undertaking, namely, a series of hotels designed by Sir Joseph Paxton, to be erected in iron and glass, similar in character to the main building, on the London side, and connected with the Crystal Palace by glass ways passing over the public road. These, it is proposed, which are to be of first, second, and third class, each containing about 100 rooms, and supplying refreshments at costs suited to the means of the various orders of visitors, are to be carried out by a separate company.

Enough, however, for the present.

THE NEWCASTLE-UPON-TYNE SOCIETY OF ANTIQUARIES.—At a meeting held lately in the Castle, Mr. John Clayton in the chair, Mr. W. H. D. Longstaffe, of Gateshead, read the first part of a paper on "New Castle upon Tyne," comprising the documentary evidences affecting the arrangements and changes in the Castle. The non-appearance of the Newcastle Volume of the Society was explained as arising from a want of subscribers, which Dr. Bruce said must arise from the public not being properly applied to. The same gentleman intimated that the Archæologists at Chichester had frequently alluded in gratifying terms to their hospitable reception at Newcastle.

THE ARCHITECTURE OF PRE-NORMAN ENGLAND.*

AFTER the departure of the Romans, the Britons were soon distressed by inroads from the north, when Vortigern, the chief British prince (celebrated by Blackmore for his "painted vest"), made a treaty with Hengist and Horsa, two northern chiefs or Saxons, the Saxons, as well as the Northmen or Danes, being rude northern tribes (whose point of departure is supposed to have been Schleswig-Holstein). These new comers soon cleared the country of the savage invaders; had the Isle of Thanet assigned them for their pains; and apparently became great friends with Vortigern, who married Hengist's daughter, Rowina. The whole transaction was a famous commentary on "the snake and the porcupine" fable, as the Saxons poured over in great numbers from time to time, till at length the Britons were subdued, and such as would not assimilate with the invaders went into Wales, Cornwall, and Devon, or went across to the old British colony of Amorica or Bretagne. This brings us to A.D. 582. During these stormy 134 years (it is singular it should be within two years of the time it took the Romans to arrive at the same stage with respect to the original Britons), although the Saxons are described as having destroyed monasteries, &c. we have, nevertheless, records that Aurelius Ambrosius repaired churches in Britain in 448, and that a council was held at York in 522, for the furtherance of ecclesiastical affairs. The torch of science, though not destroyed or forcibly extinguished, was all but suffered to go out; but it was soon relighted by Gregory the Great, who sent St. Augustine in A.D. 597 (that is, fifteen years after), to rekindle it by reviving Christianity, and we may feel tolerably sure it never was thoroughly quenched, judging from the rapidity with which Christianity again spread all over the country. Many buildings were erected (of which more anon), and monachism prevailed; and altogether things went on pretty smoothly till the end of the eighth century, when, if possible, still fiercer bands of pirates and invaders appeared upon the coasts. These were the Danes, Northmen, or Sea Kings. They not only infested several parts of England, more particularly Kent, and still more particularly this city of Rochester, this being the guard of the important, indeed only, pass of the river, but the opposite coast of Gaul also. The usual course of rapine and slaughter, with alternate successes on each side, prevailed; and those engaged in the contest had no time for peace. At length the greatest king England ever had, Alfred the Great, appeared in A.D. 872. He put down the Danes and restored order, restored the churches and monasteries, and built others; established laws, which are the laws of England to this day; and, according to Lord Campbell, regularly established the office of Lord High Chancellor of England. He established schools and places of learning—amongst them Oxford—(Cambridge being said to be founded by Sigebert, King of E. Anglia, in 643); built ships of war, and encouraged trade and navigation; and intercourse with the continent (which had been going on more or less frequently since the time of Ethelbert) was renewed. Alfred himself was educated at Rome. He did not, however, entirely drive out the Danes, but ceded part of Northumbria and East Anglia to them; and it is worthy of remark, that the ruler of the opposite country (Gaul), shortly after, in the year 918, ceded *Normandy* to such of the Danes or Northmen as had invaded his shores. In the reign of Edward the Martyr, A.D. 975, began the very bad practice of buying off the Danes with money: he did worse, he tried the "snake and porcupine" experiment over again, and invited the *Normans* over to keep them down,—these Normans, being the Danes to whom Normandy had been ceded a few years since. Then came the savage and fatal attempt, in the next reign, to murder every Dane in England; then the fearful revenge of Swayne, King of Denmark, which ended in seating Canute on the throne; then followed all sorts of distractions and claimants for the crown, which were put an end to by William of Normandy, who defeated and slew Harold II. at Hastings, and ascended the throne, being crowned and accepted as king by both English and Normans. Let us, before going further, look a little closer at this Norman business. I think it can scarcely be called a conquest in the usual acceptation of the term, that is, a conquest by a distinct *foreign* nation. We have seen that the early Britons established themselves in Amorica, the subsequent site of Normandy, and that the Britons, still under the Romans, established a colony in Bretagne, the adjoining province, now Brittany; that the people to whom Normandy was allotted in 918, were the same as those to whom Northumbria and E. Anglia were allotted in 872, and that they were invited as mercenaries in 975. Further, it appears that Ethelred the Unready, A.D. 978-1016, married Emma, the sister of Richard, Duke of Normandy, and aunt of the Conqueror; that he fled to Normandy, after the Danish revenge, and left his wife and two sons, Edward and Alfred, there; that after his death, Canute, the Dane, married his widow, who still left her children in Normandy; that after Canute came the son, Edward (called by the priests, the "Confessor," and whose dominion he was entirely under), who had been reared and educated in Normandy, and who brought over Norman priests and favourites to succeed the Saxons. (The Saxon priests were not over obedient to the Pope: the Normans were; so the Pope, after the manner of popes, cursed Harold and blessed his opponent.) He invited his cousin William over to see him, and left him his throne by will. He married the daughter of Earl Godwin (apparently to keep the great Earl quiet), and shamefully neglected and ill-used her; hence most bitter animosity between the parties: and Harold's (the Earl's son) seizure of the throne, after shipwreck on the Norman coast, where he saw William, who offered him his daughter in marriage and swore him, not being able to help himself, on a tub full of the bones of the saints (probably taken from the nearest shambles or graveyard), not to attempt the throne of England.*

William seems to have relied, in fact, on his equally near descent, the will of the late king, and this oath, to justify his claim. The affair seems to me, I must confess, to have partaken more of a personal quarrel for succession than a national conquest. Indeed, the Normans have scarcely given a name to a single town, river, place, or district in England; and, although they introduced their barbarous French in law language, the tongue of England (still so called) to this day is essentially Saxon, with a small proportion of British, Celtic, and Latin left by the Romans.

I here conclude my general summary, intended to show what *must* have been done in the several stages of society in this island, in addition to the following specially recorded facts, as to the building works executed by the Anglo-Romans and the Saxons.

I will first record some of the Roman works known to have been built or now extant. They are known to have built a temple of Apollo on the site of Westminster Abbey, a temple of Diana on the site of St. Paul's, London, a temple of Minerva at Bath, &c. &c.: there are remains of their villas at Bignor, in Sussex, already alluded to; in the neighbourhood of Hythe, where a very large one has recently been discovered, and in many other places, where mosaic pavements of elaborate design have been discovered; together with *window-glass*, coins, personal ornaments, and household utensils. There are remains of a Roman wall, with towers and niches, at Leicester. There are at Lincoln a Roman gate, a postern tower, and a tower in the castle. There is the octagonal tower, or lighthouse, in Dover Castle; and there are several works at Richborough, Bath, London, Colchester, Silchester, Chester, Woodchester, &c.

The above are I believe admitted on all hands to be Roman, and I suspect others might be added, which, if not absolutely Roman, were built in the "Roman manner," as the Saxon phrase is, and I am inclined to class St. Alban's Abbey as one of these, that is, the nave, transepts, and tower. We have already seen that St. Alban's, or Verulam, was an early Roman city: we have,

* See p. 314, *ante*.

* I was shown, when at St. Valery, in '48, a small circular tower on the coast in which, the tradition is, Harold was confined.

besides the general evidence of the introduction of Christianity in the end of the third century, special evidence with respect to this church that it was founded about the year 300, to commemorate the martyrdom of St. Alban. Matthew, of Westminster, says that "within ten years after the suffering of St. Alban, the protomartyr of England, a basalic in honour of him was constructed;" and Bede, an earlier authority, says that "at Verulam, peace being restored to the Christians, a church of *wonderful workmanship*, worthy of his martyrdom, was erected." That which Bede describes of "wonderful workmanship" could not have been a very trifling erection: he had described too many churches, and important ones too, to have used such an epithet without cause. It is probable that this was one of the churches attended to and repaired in 448 and 552. Further, there is a legend that Offa, king of Mercia, about 791, was thinking of building a church, and, wanting a patron saint, was admonished by an angel in a dream to find the body of St. Alban (who had been buried between 400 and 500 years) and build a church in his honour: he accordingly proceeded to Verulam, set about his incantation, and was guided to the grave by a pillar of light which hovered over it (I suppose it was the modern odylic light). He, it goes on to say, removed the body, put a gold circlet round the skull, and set about the church, which he handsomely endowed. I suspect the real truth of this matter is, that he found a large and substantial church, repaired it, whitewashed it, furnished it, endowed it, and then swore he built it,—a very common practice in the Middle Ages, as the inscription at Morley Church, Derbyshire, and other places, testify. Again, Matthew Paris, a Norman monk of St. Alban's, says the abbey was built from the foundation by Abbot Paul, who was installed in 1078. As I said in the beginning of this paper, I very much distrust Norman chroniclers, and I think the facts are against Matthew Paris on this occasion. The description in Neale's "Churches," speaking of the nave, is, "These arches of the nave are plain and semicircular, springing from massive piers constructed of *brick*, or as it is called 'Roman tile,' plastered over: this tile is of exquisite hardness, surpassing stone in durability, but bearing no ornament whatever." The tower is described to be built in a similar manner, and one of the arches of the south transept has been admitted to be Roman. If I remember rightly the top of the walls of the nave are 7 feet thick, but as it is nearly twenty years since I superintended the restoration of the abbey and the repairs of the roof-beams which were decayed at the bearings, I cannot be certain. Now, is there any other building in England, thoroughly authenticated to have been begun in the Norman period, in which the same mode of construction can be found? I think not: the style too is Roman, and in accordance with other Roman works found.* Supposing I am right in my conjecture that this large building, with its tower, triforium, and clerestory, existed, at all events, before the Conquest, there will be no difficulty in believing that many other pre-Norman buildings have existed, and that they may still remain.

I will not trouble you with the very long list of churches, monasteries, and other works recorded to have been erected by the Saxons: 1,700 churches alone are recorded in "Doomsday Book" as being then in existence: neither shall I enter into the controversy between King, Stukely, Carter, Garbett, and others, who maintained the Saxon, or pre-Norman cause, against their opponents: I will merely state, that there were many buildings in England at the time of Gregory the Great and St. Augustine adapted for Christian worship, since Gregory directed the Christian clergy not to destroy Pagan temples (probably originally Christian churches), but only the idols in them; and then to purify such of them as were well built with holy water, and place altars and relics therein. And I will further quote one or two descriptions of Saxon churches of seventh century. Wilfrid, Archbishop of York, from 669 to 678, executed, amongst other works, churches at Ripon and Hexham. Heddius says:—"In Ripon Wilfrid erected a church of *hewn stone*, supported with various columns and porticoes, and completed it from the foundation, to the utmost height." And Richard, who was prior of Hexham towards the close of twelfth century, thus describes the church of St. Andrew at Hexham:—"St. Wilfrid laid the foundations of this church deep in the earth, with great care, forming crypts and subterraneous oratories, and winding passages. The walls, extending to a great length, and raised to a great height, were divided into three distinct stories, supported by polished columns, some square and others of various forms. The walls and also the capitals of the columns by which they were supported, and the arch of the sanctuary, were decorated with histories and images, and different figures carved in relief, on stone, and painted with colours, displaying a pleasing variety and wonderful beauty. The body of the church was likewise surrounded on all sides by pentices and porticos, which, with the most wonderful artifice, were divided above and below by walls and winding stairs. Within these winding passages, and over them, were stairs and galleries of stone, and various ways for ascending and descending, so ingeniously contrived, that a vast multitude of persons might be there, and pass round the church without being visible to any one in the nave below. Many oratories, also most retired and beautiful, were with the utmost care and diligence erected in the porticoes, both above and below; and in them were placed altars in honour of the Blessed Mother of God, the Virgin Mary, St. Michael the Archangel, St. John the Baptist, and the holy apostles, martyrs, confessors, and virgins, with all becoming and proper furniture belonging to them. Some parts of this building, even to this day, remain standing like turrets and fortified places." This account of the church at Hexham agrees with that given by Heddius, who was contemporary with Bede, and who states that no such edifice was known on this side the Alps.

The above description also agrees with the illuminations on the Saxon manuscripts. I saw and made sketches from one of the tenth century the other day in the British Museum (Harleian MS. No. 2788, cat. vol. ii.), in which are shown towers, porticoes, decorated columns, enriched arches, chandeliers, and very elaborate borders round the subjects, all of which illuminations are richly gilt and coloured.

So much for pre-Norman England. And I cannot understand why, in the face of the presumptive and positive evidence above adduced, all the credit should be given to the Normans as the great promoters of architecture in this country. The church above described was built more than 100 years before they appeared in this part of Europe at all, and more than 300 years before Rollo, the first Duke of Normandy (A.D. 911) existed; and we must not forget that when they did settle on the continent, it was on the site of an ancient British colony. No one has ventured, as far as I know, to give a date to any Norman building in Normandy earlier than A.D. 1000, the majority being ascribed to the time of the Conqueror himself and onwards, when, as has been shown, there was intimate intercourse between Normandy and England. I do not mean to turn the question into a hobby, and ride it to death, but I think the English were as likely to teach the Normans as the Normans to teach the English, who have, at all events, been pretty good hands at constructive works ever since; and I will be content to say, that we have no right to conclude a building cannot be Anglo-Saxon or Anglo-Roman because it should happen to be large, durable, or ornamental.

HENRY DUESBURY.*

* It may, as an extreme conjecture, be suggested that the Normans used the tiles from the ruins of ancient Verulam, and so might the Romans. The original city was sacked by Boadicea, in the reign of Galba, about A.D. 70, but I think it very unlikely in either case. The tiles would not *pay* for pulling down and cleaning (supposing enough sound ones could be found after at least 700 years of ruin, they being in courses merely about 4 feet apart in stone walls). The practice, if it ever existed, was not continued here; and the Normans do not appear to have adopted it anywhere else.

WIDE ESTIMATES, for rebuilding, enlarging, and erecting new cottages at Hatford, Berks, for P. Pusey, esq. Mr. Street, architect.

Beckersall, Steventon	£1,269
Kent, Wantage	895
Messrs. Wilkins, Eynsham (accepted)	600

* This paper was written in connection with the visit of the British Archæological Association to Rochester Castle, but was not read at the meeting.

THE LABOUR MOVEMENT IN THE METROPOLIS.

THE dispute between the masters and the men is unfortunately not yet settled. On the 28th of July, a few days after the carpenters who had struck against individual employers had returned to work, the delegates had an interview with the masters. The result of the meeting was shaped into the three following propositions, which the former approved and admitted as a fair exposition of their requests:—

"That the general standard for workmen be understood to be 5s. 6d. per day where it now is 5s."

"That the employers are to be considered as quite at liberty to exercise their own discretion as to whom they shall employ at this rate."

"That if the employers have in their shops workmen who are really not worth this rate, but are willing to work at a lower rate, neither the masters nor workmen are to be molested on that account."

A meeting of master builders was held at the Freemasons' Tavern on the 16th instant, to consider these, when it was unanimously resolved,—

"That inasmuch as labour, like every other article, has its market value, varying according to circumstances, it is not expedient either for workmen or employers to attempt to establish a standard rate of wages.

That neither the present state of the labour market, nor of that of the markets for provisions, render necessary an advance of wages at this time.

That the amount of wages now generally paid is, in the opinion of this meeting, fair and ample; but that there can be no objection to superior workmen being remunerated according to their respective merits.

That it is matter of great regret that partial strikes are taking place, and thus great injustice is being done to individual tradesmen. That other and better methods of determining such questions as the rate of wages and regulation of employments, may well be found, or, it is to be feared that the employers will be *forced into a combination* in self-defence, a course greatly to be deprecated."

The plasterers are siding with the bricklayers in a strike against Mr. Jay, for 5s. 6d. instead of 5s. per day, and which he resists as especially unjust, other builders being left unmolested. He has 150 bricklayers, and as many labourers, out; and the works at the Houses of Parliament, Great Northern Railway, and other large matters, are suspended, with the concurrence of the architects. The masons say they are satisfied with 5s. wages, but they want shorter hours. The masters, in their turn, say they are confident that the one point will be merely used as *the stalking-horse* for the other; that the doctrine of the men in former years was to insist on the *privilege* of working overtime from April to September, and now they take the opposite course.

There are no strikes out in any other branch of the trade; in some few instances, where work presses, plasterers are getting the advance of 6d. per day, but this is the exception.

THE PROVISION OF DWELLINGS FOR WORKING MEN.

How are the working classes to be elevated? How are their vices to be corrected and their miseries alleviated? How are they to be taught to exercise self-respect, to be raised above uncouthness of manner and grossness of speech? These are questions which different minds will doubtless answer in different ways. But will you hear the answer of one who is himself a working man, who has lived among working men of all grades, who has mixed freely with them and felt their privations, who knows their feelings and wants, who has admired their patient endurance, yet grieved for their faults and errors? Will you hear me, sir, while I give my humble opinion as to what working men most require at the present day of philanthropy, of scientific and social progress? I am induced to address you thus from having perused your excellent remarks in the *Builder* of the 23rd ult. With the general views contained in the article in question I most cordially agree. The dwellings of the very poor in our metropolis are not only very dear, but they have hitherto been fearfully overlooked. They are generally the fertile nurseries of disease, and the abodes of misery and vice. It is therefore most gratifying

to know that the Legislature has stepped forward to abate, at least, some of the evils connected with the "common lodging-house." I am not very sanguine, however, that the objects sought to be obtained by the recent Act will ever be realized to the full extent until proper buildings are erected for the purpose, and conducted according to some enlightened system, by which cleanliness, quiet, and good order shall be strictly enforced. But it is not my purpose to speak further on this point at present. I wish rather to consider the case of working men—of the thousands of skilled artizans and mechanics who earn good weekly wages, say from 2*l.* 8*s.* to 3*l.* 0*s.* and who can really afford to pay something more than those poor people who must put up with the mere shelter of a common lodging-house.

Now if there is anything that can contribute more than another to a working man's welfare—that can add to his enjoyment of life, in addition to the saving influence of good principles and a well-regulated mind, it is the possession of a clean, quiet, and comfortable home, to which he can return after the cares and labours of the day to refresh himself, to rest his weary limbs in peace, and profitably or pleasantly occupy his evening hours. Such a home attracts a man to what is good, and draws him away from what is bad. But place him where the people around him are noisy and uproarious, dissipated or profane, where there are squalling children, or other causes of annoyance,—where, in short, there is no order or cleanliness, and no consideration for his comfort,—then he becomes disgusted and irritable. The natural consequence is, that his evenings, instead of being agreeably occupied in retirement and repose, are but too apt to be spent at the public-house, or at other places where vicious excitement is to be found. Next to work itself, a good home is of the greatest importance to a working man, whether we consider character or comfort. It is there he should rest and recruit his strength for the toils of the following day: it is there he must quietly study the principles of his profession, or enrich and store his mind by reading: it is there he must think on his course, on his progress, and his prospects for the future: it is there he must communicate with his absent friends, and attend to other matters of greater or less moment. Not in the hurry or pressure of action is he so likely to form the high resolve, or ask the guidance and the blessing of God on his efforts.

In these days, then, of commercial prosperity, when the working man is fully employed and receiving good wages, what he most requires is a comfortable lodging, and yet I believe the experience of every working man who has lived some time in London, or any other large town, will bear me out in saying that nothing is so difficult to obtain. Let a working man go where he may—pay what he may—he must make up his mind to suffer many unnecessary inconveniences and discomforts, whether in the form of filth, bad air, noisy disagreeable neighbours, or the most meagre accommodation, all of which in nine cases out of ten, are traceable entirely to the ignorance and bad management of those who keep lodgings for working men. These people may be compared to the principals of the old dame school. They know nothing of their business; they have no system, no regulations, no order. Every one in the house is left to a great extent to do just as he or she may please.

You will believe then that, with a great number of your readers, I am particularly interested in the success of the model lodging-houses, which have been erected by the society formed for the purpose. But I must say that I am far from being satisfied with what has already been done. With the building in Streatham-street I have no fault to find.

But what can I say of "*Soho Chambers*," in Compton-street? Here is a building situated in a populous quarter, having a respectable name, a public room for reading, and a general *cuisine*. Yet you tell us that the concern does not pay, owing to the badness of the "rooms." I regret that this statement corresponds perfectly with my own impressions of the place, which I was shown over some four or five weeks ago. I confess I was very much disappointed with the "bed-rooms," which rather deserve the name of *cribs*, being so small and narrow that there is little more than room to pass between the bed and the partition. In nine cases out of ten there is little or no natural light: that is to say, the greater number of the narrow compartments have no windows, and in other respects they are wanting in the commonest furniture and conveniences of a bed-room. One, or perhaps two, washhand-basins are provided outside near water-taps, for the use of, perhaps, a dozen people; and there is also a small looking-glass fixed to the wall near the light, wherever that happens to be,—such a looking-glass as one might expect to see in a third or second class bath-room. On the whole, the Society which has the credit of this establishment have fallen into a great mistake in supposing that working men generally will patronize what must appear at first a "new-fangled" scheme in return for such cribs, and the necessary restraints of a well-regulated house. Nor is it the smallness or badness of the rooms only which must tell against the success of the Soho Chambers. Their close proximity to one another is little better than some ten or twenty beds in one room. Certainly, the thin wooden partition partly open near the top, which separates one compartment from another, may prove some guarantee of security, but not of comfort.

MARTIN MARK.

THE STRENGTH OF CAST-IRON COLUMNS.

THE formula given in the last number but one of the *Builder* (p. 501) differs widely from that adopted by the soundest writers on the strength of materials; I will therefore, with your permission, give an outline of the investigations which have been made upon this highly important subject.

One of the earliest writers on the strength of columns was Euler, and his investigations were followed out by Poisson, who states in his "Mécanique," that the formula for the strength of a cylindrical column is of this form:—

$$\text{Resistance varies as } \frac{d^4}{l^2}$$

where d = diameter of the column, and l = its length. The absence, however, of all experimental research into the subject prevented these writers from arriving at a formula which could be correctly reduced to arithmetical calculation, and the subject was again taken up by Mr. Eaton Hodgkinson, who made some hundreds of experiments upon cast-iron columns, and the results were given in a memoir read before the Royal Society, for which their medal was awarded, and was published in their Transactions for 1840, some extracts from which are given in Mr. Hodgkinson's Treatise on Cast Iron. His method of proceeding was as follows:—

1st.—*Supposing the length to remain constant, to find according to what power of the diameter the strength of a column varies.*

Let n be the required power of the diameter.

In experiments with cast-iron columns having rounded ends, it was found that a column 60½ inches in length and 0·5 inches in diameter broke with a weight of 143lbs. and that another column of the same length and 1·765 inches in diameter broke with 15,560lbs.

$$\text{Now } \frac{0{\cdot}5}{1{\cdot}765} = \frac{1}{3{\cdot}53}$$

$$\text{We have therefore } 1^n : (3{\cdot}53)^n :: 143 : 15560$$

$$\text{or } (3{\cdot}53)^n = \frac{15560}{143}$$

Taking the logarithm of both sides, we have

$$n = \frac{\log.\left(\frac{15560}{143}\right)}{\log.(3{\cdot}53)} = 3{\cdot}7 \text{ nearly.}$$

From experiments with columns having flat ends firmly fixed, it was found that $n = 3{\cdot}55$ nearly, and Mr. Hodgkinson fixed upon 3·6 as the nearest value for n.

Therefore the strength varies as $d^{3\cdot6}$

2nd. *Supposing the diameter to remain constant, to find according to what inverse power of the length the strength of a column varies.*

Let x be the required inverse power of the length. It was found by experiments that the strength of one column to that of another 1-16th of its length, but of the same diameter, was in the ratio of 143 : 15107.

We have therefore $1^x : 16^x :: 143 : 15107$

$$\text{or, } x = \frac{\log.\left(\frac{15107}{143}\right)}{\log.16.} = 1{\cdot}7 \text{ nearly.}$$

Therefore the strength varies as $\frac{1}{l^{1\cdot7}}$

and when both diameter and length vary together, we have—strength varies as $\frac{d^{3\cdot6}}{l^{1\cdot7}}$

3rd. In order to apply this law, we must find some constant multiplier.

Let d = diameter of any column in inches.
l = length ditto ditto in feet.
w = breaking weight of ditto in tons.
x = ditto ditto of a column 1 ft. long, and 1 in. diameter, which is found to be equal to 44·16 tons by experiment.

Then by the preceding law, $\frac{d^{3\cdot6}}{l^{1\cdot7}} : \frac{1^{3\cdot6}}{1^{1\cdot7}} :: w : x$

$$\text{Therefore } x = w \times \frac{l^{1\cdot7}}{d^{3\cdot6}} = 44{\cdot}16$$

$$\text{and therefore } w = 44{\cdot}16 \times \frac{d^{3\cdot6}}{l^{1\cdot7}}$$

= Breaking weight of a column, having its ends firmly fixed.

In a similar manner Mr. Hodgkinson found that the corresponding formula for hollow columns is—

$$\text{Breaking weight} = 44{\cdot}3\ \frac{D^{3\cdot6} - d^{3\cdot6}}{l^{1\cdot7}}$$

where D = external diameter, and d = internal diameter.

The load that can with safety be placed upon a cast-iron column is generally about one-fourth of the breaking weight.

The powers of diameters and of lengths are tabulated in Mr. Hodgkinson's Treatise, p. 336, for all columns varying from 1 in. in diameter to 12 in. and from 1 foot in length to 24 feet, so that the formula can be readily applied without much calculation.

An example is given in the above-mentioned work of a column 14 feet long, 6·2 inches external diameter, and 4·1 inches internal diameter; and the formula gives the breaking weight = 275 tons, one-fourth of which is sixty-nine tons nearly, for the weight which may be laid thereon with safety. But the strength given in the Table in p. 502 of the *Builder* for the same column is only about twenty-one tons.

4th. The foregoing formulæ are only correct for columns whose lengths are more than thirty times their diameter. For shorter columns we have the following formula:—

Let b = the breaking weight calculated by one of the foregoing formulæ in tons;
a = area of tranverse section of column in square inches;

$$\text{Then the true breaking weight} = \frac{49 \times a \times b}{b + \frac{3}{4} \times 49 \times a} \text{ in tons.}$$

E. W. TARN. M.A.

POLISHED CONCRETES FOR BUILDING.

THE American papers speak of an invention by "Mr. Benjamin Hardinge, of Cincinnati, by which he is enabled to produce an artificial marble from common pebbles and sand." As a test of the beauty and usefulness of his discovery, according to the *Express Messenger*, he is about to erect in or near New York a model palace, to be built entirely of marble and precious stones.

The stones for the walls, which are now moulding, are formed of silicates in combination with mineral earths and pebbles, and angular spots of granite, variegated with mineral oxides. The roof will be a lava of crystallized silicates of lime and white alumina, resembling the snow crust.

The floors to be of the same material, coloured in mosaic with oxides of minerals. The style of architecture will be unique!

The pillars, pilasters, columns, capitals, cornices, architraves, mantels, &c. will be of agate, jasper, porphyry, &c. with colossal statuary of snow-white marble. The inside finish of the

walls will be of porcelain in landscapes, with ceilings in fresco of porcelain. The doors veneered with porcelain, coloured in rosewood and zebra-wood, inlaid with pearl. The tables, both tops and frames, will be of sapphire and amethyst, embedded with bands of opal, others of lapis-lazuli, chalcedony, onyx set with garnet, topaz, ruby, and cornelian. Others with entire frames of bloodstone, moulded in rich patterns of alto-relievo, with tops of onyx, and other chalcedonic formations.

BUILDING SCRAPS FROM IRELAND.

WE hear that the Derry-bridge Commissioners have instructed Mr. T. Higginbotham, C.E. to make the necessary surveys and report on the site of the intended bridge.

Messrs. Killen and Moore are stated to have about 2,000 men employed on the line from Castleblaney to Clones, which it is believed will be opened by the beginning of December.

The foundation-stone of new parochial schools has been recently laid (and the superstructure is now in progress) at Portaferry, from the designs of Mr. J. R. McAuley, architect. The style of architecture is, we are told, of the thirteenth century, with cut-stone dressings to the porches, buttresses, doors, &c. Commodious school-rooms for males and females, with class and lecture rooms, &c. attached to same, are provided by the plan.

The building trade in Ireland, and especially at Dublin, is brisk: we hear of several new works projected. Owing to the workings of the Incumbered Estates Court, whole districts heretofore neglected are passing into the hands of wealthy proprietors, principally English and Scotch, who are expending large sums on building and other improvements: and we could mention several instances in which recent purchasers have signified their determination of erecting large mansions, model farms, and labourers' dwellings, &c. in localities hitherto wild and deserted. A total revolution in the condition of the working classes who may be spared from the exodus, will be the result; and it is believed that the "Landed Property Improvement Act" has also worked much benefit.

The first train has run on the Dublin and Bray Extension line, but we are told this was merely to keep within the Act of Parliament: the line will not be opened to the public for traffic until the completion of the Dublin and Dundrum Railway, which is now in a forward state; Mr. Dargan, contractor.

The attendance at the Great Industrial Exhibition is still numerous, and on some days amounts to upwards of 10,000.

A new chapel and house for a branch of the Redemptorist Fathers is proposed to be built at Mckennett.

The committee of the Coleraine Academical Institution purpose erecting a new building to contain dining and common halls, two school-rooms, museum, library, laboratory, school-master's and assistants' apartments, dormitories, culinary offices, &c. The outlay is stated to be 2,000*l.* but it is very questionable if all the required accommodation can be given for this sum. One hundred day-scholars and a large number of boarders are to be provided for in the plan. A premium of 20*l.* has been offered for the best, and a premium of 5*l.* for the second best design; the style of the building to depend on the architect's judgment.

The town commissioners of Wicklow contemplate improvements, and have offered a premium of 10*l.* for the best plan for laying out a portion of the town in building lots. We trust that the committee will remember the "*last*" competition, which, by the accounts that have reached us, was disposed of in a strange manner.

A new wing is to be built at the northern side of All Hallowes College, Drumcondra, Dublin, to contain study-halls, lecture rooms, and cloister, on the ground floor; and on the upper floor, professors' and students' rooms, &c. The new buildings will occupy one side of a quadrangle, and the estimated cost is between 5,000*l.* and 6,000*l.* Style, Early English; walls of rubble, with cut stone dressings, &c. Mr. J. J. McCarthy, M.R.I.A. architect; Mr. Connolly, builder. Another wing is proposed to be built next year.

IMPROVEMENT OF LAMBETH.

COULD you not, in your valuable journal, find room for a sketch of the smoking potteries, sheds, and other trumpery erections between Lambeth Church and Vauxhall Bridge, on the river side, and contrast this deformity with a view of a splendid terrace of houses and a wide carriage-road, with a row of trees at the side next the water—the whole distance? This picture might arouse the public to some immediate measure for a speedy removal of the present disgrace to our noble river, and also to the metropolis generally. It would be money well laid out to effect this improvement, and would *amply repay* for the outlay, as it would then be a pleasant spot for residence, and near the town; and it would also open a thoroughfare from Westminster Bridge for pedestrians, who must now either go a *mile round* by Kennington, or be subject to be poisoned, if they proceed the *nearer way* by the streets at the waterside, amongst the bone-boilers, potteries, and other nuisances, that are (strange to say, in this age of improvement and pretended refinement) permitted to exist.

The whole of the ground at Lambeth from the waterside to the railway ought to be cleared entirely. This would allow room to build new streets, running out at stated distances from the proposed waterside terrace, and would be the means of clearing out that which at present is nothing better than a huge manufactory of pestilential vapours, which, if they must exist, ought, at any rate, to be thirty miles from the metropolis on some common by themselves, and where the vapour would soon be dispersed.

READER.

SMOKE FROM BATHS AND WASHHOUSES.

THE Paris shoeblack, as the story goes, trained his dog to dirty the boots of all passers-by, and thus secured a thriving business. The managers of the St. Martin's Baths and Washhouses seem to think his example worthy of imitation, and after crossing Leicester-square during a south wind, the smoke from their chimney has rendered a bath almost a necessity. Your columns constantly notice cheap and effectual methods of rendering fires smoke-consuming, but before private persons are expected or even compelled to adopt them, is it too much to ask that they should be tried at these institutions? which have the advantage of good architects and ample means, which are the very types of modern improvement and progress, and which are intended to inculcate in all of us habits of cleanliness; or does not the old rule hold in this case, that "prevention is better than cure?" Moreover, the new system of wall-decoration adopted at the Panopticon promises to be an important addition to our architectural resources, but is in some danger of escaping notice through the dense masses of soot constantly poured on it. I am afraid the new baths and washhouses in Endell-street are also open to my remarks, but others are yet to be built, and if you would kindly call attention to this subject, I am sure your efforts would end in something better than

SMOKE.

CHURCH BUILDING NEWS.

Stratford-on-Avon.—The foundation-stone of a new church, to be dedicated to St. James the Great, was to be laid on 17th inst. The parish church being situated, as most visitors to Stratford will recollect, at the end of the town farthest from Birmingham, the proposed new church is to be located opposite the White Lion Hotel, at the corner of the Birmingham road. The stone is to be laid by the vicar. A considerable sum is still wanted for the erection.

Wolverhampton.—The Collegiate Church restoration is in progress. Two of the four new pinnacles are already placed on the tower, and the nave is unroofed, the windows taken out, and that portion of the structure will be pulled down and rebuilt from the roof of the aisles. A roofing of timber now covers the nave. The new roof will be carved.

Newmarket.—Although 1,700*l.* have been collected by voluntary subscription for the repair and enlargement of St. Mary's Church, the vestry have resolved not to allow any repairs to be begun in case they be called upon to pay some remainder beyond the sum subscribed.

Childwall (Lancashire).—The parish church of this place, dedicated to All Saints, is about to be re-pewed and partially restored under the superintendence of Mr. Raffles Brown. It is proposed to re-seat the nave, using up, as far as possible, the old oak of the present seats; to stall the chancel, removing the present unseemly galleries; and to build a new chancel, aisle, and vestry. The floor is to be laid with Staffordshire tiles (octagonal), on layers of peat, charcoal-lime and furnace-ashes, and concrete, the position of the gravestones being marked by brass plates inlaid in the flooring. The chancel will be laid in Minton's tiles, and a new pulpit, font, and altar-rail added. The draining will be effected with difficulty, under the circumstances of a crowded churchyard, 3 feet above the floor of the church, which is itself filled with graves. The church has the singular feature of a sloping floor to the nave towards the chancel, and no chancel step.

Werneth.—The foundation-stone of the new church of St. Thomas, Werneth, was laid on Thursday in week before last by the Bishop of Manchester. The style of the church is early English, and the church itself consists of a nave, aisles, and chancel. On the south side is a porch; and the north-west angle will be marked by a tower and spire, 120 feet high. The length of the nave and aisles is 82 feet by 44 feet 6 inches, and the church will furnish sittings for 598 persons. The whole of the interior and exterior dressings, including those of the spire, will be of Bath stone. The external face will be in stone from the Haddon Quarry, Waterhead, which will form a contrast with the Bath-stone dressings. The internal walls will be in stone from a quarry adjoining the site. The staining of the wood-work will be in imitation of the ancient mode of staining. The architect of the church is Mr. A. Trimen, of London, and the builder Mr. George Roberts, of Clifford, Yorkshire. The estimated cost of the building is 2,650*l.* of which about 2,500*l.* have been subscribed.

Wakefield.—The new church, now in course of erection on Primrose-hill here, is in the Decorated style of English architecture, and contains a nave, two side aisles, chancel, chapel, and vestry. The open stalls of stained wood will seat about 400 adults and 220 children. There is an east window of five lights, and a west four-lighted window. The tower and spire are at the west end of the south side-aisle, and will be about 110 feet high to the top of the weathercock. The church will be heated during winter by hot water. The roof, which is an open timber one, is expected to be placed early in September, and the church to be ready for consecration in January, 1854. Parsonage and schools are in contemplation. Freestone is used for the building, with dressings from Barnsley quarries. The works are under the direction of Mr. Charles Clapham. The contractors are Messrs. Pickles and Clarke. Some sanitary and ornamental improvements are being made on the north side of the parish church. A series of rickety houses on the north side have been lately removed to erect a row of shops on the site. By the removal, a view of the north side of the church has been obtained, and a movement has been organized to preserve the plot of land for ever unbuilt upon—partly from its affording a free passage of air through the densely populated neighbourhood,—and to plant it with evergreens.

Aigburth.—The new church of St. Mary, at Grassendale, Aigburth, on the Garston road, is opened. This church, which has been raised by public subscription, at a cost of about 3,000*l.* is built of the red sandstone of the district. The style is Decorated, and the church, it is estimated, will accommodate about 1,000, many free. The tower, with its spire, is about 100 feet high. The principal entrance is situated in the tower. The church, which has no gallery, is open to the roof, the rafters, pews, and all other wood-work being of stained deal. The floor of chancel is laid with encaustic tiles, and the ceiling painted blue, with an illumination of stars in gold. The chancel window, which is three-bayed, is filled with stained glass. The other windows of the church are of cathedral

glass, of a deep green tinge. The builders are Messrs. Arthur and George Holme. Mr. Arthur Holme is the architect, and the works have been executed under the superintendence of Mr. Morgan.

Perth.—The Cathedral Church of St. Ninian has been formally recognised by the Bishop of St. Andrew's as his diocesan church; and it is in contemplation to erect cathedrals in proper places in the dioceses of Brechin and Moray.

GENERAL RAILWAY JUNCTION IN LONDON.

AFTER the appearance of three articles on this question in your journal (Nos. of May 14, July 9 and 30, 1853), I was only deterred from urging other editors to bestir themselves by the consciousness that they would listen to your voice more than to my own. I beg of you to exert it. In a great case of social progress—free from party politics or religion—what could not the press accomplish when moving as one man?

The necessity for joining our railways in London gets so glaring, that, though in the land of free enterprise, I wonder the Government does not step forward. The union once effected, it need fear no cry of "repeal." To describe *all* we suffer for want of it were a task indeed. Let directors and projectors be assured that, in providing rural districts with branches and junctions, in the wild hope of attracting population and creating traffic, they will, as of yore, burn their fingers. In London are population and traffic ready to hand, crying for accommodation—a mine well worth opening!

I find it impossible to improve on the simple, yet comprehensive plan of union laid down in your pages, the communication through and about London seems perfect. I cannot help depicting some of the benefits that would flow from its realization—such as London able to manage with its *one* cattle-market,—landborne coals finding their way to many a strange hearth,—cab-strikes deprived of much of their sting,—the dead no longer deposited among the living, but afforded Christian burial in a cemetery—distant, yet readily reached, from all parts of town; established, too, on land bought at a far easier rate than what is demanded near home.

In full hope that you will keep an unsleeping eye on this matter, I heartily subscribe

ROUSE THE PRESS.

SHAKSPEARIAN MEMORIALS.

AT a time when the greater part of Europe has been suffering from the suspense and anxiety arising out of national dissensions, it is the more gratifying to observe indications of the opposite nature; and thus we are led to appreciate the more highly those feelings which tend to unite civilized nations in the bonds of amity,—especially when founded on a common ancestry.

This reflection was recently excited by meeting accidentally with several American gentlemen just arrived in England, who were journeying to the shrine of Shakspeare, finding by their conversation how highly they appreciated his renown and venerated his memory, and the pride they felt in claiming him and many other English worthies as amongst their progenitors, thus associating themselves with their world-wide renown. Besides this, the remarks of my fellow travellers on the general aspect of the country and people, all tended to show the same fraternal and friendly feeling towards the land and nation of their forefathers. *I* was also on my way to revisit Stratford-on-Avon, after an interval of nearly twenty years, and I was much gratified in witnessing the good works that had been effected at the church, and the progress made towards restoring it to its original and proper condition. But there is still much to be done to render it complete, and I presume that as usual it remains unfinished for want of funds. In contemplating the interior of this fine church, it is strikingly evident that there is a want of repose and solemnity, owing to the excess of light, particularly from the clear-story of the nave. The large amount of aperture comprised by the ranges of windows was adapted to the reception of stained or painted glass, by which the light was mellowed and subdued to its proper proportion; and the great desideratum now is to restore that portion of the original arrangement, so essential to the harmony and beauty of the whole.

It has been a frequent practice of late years to introduce *memorial windows* in churches, combining the expression of reverential feeling with the adornment of the edifice; and it naturally occurred to me that the same feeling might suitably be exercised and advantageously applied in the present case; that thus the American nation might have the opportunity of evincing their veneration for the memory of Shakspeare, associating themselves with his renown, and at the same time contributing towards the adornment of his shrine. To give effect to this suggestion, it might be arranged that to some of the most distinguished cities of the United States should be assigned the task or privilege of introducing certain memorial windows in the church at Stratford, of designs suitable to the building, containing inscriptions to record that each was the offering of the particular city or community, at whose expense it was erected. The British public have set a noble example by the zeal and liberality with which they have proceeded so far in testifying their veneration for the memory of the immortal bard; and a happy opportunity remains for our Transatlantic brethren, who glory in the honour of a common ancestry, to make common cause with us on this occasion by completing the restoration of his shrine. I feel assured that it is only necessary to present this suggestion to the notice of the enlightened or literary circles in the United States, and they will be readily induced to form committees in the several cities to raise the means and organize the measures for carrying this object into effect; and thus a further and gratifying evidence will be afforded of the community of taste and feeling, and the friendly disposition that should ever unite the Anglo-Saxon race on both sides of the Atlantic.

C. F.

PROVINCIAL NEWS.

Banbury.—The town-hall recently founded will be erected in the Cow Fair, and the building is intended to be erected of Bath stone, of two stories in height, with arched cellars beneath, and raised upon a chamfered plinth of Headington stone. The ground-floor will contain the council-chamber, the police-room and lock-up cells, and an office for the Board of Health. The upper or principal floor will contain the Common Hall, and will be approached by a stone staircase in the tower—which will form a distinguishing feature in the building. This room will be 60 feet long by 34 feet wide, with a curved recess for the Bench: the division to form it is intended to be moveable, so as to give accommodation for concerts and public meetings, and it is expected that the room will contain 600 persons. The building is in the Gothic style of the early part of the fifteenth century, the windows having traceried heads and mouldings in accordance. The tower is covered with a semi-spiral top, intended to serve for the purpose of ventilating the building. The front of this tower has a stone balcony, for speakers at elections, or for addressing a larger audience than the hall would contain. The builder has contracted to erect it for 2,586*l.* and it is expected to be finished in June next. In laying the chief stone, a brass plate, on which was the following inscription, was screwed over a bottle holding coins, &c.:—"This corner-stone of the Banbury New Town-hall was laid by Thomas Draper, mayor, the 29th day of July, in the 17th year of the reign of Queen Victoria, A.D. 1853. Architect: Edward G. Bruton. Builder: John Chesterman."

St. Alban's.—A corn-exchange and assembly-room are about to be erected in this town, on a site in the market-place, where buildings are now being pulled down for the purpose. The tenders varied, it is said, from 1,000*l.* to 2,000*l.*: that of Mr. Biggs, of St. Alban's, being the lowest, was accepted.

Ardeley.—The Wood End Chapel School, according to the *Herts Mercury*, was to be opened on the 16th inst. The entire cost of the building, and its fittings, &c. is 575*l.* of which 452*l.* have been subscribed.

Barnstaple.—At a recent sale of landed property here, the greater part was sold at more than thirty years' purchase—one lot at thirty-two, another at thirty-six, a third at forty-one, and a fourth at forty-five.

Macclesfield.—The inhabitants are in danger, it is said, of losing the expected public parks, the town council stumbling at the cost of maintaining them. 700*l.* a year will be required. One of the council proposes that all who use the park should give a day's labour to keep it in repair.

Newcastle.—The *Staffordshire Advertiser* reports, that at a recent special meeting of the Newcastle town council, 1,500*l.* were voted in addition to the 5,000*l.* provided, for a new covered market, and that they resolved to exclude a police establishment, intended to have been added. The reasons alleged are that the carrying out of the original plan would now cost several thousand pounds beyond the estimate formerly made by the architect, Mr. Chapman, partly attributed to additions made from time to time, and partly to the increased rate of labour as well as materials. This is, therefore, another instance of the way in which a rise in wages and in prices of materials operates on the building trades in checking the disposition of their employers to build. It is probable that there was even a risk of the whole plan being thus cast aside.——In reference to the recommendation before noted, that the engineer to the local board of health should alter the six-inch drains for the new sewerage, into drains of larger diameter, and otherwise act in conformity with the reports of Messrs. Arnott and Page, on the Croydon drainage, the engineer, Mr. Lee, has written to the board, saying, "Your Board is aware that I am not in the slightest degree responsible for the Croydon drainage, and therefore I cannot undertake to adopt the suggestions contained in a report having reference to that town; but I can promise what will doubtless be equally satisfactory to your Board, that, so long as they continue to give me their confidence, no such errors as those of Croydon shall be committed at Newcastle;" where, we presume, there are no mysterious "Bournes" to overflow the drains, even once in eight or ten years.——A sum of 900*l.* has been collected, inclusive of 500*l.* voted by the council, for a parsonage-house for St. George's parish, and the council seem to think this sum sufficient, and that the parsonage should now be erected.

Melton.—The foundation-stone of a new infant school was laid on the 4th instant by the Archdeacon of Leicester. Mr. R. W. Johnson is the builder.

Cheetham.—The Earl of Derby has granted a site for a town-hall at Cheetham, on the condition that the plans are approved by him, and that the premises shall be for ever appropriated to public purposes.

Liverpool.—The new music-hall in Bold-street is almost completed. It is in the Italian style, from designs furnished by Mr. Arthur Holme, architect. The walls are of brick, with rusticated facings of light-coloured stone. It is a story higher than the old hall on the same site, the lower one being intended for mercantile purposes. The hall will seat 750 persons. Some of the windows are being filled with stained glass, by Messrs. Pilkington, of St. Helen's. The lighting will be by "sun burners," or all from the ceiling. The orchestra will accommodate from sixty to seventy performers. The hall will be warmed by heated air. In digging the foundation the workmen came upon the first stone of the old building, the copper plate on which bears the following inscription:—"The first stone of this building, dedicated to music, was laid on Saturday, the 30th of July, 1785, by Wm. Goodwin, esq." This has been put into an oak frame, with the words engraved beneath—"Rebuilt 1853. A. H. Holme, architect; A. and G. Holme, builders;" and is to be hung up at the head of one of the staircases in the new hall. The entrances to the hall have been purposely arranged for free and rapid egress or ingress. There are three entrances leading to lobbies running entirely round the hall. The architect's designs have been carried out under the superintendence of Mr. Morgan, as clerk of the works. Mr. Jones, under the architect's directions, executed the modelling; and Mr. Clitheroe was the decorator. The cost of the re-building has been about 3,200*l.* and the entire cost, inclusive of the original purchase, 10,000*l.*——The alterations and improvements in the General Post Office are now approaching completion.

——The new line of street running from the south-west corner of the Custom-house towards the south docks is progressing, and various other minor improvements in different parts of the town are in course of formation.

Southport.—We hear that a new town is about to be built on the coast between Southport and Formby. The founder is Mr. Fresh, of Liverpool, and the town itself is to be called Freshtown.

IMPORTANT TO CEMENT MERCHANTS AND BUILDERS.

BROMPTON COUNTY COURT.

Neville v. *Harding.*—The plaintiff in this action sought to recover 12*l.* 10s.

Mr. Keene, solicitor, said his client was a cement merchant of Isleworth, and the defendant was builder. Some time since the plaintiff supplied the defendant with 100 casks of cement, which were duly paid for, less the value of the casks, which the defendant had failed to return. It was for the value of these casks, at 2s. 6d. each, the present claim arose. He apprehended the defence would be, that it was the duty of the plaintiff to fetch these casks away, and not for the defendant to send them home. He would show that it was customary for builders to return the casks, or pay for them. He called the plaintiff, who deposed to the above, and in cross-examination admitted he had not sent for the casks, as it was not customary in the trade to do so. The casks were worth 2s. 6d. each.

Mr. Roberts said, it was far from being customary for purchasers of cement to return the casks at their expense. The whole of the casks were ready for plaintiff whenever he chose to send for them. He, however, would no doubt prefer 2s. 6d. for each cask to having them. A brewer might as well expect all his customers to return their casks as a cement manufacturer.

The defendant said, it would be an expensive affair for him to cart the 100 casks from West Hill to Isleworth, and was one which builders had no right to bear. The casks were not worth 1s. each.

The plaintiff said, if the case were adjourned, he would produce cement merchants to show that it was customary for builders to return the casks.

The Judge said it was an idle dispute. There was nothing like a detention of the casks. He was also of opinion that, in the absence of an agreement to the contrary, the party who sold the cement had a right to fetch his casks away.—Verdict for defendant, with costs.

BUXTON BATHS, DERBYSHIRE.

THE warm mineral springs of Buxton have been celebrated for their medicinal virtues from time immemorial. The water is poured forth in vast and unvarying quantity, estimated to be probably no less than 200 gallons per minute. More than 120 gallons per minute are supplied to the range of baths, which are made use of at the naturally elevated temperature of 82 degrees, Farenheit. A large supply is required for an equally extensive range of baths in which the medicinal water is made use of at a higher degree of temperature; a considerable supply of the water is required for the well, at which the water is taken internally, and a large but not estimated quantity of the water is allowed to run to waste. The supply of this great medicinal agent is so large, that the water is constantly running through the baths and well; the temperature, purity, and medicinal properties being thereby maintained.

Charged with about 206 cubic inches per gallon of nitrogen gas, in addition to the saline constituents which serve to distinguish mineral from atmospheric waters, the Buxton tepid water is clear, bright, and buoyant, primarily exciting, and stimulating in its effects upon the system, and eventually exercising a marked alterative action on those persons who bathe in it, or drink it statedly for any length of time. In cases of rheumatism, its effects are known to be curative. For gout, neuralgia, spinal weakness, and the like, its use is found to be attended with very beneficial results. In cases of injury of chronic character, as in the instance of old sprains which time and skill, and the efforts of nature have failed to restore, attended with pain and a crippled and imperfect use of the injured parts, the baths of this mineral water have proved in most cases to be infinitely valuable.*

* Dr. W. H. Robertson, of Buxton, has published some observations on the subject.

Surrounded on all sides by the great manufacturing districts of Lancashire, Staffordshire, Nottinghamshire, and Yorkshire, readily accessible to the large number of persons who work in those great hives of British industry, and who may be peculiarly subject to suffer from those diseases in the relief of which the Buxton waters prove to be so efficacious, and placed at an elevation of 1,000 feet above the level of the sea, on the borders of a great formation of mountain limestone, and close to an extensive gritstone formation, with a dry and bracing mountain climate, the baths have, at intervals of time, had to be more and more extended and improved, in order to meet the growing wants and requirements of the public. The baths, which were constructed of sheets of lead and beams of oak, in some extremely remote time, and which, if enclosed by walls from public observation, would seem to have been situated in roofless structures, were early removed to make way for constructions of brick and concrete; and these, in their turn, about the time of Queen Elizabeth, were replaced by vaulted apartments of stone, enclosing baths lined with masonry, and floored by the natural rocks of black marble, through the interstices of which the mineral water emerges to the surface; and, finally, notwithstanding many and considerable subsequent additions, these have proved to be too few in number, and otherwise unequal to the wants and expectations of the large numbers of invalids who resort to Buxton; and the noble proprietor of the baths and of the principal adjacent property, his Grace the Duke of Devonshire, has, in accordance with the example of his forefathers, the owners of the property for many generations, erected, under the judicious direction of Mr. Henry Currey, architect, the new baths and buildings to which the attention of our readers is now directed. Apartments had to be kept dry, and to be ventilated duly, through which such very large quantities of water are being poured continually; an independent and constant supply of water had to be afforded to every one of the baths; and a limited amount of space had to be turned to the utmost possible account; and all these objects have been attained in a very satisfactory manner.

We proceed to give a technical account of the structures:—

The baths consist of two distinct buildings, one on the north and the other on the south side of the Buxton-crescent, which was erected under the direction of the late Mr. Carr, of York, between 1779 and 1784, both being approached under cover (a point of much importance for invalids) from the arcade surrounding the crescent.

One is called the "natural wing," from the water being used there at its natural temperature; the other the "hot wing," where the temperature is artificially raised to any required extent. The tepid springs issue from the limestone rocks immediately under the site of the natural wing, and some of the baths are supplied through perforations in the marble bottoms, which are laid hollow over the rock. The baths are built at such a level that the height to which the springs rise forms the required depth. A reservoir is formed at the principal source, and the water flows continuously from thence to the whole range of baths. The water is also led from the same service to a large reservoir under the hot wing to supply that building, but here the water has to be pumped up into tanks to supply the different baths.

It was deemed of great importance to have the natural wing built immediately over the springs, so that the gases in the water might escape as little as possible. The ground is of an irregular shape, and part of the baths are formed in the lower story of the "Old Hall Hotel."

The plans sufficiently explain the general disposition. Wide corridors lead to both divisions, and are sufficiently commodious to serve as waiting-rooms. Two dressing-rooms are provided to each private bath, which gives an opportunity of working them more expeditiously. Douche, shower, vapour, and commodious charity baths for both sexes are provided in each wing with distinct entrances. A room for drinking the tepid waters from St. Anne's Well, and another for drinking a strong chalybeate brought from a hill adjoining, are provided in the same building.

The natural wing, from the character of the site, exhibits only one façade, executed in the stone of the neighbourhood of a rich warm colour, and there being no windows or doors in it, three fountains in fluted niches are introduced to give life to the elevation. The hot wing, which exhibits two considerable façades, is constructed in iron and glass, producing a variety, and enabling the architect to give the utmost degree of lightness and cheerfulness to the interior.

The roofs are formed on the "ridge and furrow" principle in 9 and 10 feet spans; the gutter-plates lying immediately on the top of internal partitions, or on light ornamental iron girders over large baths. The whole is glazed with Hartley's "rough plate," 24 oz. to the foot, in one length and about 15 inches wide. Sun-blinds are provided internally suspended from the ridge to rods fixed to gutter-plates with the facility of being drawn at pleasure. The baths are lined with Rufford and Finch's patent glazed porcelain bricks built in with the ordinary brickwork. The bottoms are formed with veined Sicilian marble, and the whole of the private and douche baths in the hot wing are formed with similar marble. The natural wing is warmed by means of hot water, and the hot wing by steam from the boilers.

The general works have been executed by Messrs. Sanders and Woolcott, of London; the boilers, tanks, warming-pipes, &c. by Mr. William Jeakes, of Bloomsbury; the iron work for the hot wing by Mr. John Walker, of York; and the plastering of the hot wing by Mr. Riddell, of London.

The whole, as we have already said, has been erected at the cost of his grace the Duke of Devonshire, from the designs of Mr. Henry Currey.

REFERENCES TO PLANS.

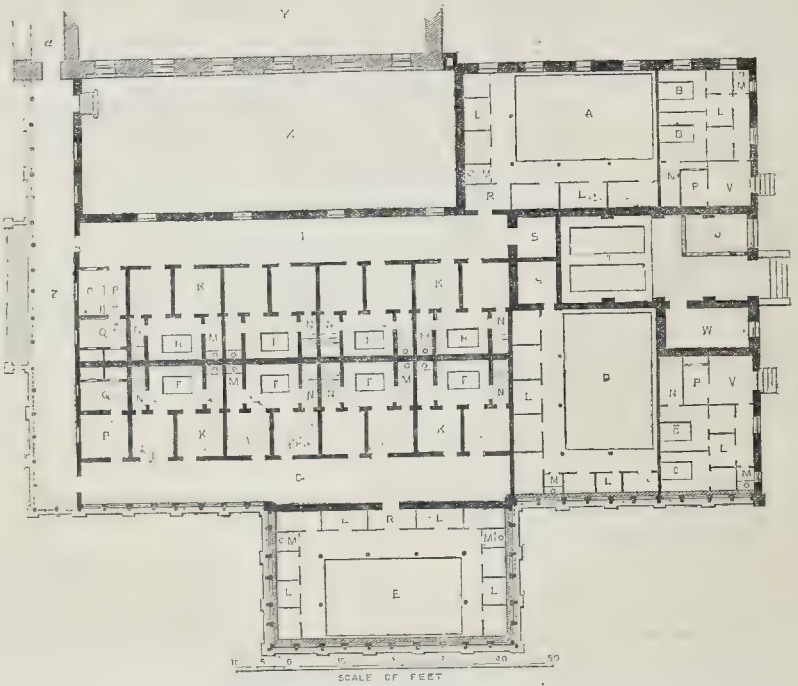
Hot Wing.

A. Ladies' public bath.
B. Females' charity baths.
C. Males' charity baths.
D. Gentlemen's public bath.
E. Public plunging-bath.
F. Gentlemen's private baths.
G. Corridor and waiting-room.
H. Ladies' private baths.
I. Corridor and waiting-room.
K. Dressing-rooms.
L. Dressing-boxes.
M. Water-closets.
N. Douche closets.
O. Ticket-office.
P. Bath-keeper's offices.
Q. Store-rooms.
R. Lobbies.
S. Drying-rooms.
T. Boiler-house.
U. Engine-room.
V. Waiting-rooms.
W. Coal-place.
X. Garden.
Y. The great hotel.
Z. Arcade.
a. Crescent arcade.

Natural Wing.

A. Ladies' public bath.
B. Women's charity bath.
C. Men's charity bath.
D. Gentlemen's public bath.
E. Gentlemen's private baths.
F. Ladies' private baths.
G. Dressing-boxes.
H. Dressing-rooms.
I. Gentlemen's corridor and waiting-room.
K. Ladies' ditto.
L. Lobby.
M. Water-closets.
N. Douche closets.
O. Furnace-room.
P. Drying-room.
Q. Store-room.
R. Bath-keeper's office.
S. Chalybeate drinking-well.
T. St. Anne's drinking-well.
U. Crescent arcade.
V. St. Anne's Hotel.
W. Dining-room.
X. Yard.

PLANS OF BUXTON BATHS.



SCALE OF FEET

THE HOT WING.



SCALE OF FEET

THE NATURAL WING.

THE BATHS AT BUXTON, DERBYSHIRE.—Mr. Henry Currey, Architect.





Notices of Books.

The Illustrated Weekly Record of the New York Exhibition of Industry of all Nations. Edited by Professor B. Silliman, Jun. and Mr. C. R. Goodrich. Published in the Crystal Palace, by G. P. Putnam and Co. 10, Park-place, New York.

The first and second numbers of this very creditable publication are now before us. It is got up much in the style and on the scale of our own *Art-Journal* record, and the name of Professor Silliman is itself an assurance that it will be no mere catchpenny publication, but worthy of its ostensible purpose. The artistic department of the work is under the superintendence of Mr. C. E. Dopler. Each number will consist of four double-columned pages of letter-press, four pages of illustrations, and four pages devoted to the circulars of exhibitors. The cost of the double number now issued (I. and II.) is 25 cents. It contains views and plans of the building, with other illustrations.

Papers relative to the Obstruction of Public Business, and the Organization of the Civil Service. By Arthur Symonds, Esq. Printed for private circulation.

This is an original and elaborate disquisition on the organization of the various departments and offices connected with the Government. Mutual co-operation and intelligence, centralization, and consistent unity of action are the main features of the author's scheme, so far as we can gather from a cursory examination of a work scarcely within our province. He would have no such thing as independent and often conflicting or reiterated and supererogatory action in different departments of the state. All should be intercommunicative, and. practically as well as theoretically, subordinated to the Civil Commander, the Premier. All should work together to the one common good. A council, composed of the working heads of each department, should have periodical meetings for mutual understanding and co-operation. Officers should be formally trained in their duties. All sorts of intelligence and information regarding each office should be collected from every other by special officers, and indeed from all quarters—from the press, the law courts, or the country at large. The whole scheme he regards as a return "to the state of subordination to one scheme of organization which at one time characterised our institutions;" but we should doubt whether so perfect, so potent—shall we say so despotic—a system of centralization ever did actually exist in this country. Indeed, the author seems to admit that, without a like organization of the legislature, such a centralization of the executive would be dangerous. But how is the balance to be fairly struck? Is the legislature capable in its nature of being so *potentialized*, if we may so call it, as the executive must needs be under such a scheme? The book, however, is full of valuable suggestions. As an instance, we may quote from what is said as to the connection, or rather the want of connection, between men of science and art, and the civil service:—

"We sadly want, in all branches of the Civil Service,—in administration, in inquiry, in legislation, in judicial matters, in financial matters, in official matters, in special matters, in local matters, in superintendence and control, and in registration and record,—the special aid of scientific men; and it is a matter of the highest concern to establish a means of associating them in action with the practical persons of all those departments of business.

It would be worth while, as a matter of State policy, and it is due both to the *Savans* and to the artists, that they should be distinctly recognized, and made more available in the Civil Service.

An honourable body of such persons might advantageously be associated with the committees and the other departments of state.

It would be prudent to give them a position because that would establish a higher degree of responsibility; and by means of their experience and practice, a higher degree of value to their surveys, reports, and estimates.

To the great body of legislators, official personages, judicial personages, and lawyers, it would be productive of much advantage; for, by means of such intercourse, their information would be extended, and their powers of usefulness augmented,—they could not only better ask questions, but better make use of them.

It would also produce great national results in the popular estimation of scientific knowledge, which would show itself in an improved action, and in an improved tone of sentiment in many directions."

On the subject of the press, too, in relation to the civil service,—of common and special libraries connected with that service,—and of surveyors of buildings, roads, and works, &c. &c. there are suggestions, the whole constituting a quarry of deposits from an extensive practical experience, from which many useful reforms in administration may be dug, even though the elaborate and comprehensive edifice contemplated by the author should never be completed.

Mr. Symonds is known to our readers as the Registrar of Metropolitan Buildings.

Miscellanea.

Prevention of Intramural Burial.—I hope that not only yourself but many of your readers may remember that I was favoured, in 1846 and 1847, by the insertion in the *Builder* of many articles, partly serial, on the state of the London churchyards, the result of ten years' frequent and leisurely observation. Such being the case, may we not both congratulate the metropolis, if not by its influence large country places also, on the fact that the creditable activity of Lord Palmerston has made up for the remissness of former ministers or home secretaries, five or six in number? It is said, and I expect very truly, that his lordship made us politically feared by enemies abroad. The association of "Palmerston and extramural burial" will go down to posterity as bloodless enmity to fever, pestilence, and indecency. Some very bad grounds, as the parochial ones of Clerkenwell, and culpable dissenting or general ones, as the infamous "Bunhill-fields," and of which there is another in Golden-lane, or "Martin's," in which about *fifteen hundred* bodies were buried yearly in less than *half an acre!* near the Old Kent-road, have not yet come under notice, but, of course, they will do so. Some venerable and useful associations must go with the change,—the sobering toll of the funeral bell—the sight and sound of "dust to dust," assuaging pride and mollifying enmity by its proof of our community and littleness. But the claims of health and decency are paramount and imperative. All good that can be retained ought to be. We shall not be guilty of regrettable Parisian taste in making an "exhibition" of skulls and bones, or "catacombs." I ventured to suggest in the *Builder* that, for at least a generation or two, as much respect should be paid to our old churchyards as to "the sites of our ancient castles."—J. D. Parry.

Steam Washing and Drying Machinery.—We have spoken before of washing-machines, but there seems to be something new in the following, as an adjunct to our "Baths and Washhouses." A New York correspondent of the *Boston Transcript*, in describing the new St. Nicholas Hotel in that city, thus refers to the steam-washing machine in the basement of the building:—"This is something new under the sun. Four hundred pieces are thrown into a cylinder half filled with water and soap-suds. This is thrown into rapid revolution by a small steam-engine. Steam is then let into the cylinder under the water and clothes, which rises them out of the water, passing through the pores of the fabric, and out at the top of the cylinder. The clothes are thrown down again by the pressure of steam into the suds and so on. The changes thus produced by the rapid revolution, and by the passage of the steam through the clothing, washes them perfectly clean in the space of ten minutes. The clothes are then thrown in a body into another cylinder, wrung by its revolution, and then, by letting in hot air, perfectly dried, ready for ironing, in seven minutes. The whole time occupied in washing, wringing, and drying, is but seventeen minutes. The finest cambrics can be thus washed without wearing them out, or injuring the texture, as by rubbing."

Railway Matters.—We are glad to be able to announce, that a considerable portion at least of the railway ring which it is so desirable to complete around the metropolis is now in continuous operation from Fenchurch-street to Kew. This rather circuitous route, the distance from Blackwall terminus to Kew being 18½ miles, has been publicly opened for passenger traffic, the newly-opened portion of the line completing the half circle round London. After leaving the old line at Hampstead-road station, the trains take the London and North-Western, and proceed nearly as far as Willesden, when they go off to the left. The line then pursues its course over the Great Western, and through the more western portion of Acton. It continues its way in almost a straight direction to the loop line of the South-Western, and terminates within a short distance of the waterworks near Kew Bridge.——The extensive hotel now in course of erection at the Great Northern station, at King's-cross, is rapidly drawing towards completion. It will be five stories high, 190 feet long, and 54 feet wide, exclusive of vaults and out-buildings.——Messrs. Day and Laylee, of Ashford, have taken out a patent for semi-tubular wrought and cast-iron transverse sleepers for railways. The sleepers are laid with their concave side downwards, and in those of wrought iron an opening is left in the centre for packing, passing other rails for crossings, and also for convenience of drainage. In the cast-iron sleeper this is accomplished by casting it in two pieces, and connecting them by means of wrought-iron bars.——The contract for the formation of the Auckland branch of the York, Newcastle, and Berwick Railway was given to Richard Cail, of Newcastle, on the 22nd ult. This branch is fifteen miles long, will cost about one quarter of a million, and will open out an extensive field of coal.

Paddington.—The histories of all the suburban districts of London are interesting and suggestive; nor does Paddington—the youngest among them, which only fifty years ago contained but 324 houses and a population of 1,881 souls, and now comprises 6,103 houses and 46,306 inhabitants—yield to any in interest and importance. There is no mention of Paddington in Domesday Book,—a proof to us that at the period of the Norman invasion it had not been reclaimed from the adjacent forest. As to the charters professedly granted by Edgar to the monks of Westminster, and which refer to lands here, antiquaries from Hickes to Kemble have greatly doubted their authenticity; and the absence of all reference to this locality in the Domesday account of the possessions of St. Peter's, Westminster, seems to us conclusive on the subject. Perhaps soon after the Norman Conquest, certainly early in the following century, the first rude collection of huts arose; and being in the immediate vicinity of lands held by the Convent of Westminster, the dwellers would naturally enough be desirous to place themselves under the protection of a community wealthy and powerful as the feudal lords, but characterized—as was the case with all the monastic establishments—by far more liberal treatment of the tillers of the soil. The first authentic document is one preserved by Maddox, dated in the thirty-first year of Henry II.; and in it two brothers, named Richard and William of Paddington, transfer their "tenement"—the extent of which is not mentioned—to the Abbot and Convent of Westminster. The Abbot, Walter of Winchester, dying in 1191, bequeathed this possession for the purpose of applying the proceeds to the expenses of his anniversary, the 27th of September.—*Athenæum.*

Telegraphic Progress.—At the last half-yearly meeting of the Electric Telegraph Company, the accounts showed a balance of profit of 13,228*l.* 15*s.* 1*d.* out of which a dividend of 6½ per cent. was declared.——The Magnetic Telegraph Company are carrying on their works through the midland district with rapidity. Operations were commenced in London in February last, since which time the wires have been laid along the turnpike roads through St. Alban's, Coventry, &c. to Birmingham, and thence through Walsall, Cannock, and Stafford. From Stafford the workmen proceed to Stone, Macclesfield, and Manchester, where the connection will be completed with the works also in progress through Preston, Carlisle, Edinburgh, to Port Patrick, whence, by means of the submarine rope, communication will be conveyed to Donaghadee, in Ireland, where several hundred miles of wires are already laid. The coil, which is laid in narrow wooden troughs through the country, and in iron ones in the towns, consists of ten wires, each coated with gutta percha, and the whole wrapped with twenty four strands of tarred hemp, the coil not exceeding an inch in diameter, and giving the apparatus for ten distinct means of communication. The telegraph will be worked by Mr. Henley's patent instruments. The line is laid at the rate of about one mile and a half in a day.——The Submarine and European Telegraph Company have announced their opening to Birmingham at a great reduction in the scale of charges. Messages of twenty words are to be conveyed for 1*s.* and it is to be hoped the experiment will commence a reform to redeem England from the reproach of being totally behind America in this system of communication.——A vote of 30,000*l.* just granted in committee of supply by the House of Commons, is intended to defray, to March, 1854, the expense of laying down an independent line of telegraph wires from London to the continent, and to enable the Government to join a convention recently concluded between France, Belgium, and Prussia, for regulating the transmission of messages by telegraph, and lately entered into by Messrs. J. and J. Brett, inventors of the submarine telegraph, with those nations on behalf of the European Telegraph Company.

NATIONAL FREEHOLD LAND SOCIETY, CARDIFF. A meeting was held last week at Cardiff, to receive a deputation from this society to explain the intentions of the society, in reference to their estate, near Cardiff. This estate consists of 130 acres, forty of which are now mapped out and apportioned to the members. The price of the land, including the conveyances and all other expenses, is 30s. per foot frontage, with a depth varying from 150 feet to 180 feet. No house is to be built on the estate of a less value than 150*l*. It is to be drained on the pipe system. Mr. P. Price is the local agent, and Mr. J. W. Johns the engineer. We understand that this gigantic society numbers 60,000 shares, 105 estates, in various parts of the country, and turns over no less a sum than half a million of money per annum! The Freehold Land movement is but very partially understood by the public, and, it may be said, is still in its infancy. These societies, though originated for a political object, seem to have outlived their first intention, and may now be regarded as investment societies, destined to work a great change, whether for good or evil, in the social and moral aspect of the country, by throwing the ownership of land into the hands of the people.

THE NATIONAL GALLERY.—The report of the Select Committee of the House of Commons on the National Gallery has been issued. The committee have divided the subject under the following heads: 1. The constitution and general management of the gallery; 2, the management of the gallery, as specially connected with picture-cleaning; 3, the changes and improvements to which the system may require to be subjected; and 4, the site, present or future, of the gallery, and the expediency of combining the national collections of monumental antiquity and fine arts in one building or group of buildings, and under a single system of management. The committee are of opinion that the site of the present gallery is not well adapted for the construction of a new gallery, and they recommend that the offer made to the public in the estate of Kensington Gore, purchased jointly by the Royal Commissioners of 1851, and by grant of Parliament, be accepted. They have considered the vexed question of picture-cleaning, and made a number of suggestions as precautions for the future. They recommend that a system of management by a board of trustees should be continued, and that they should be appointed by the Treasury; that the office of keeper of the gallery should be abolished, and that a salaried director be appointed; that a fixed sum be annually proposed to Parliament for the purchase of pictures, and placed at the disposal of the trustees; and further, they recommend that a Royal Commission be issued on combining the various artistic and archæological collections in the British Museum, so that a new national gallery should be commenced with all convenient speed.

GUTTA PERCHA VARNISH.—It is proposed to preserve pictures, engravings, charts, deeds, and other writings, such as bills and notes, from alteration by means of a thin and transparent varnish of gutta percha. Fraud, it is suggested, might be thus prevented in the case of bank bills, deeds, &c. as "no alteration could be made on the face of the bill without removing the coating, which it would be impossible to do without destroying the whole." As to this, however, there may be some doubt. The varnish might probably be removed by means of its solvent naptha where required, and replaced after altering the document.

ST. MARY'S, BRIDGEWATER.—In respect to a statement in a local paper, quoted by us on 30th ult. Mr. Carver, the county surveyor, writes us to say that he proposed no such tinkering as is named, at 800*l*. cost; neither did he advise the parish to fall back on Mr. Brakspear's plan for a new tower and spire, unless his estimated cost could be substantiated: then, he adds, I stated it would be better to rebuild to his design than repair. The following, Mr. Carver states, was his estimate and report, dated 7th June:—

Iron bands to secure the tower and spire from spreading	£91	2	0
Repairs of spire	113	10	0
Repair and restoration of tower	286	0	0
New and improved arch to nave from tower	180	0	0
New gallery and sash-screen under, and a new window to light it	112	11	0
	£783	3	0

A meeting appears to have been lately held, at which the architects conferred together, and modified each other's proposals to some extent, so that the vestry-committee, in reporting proceedings, state, as the result of the whole, that they recommend the vestry "to act on them at once, either by adopting Mr. Hutching's views and lay out 250*l*. for repairs and arch, or Mr. Carver's plan for repairs at 390*l*. and improvements and arch, 368*l*.—together (less grant), 658*l*.; or by adopting Mr. Brakspear's plans with an outlay of 1,700*l*."

QUIT-RENTS AND FINES FOR ENCROACHMENTS.—An action tried in the Nisi Prius Court at Devizes, on 5th inst. involves a question important to many country towns; and a correspondent conversant with the facts directs our attention to them. The action was nominally Rennie *v.* Reeves, but in reality Goddard *v.* Wheeler. Mr. A. L. Goddard, M.P. is the lord of the manor of Swindon, and Mr. C. A. Wheeler is a resident in Swindon, and rather "a troublesome customer" to the plaintiff, politically speaking, and to all "defenders of the filth" in Swindon, sanitarily speaking,—a man, in short, who, according to Dickens, in his *Household Words* of 21st May last, on "Cess cum-pool-ton," *alias* "Swindon," having much leisure, as a retired druggist, "spends it all, to the great distress of many quiet neighbours, in agitating for the righting of everything that he thinks wrong in the parish of Cess-cum-pool-ton," and "writing with equal readiness long letters to the *Edinburgh Review*, the *London Times*, the *Bengal Hurkaru*, or the *Land's End Weekly Telegraph*; all designed to call attention, from every quarter of the empire, to the abuses that exist in Cess-cum-pool-ton." Zinzib. Rad. therefore, as Dickens says he is called, was "fair game" in the eyes of not a few of his neighbours, who seem to have hoped they "had him on the hip" in the imagined case of abuse of privilege at issue. Reeves, a tenant of Wheeler's in the High-street of Swindon, ran up a shop-front in advance of his dwelling, somewhat in our own Newroad style, we presume, and was immediately brought up by the lord of the manor, who maintained that as a quit-rent of 1s. 8d. a year was payable on the posts and chains which stood in front of said dwelling, the erection of a shop-front here was an abuse of privilege, entitling him to claim the whole of the frontage out to the posts and chains. Witnesses swore to the payment *for the posts and chains*; but amongst Mr. Wheeler's deeds, which extended back to 1631, was found a clause which completely "settled," not the restless "Ginger-root," but his manorial "lord," for it declared the quit-rent to be "payable upon the property, or some part thereof;" and it was well for some of Zinzibar's antagonists that it was so, for he had declared that if his tenant was obliged to pull down the building he would play at "Prussian exercise" not only with a whole row of just such buildings, but with a new market-house which projected 10 feet over the Queen's highway. In summing up in favour of the defendant, the judge (Baron Martin) said that if 220 years' undisturbed possession did not give Mr. Wheeler a title, then no man would be safe. He accordingly directed the jury to give a verdict for the defendant.

SUBSTITUTE FOR GUTTA PERCHA.—Our prediction that substitutes for gutta percha would yet be got is being fulfilled, though not yet in the desirable and abundant way in which it will probably yet be producible in our own country. In the meantime, according to the *Journal of the Society of Arts*, a milky juice has been extracted from the Muddar plant of India (*Asclepia gigantea*) by Dr. Riddell, of the Nizam's army, which can be prepared into a substance closely analagous to gutta percha. The plant itself, too, yields a fibrous substitute for hemp and flax. A substance not unlike gutta percha is also procurable from the juice of the Euphorbia Tirucalli. The Muddar and the Euphorbia are both common hedge-plants, and grow on the poorest land. We hope, however, to see our chemists ere long producing artificial gutta percha, and caoutchouc as well, from common bitumen, pitch, and rosin, with the aid, perhaps, of mucilaginous substances equally cheap and common.

STATUE OF BERNADOTTE.—In the royal foundry at Munich a gigantic equestrian statue in bronze of Charles XVI. of Sweden (Bernadotte) has just been cast in one jet, except the head and right arm of the king, and the head and tail of the horse. It is 17 feet high, and though between 20 and 30 tons in weight, the horse is made to stand on the hind legs alone, as in some other recent instances. The statue has been designed by M. Fogelbjerg, a Swedish sculptor of note, and is destined for Stockholm.

"STEAM SUPERSEDED:" ETHER AS A MOTIVE POWER.—A long report has just been published in France, according to *Galignani*, of the results of experiments with etherised vapour in the steamer *Du Trembley*. This report, which is from a commission appointed for the purpose, states that an enormous economy of fuel is obtained by the new system and the apparatus of which M. Du Trembley is the inventor. The consumption of coal on board the *Du Trembley* is declared to have been only 1 kilogramme 11 dec. to 1 kilogramme 16 dec. per horse power and per hour, whereas the consumption by the best steam engines on the usual principle is 4 kilogrammes. The great economy, adds the report, is very little affected by the outlay for ether. The danger of the ether escaping from the joints, it is asserted, has been entirely removed.

ARCHITECTS' BILLS.—At Croydon, on 8th ins Mr. Abraham brought an action before the Lor Chief Baron and a special jury against the Londo Necropolis and National Mausoleum Company, recover 7,000*l*. for services rendered in his professiona capacity. The plaintiff had been retained by th company to make the plans, &c. for laying out th ground and the requisite erections at the mausoleum and it was for payment of these plans, &c. that th present action was brought. By the advice of th judge, a verdict was taken for the plaintiff, subject a reference.

NEW CHURCH AT BROCKLEY-HILL PARK, FOREST HILL.—The Conservative Land Society has reserve a portion of land on the summit of the Brockley-hi Park Estate, near the Crystal Palace, for the site a new church. Subscriptions for the endowmen have been already promised by many shareholder The proposed church will be surrounded by an orna mental garden, with walks, shrubberies, &c. for th special use of the allottees on the terrace, whic commands one of the finest views in all Kent.

LIFE ASSURANCE COMPETITION.—A pamphl has been published by Mr. Samuel Brown, F.R.S. which he asks, "Is the present competition in Li Assurance Companies advantageous to the public?" question which he discusses, and resolves in the nega tive. The author is of opinion that the very succes of the system has tended to excite a dangerous spir of speculation, and to stimulate a competition out all proportion to the gradually growing wants of th public; and he recommends some wholesome restric tion on the part of Government in reference to ne companies yet to be formed. There is much trut and propriety in what the author says; but th is a question on which much may be said on both side That success in any system of monetary transactio will excite not only speculators, but adventurers an even worse than mere adventurers, to seize a share the advantages, due and undue, there cannot be doubt; and on this ground alone the intervention Government (to a very limited extent) may b desirable; but so long as out of 30,000,000 of peop only 300,000 to 400,000 are as yet insured, we canno see why the fair competition of honest assurance com panies should be interfered with: indeed, considerin that a large class of such companies are establishe on the mutual principle, and not on the proprietary what is termed "competition" is, in some sens "co-operation," and every new establishment, esp cially if planted down in a new locality, const tutes a germ or centre of growth, inducive of pr dential and provident habits in the multitude, a promotive of the increase of the as yet exceeding small proportion of assurers amongst the whole popu lation.

TENDERS

For house to be erected at Papcastle, for Mr. J. Harri Mr. Clarke, architect:—

J. Armstead (Preston)	£4,396	0	0
T. Robson (Carlisle)	3,341	7	6
G. Black (Carlisle)	3,333	14	1
Wright and Creighton (Carlisle)	3,333	0	0
J. Bell (Cockermouth)	3 160	11	0
J. D. Frazer (Harrington)	3,078	18	5
H. Peile (Cockermouth)	2,892	1	9

For the restoration of Egerton Church, Kent; und the same architect:—

Giles (Ashford)	£2,785	0	0
Myers (London)	2,523	10	0
Shadgate (Staplehurst)	2,320	0	0
White (London), stonework, 1,164*l*.; Bingham, woodwork, 1,089*l*. 2s. 2d.	2,253	2	2

For alterations and repairs at Christie's Hotel, James's street. Mr. Elliott, architect:—

		Allowed for Old Materials.
Rowland and Evans	£1,245	£75
Hurst	1,194	64
Glenn	990	50
Rudkin	975	35

TO CORRESPONDENTS.

"C. A. W." "E. S." "Rev. J. G." "T. D." "W. P." "W. B." are forced uniformly to decline). "J. W." (declined with thanks "H. W." "J. L." "G. E." "Subscriber from the first." "C. Queendom," "G. B." "J. D. P." "T. E. J." "W. L." and "C. F." (in type), "Welsh Antiquities" (ditto), "C G" "H. "F. J. P." "T. O." (usually matter of arrangement), "E. "C. W."

Evesham.—Builders' Benevolent Institution.—We are reques to say that the sum added to the building fund was 1,000*l*. and merely 100*l*. as stated in our recent report of the annual gene meeting of this institution.

"Norman House, Minster."—Minster, in the Isle of Sheppe slip of the author's pen in Mr. Baily's article, should have be Minster, in the Isle of Thanet.

"*Books and Addresses.*"—We have not time to point out book find addresses.

NOTICE.—All communications respecting *advertisements* sho be addressed to the "Publisher," and not to the "Editor;" other communications should be addressed to the EDITOR, and to the Publisher.

SALES BY AUCTION.

WALTHAMSTOW.—To Land Sesiciers and Others—Valuable Freehold Estate, within one mile of the intended Railway Station at Woodford

MR. J. WOOD will SELL by AUCTION, at the MART, on TUESDAY, AUGUST 30, at TWELVE, in lots, for the convenience of buyers (unless previously disposed of by private contract), FIFTEEN ACRES of particularly attractive FREEHOLD LAND, having important frontages in two main roads, with a detached cottage, barn, and stable thereon, delightfully situate at Chapel-end, Walthamstow, opposite the Crooked Billet, on the high road to Chingford, six miles from the city, and in the immediate vicinity of many well-known and favourite resorts. This eligible estate is deserving the best attention of capitalists and freehold land speculators, there being excellent brickearth on it, and every facility on the spot for an extensive building operation. Superior residences are much required in the neighbourhood after, and property is rapidly advancing in value consequent upon the important advantages of railway access adjacent.—Detailed particulars, with plans and conditions of sale, may be obtained of Cheston, esq. Solicitor, 1, Winchester-buildings, Great Winchester-street, Broad-street, City; at the Crooked Billet and Chequers, Walthamstow; the Castle, Woodford; the Eagle, Tottenham; and bend lane at Tottenham and Clapton; and of the Auctioneer, at his Land and Estate Office, 24, Throgmorton-place, near the bridge, Kingsland-road, to whom treaty in the meantime may be made for the whole, or parcels of seven or eight acres, &c.

Building Materials of Three Houses, Downate-hill.

PULLEN and SON are directed by the Worshipful Company of Tallowchandlers to SELL by AUCTION, on the PREMISES, on FRIDAY, AUGUST 26, at TWELVE, the whole of the valuable BUILDING MATERIALS of THREE HOUSES, Nos. 36, and 37, Downgate-hill, comprising excellent stock bricks, several tons of lead, plain and pantile, prime timber, shop and warehouse fronts, sashes, doors, partitions, floorboards, and a great variety of useful materials and fittings.—May be viewed the day previous, and catalogues had of PULLEN and SON, 80, Fore-street, Cripplegate.

Downate-hill Improvement.—Excellent Building Materials.

PULLEN and SON will SELL by AUCTION, on the PREMISES, on FRIDAY, AUGUST 26, at TWELVE, by order of the Improvements Committee of the Corporation of the City of London, all the excellent BUILDING MATERIALS and FIXTURES of a spacious HOUSE and PREMISES, No. 35, Downgate-hill, comprising sound brickwork, lead gutters, tiles, boarded and timber floors and roof, sashes, doors, and useful fittings-up, office desks, iron safe, counters, gas-fittings, stoves, and other house and warehouse fixtures.—May be viewed the day previous, and catalogues had at the Architect's Office, Guildhall; and of PULLEN and SON, 80, Fore-street Cripplegate

Freehold Building Land, on the Brighton Railway.

MR. EDWIN FOX has received instructions to SELL by AUCTION, at the MART, on WEDNESDAY next, AUGUST 24 lots (unless a suitable offer for the whole or any lot be made prior to the day of sale), 19 acres of superior BUILDING LAND, and Railway Inn adjoining thereon, abutting on the station at Horley, 24½ miles from London, intersected by excellent roads. May be viewed.—Particulars and plans are now ready and may be had at the Mart; and at Mr. EDWIN FOX'S offices, 141, Coleman-street, Bank; Mare-street, Hackney; and Westcroft place, Hammersmith.

Freehold Investment and Freehold Building Land, at Enfield, five minutes' walk from the railway station.

MR. EDWIN FOX will SELL by AUCTION, at the MART, on WEDNESDAY next, AUGUST 24, at TWELVE for ONE precisely, in TWO lots, a most desirable FREEHOLD INVESTMENT, known as Gordon House, situate at Enfield, Middlesex, of commanding elevation, standing on its own grounds, with paddock in front, and pleasure in the rear, containing 3a. 0r. 19p. in all, affording excellent accommodation to a highly respectable family, let on lease for seven years, at the yearly rental of £90, also a very superior Plot of FREEHOLD BUILDING LAND adjoining, having an extensive frontage to the high road, suitable in every way for a family residence of superior character, and offering a lucrative speculation for cutting into small plots.—Particulars with plans are now ready and may be had of JOHN HUGHES, Esq. Solicitor, 10, Chapel-street, Bedford-row; at the Mart; and at Messrs. EDWIN FOX'S Offices, 41, Coleman-street, Bank; Mare street, Hackney; and West-croft-place, Hammersmith.

NOTICE. Harrow Railway Station.—Freehold Building Land.

MR. EDWIN FOX has much pleasure in announcing that Lots 3, 4, 5, 6, 7, 8, and 14, amounting to 4as. 3r. 14p. of this truly valuable estate at Headstone are SOLD; the remaining lots amount to 22as. 0r. 13p. all of which, or any part thereof, may be now treated for by private contract on application at Mr. EDWIN FOX'S Offices, 41, Coleman-street, Bank; or to W. B. COOPER, Esq. Solicitor, 3, Verulam-buildings, Gray's-inn, of whom also plans and particulars may be had.

TO BE LET, a spacious YARD, with House, Sheds, and Cart Entrance, suitable for a Builder, in which business the premises have been nearly a century.—Apply to Mr. M. NATHAN, Three Colt-street, Limehouse.

BUILDING PLOTS, Upper Holloway, near the Highgate Archway. TO BE LET, several eligible sites for Villa Residences. Terms moderate. Bricks on the ground and liberal advances to respectable builders.—For plans and particulars, apply to Mr. J. C. BOWLES, 38, Great Coram-street, Russell-square.

HIGHBURY NEW PARK.—FREEHOLD BUILDING GROUND TO BE LET in this desirable locality, commanding extensive views. Money and bricks advanced, if required.—For particulars apply to Mr. C. HAMBRIDGE, 9, Coleman-street, City.

HOLLOWAY.—LAND TO LET, with extensive frontage in the Hornsey-road.—For particulars apply to Messrs. TANSON and SON, 9, Laurence Pountney-hill.

BUILDING GROUND.—CRYSTAL PALACE, NORWOOD.—TO BE LET on LEASE, on the road from Anerley Station to the Crystal Palace, and opposite the Commercial Grounds of the above building. The property consists of upwards of thirty acres, with a beautifully undulated surface, and thickly wooded; commanding extensive views in Surrey and Kent. It is accessible by good roads and railway, being within five minutes' walk of the Anerley Station, and one minute's walk of the proposed station of the West-end and Crystal Palace Railway. There is good brick earth on the property; and permission to make bricks would be granted to any one taking a considerable portion. Also about Nine Acres of freehold Land, within three miles of St. Paul's, to be Let or Sold.—For plans and particulars apply at the Offices of the Architects, Messrs WERNERT and SHIDOWN, 45, Charing-cross, and opposite the Industrial School, Anerley-road.

TO MANUFACTURING CHYMISTS, ENGINEERS, BOILER MAKERS and others requiring Waterside Premises

TO BE LET on LEASE, TWO WHARFS, with good frontage to the Thames; dwelling-house, workshops, and stables, and land for building houses or manufactories, also, belonging to the same proprietor, about Eight Acres of good Brick Earth and capital Building Frontage to be Let, situate about eight miles from London and one mile from a river and railway station.—For particulars, apply to Mr. DREW, Morden Wharf, East Greenwich.

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THE PATENT WATERPROOF and COMMON BRICK and TILE COMPANY (Provisionally registered under the 7th and 8th Victoria); Capital, 100,000l. in portion of which has already been subscribed, in shares of 1l. each fully paid up. No allotment will be made of a less number than five shares.
Office.—34, Moorgate-street
Broker.—George E. Seymour, Esq. 38, Throgmorton-street.
The peculiar character of these bricks has been proved by the practical tests of the gentlemen composing the Jury of Class 27 of the Great Exhibition of all Nations in 1851, and the Prize Medal awarded to the patentee.
As the Waterproof and also the Common Bricks will be manufactured by improved machinery, the trade will be supplied at lower prices than at present charged.
It has become a subject of great national importance to procure an ample supply of bricks to meet the continued and increasing demand. It may be remarked that during the last season (1852) the stock round the metropolis ran short, by several millions, of the required supply.
The profits which will accrue to the shareholders from the manufacture of Waterproof and Common Bricks, and the sale of licenses, will insure a large and increasing dividend, and, at the present price of stock bricks at least 60 per cent. may be safely relied upon; the directors therefore feel confident that they will be enabled to declare a dividend within a few months from the commencement of operations.
Applications for shares to be made to the Broker, or the Company's Offices, 34, Moorgate-street, where prospectuses may be had, samples of the Waterproof Brick inspected, and every information obtained.—August, 1853.
*** Advertisements with full particulars have already appeared in the various daily, weekly, and provincial journals.

FORM OF APPLICATION FOR SHARES.
To the Directors of the Patent Waterproof and Common Brick and Tile Company.
Gentlemen,—I request you will allot to me ..... shares of 1l each in the above company, and I hereby undertake to accept, and pay for the same, or any less number you may allot me, when required so to do.
Dated this ..... day of ..... 1853.
Name in full .....
Place of Business .....
Residence .....
Business or Profession .....
Name, Residence, and Profession of Referee .....
*** No further application for Shares in this Company will be received after MONDAY, the 22nd instant.

TO LANDOWNERS, BUILDERS, FARMERS, AND OTHERS.
BRICKS and DRAINING TILES.—The attention of agriculturists and others interested in the successful cultivation of the soil is earnestly requested to the circumstance, that every description of DRAINING TILES now made by CLAYTON'S No. 1 DOUBLE-ACTION PATENT PRIZE MACHINE, erected on the premises called the Brentwood Hall Brick and Tile Works, adjoining the Goods Station of the Eastern Counties Railway Company, at Brentwood, Essex. The above machine obtained the prize at the Great Exhibition of 1851.
The Draining Tiles are strongly made by a patent operation from screened clay of a superior quality, and after being hand-pressed, are burnt into a perfect state by several days, rendering them hard and durable for centuries, and capable of being conveyed perfectly sound by rail or land carriage to any distance. The cash-prices are as follow:—
Strong hard-burnt Pipes, 1¼-inch clear in the bore, 18s. per 1,000
2-inch ditto, 20s. per 1,000; larger sizes in proportion.
BRICKS.
Superior hard deep-coloured kiln-burnt Red Bricks, suitable for facing and ornamental purposes, 28s. 6d. per thousand.
Good hard-burnt Stocks, of unexceptionable quality, 23s. 6d. per thousand.
Inferior kinds according to quality.
At the above prices everything will be delivered on the ground into the carts, or placed in the railway trucks, on the siding which enters the works, free of rent, except railway carriage, which is estimated at 1½d. per ton per mile. A thousand of brick is considered to be 2½ tons; the small draining-pipes about half that weight. A yard would require 3,000 pipes at 30 feet distances; at 20 feet, 3,000 would be required the distance being regulated in a great degree by the depth of the drains.
For further particulars apply to Mr. BROWN, Bailiff, or to THOMAS PEPPERDAY, Foreman of the Works, on the Premises, at the Brentwood-hall Brick and Tile Works and Wharf adjoining the Goods Station of the Eastern Counties Railway, at Brentwood, Essex.

BRICKS from COWLEY and KENT
Also WHITE, YELLOW, and RED FACING BRICKS.
BLUE VITRIFIED BRICKS;
Fire Bricks, Lumps, and Tiles.
CHARLES RICHARDSON, 6, SOUTH WHARF, PADDINGTON.

PRIZE MEDAL AWARDED to PEAKE'S TERRO-METALLIC TILES, PIPES, &c.
ILLUSTRATED TRADE LISTS, containing much information useful for reference; also, unsolicited testimonials respecting MATERIAL which, when well wrought, is probably superior to every other for durable covering for tiles, tops, valleys, and eves; part of roofs, for plain or chequered floors, for paving and erection of a strong and durable nature, also many other purposes, supplied genuine by THOMAS PEAKE (proprietor of Peake's "Terro-Metallic"), No. 4, WHARF, CITY-ROAD BASIN, LONDON, and at the TILERIES, TUNSTALL, STAFFORDSHIRE. These lists contain full details, and approximate cost by measure. It is solicited that letters be prepaid, and state if Staffordshire or London prices are wanted. Specimens were at the GREAT EXHIBITION, Class 27, No. 135 (having been at first No. 1111.

BRICKS.—Malm Cutters, Yellow and Pale Seconds, Paviors, and Pickings, of good and sound quality, constantly on sale at the Brick-fields, which are only a quarter of an hour's walk from the City.—H. D. earnestly requests purchasers to favour him with a visit, in order to inspect his stock and to judge for themselves.
Malm Place, half-washed Stocks, and Place Bricks, also on sale. These bricks are sound, well burnt, and unusually free from defects, the large proportion of the stock being suitable for external facing.
Apply to HENRY DODD and CO. at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.
N.B. Light coloured pit sand of approved quality constantly on sale upon reasonable terms. This sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

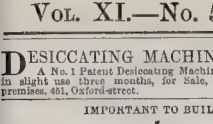
MAW'S ENCAUSTIC TILES.—MAW and CO.'S NEW PATTERN-BOOK, which is now nearly ready for post-free circulation, will include an extensive collection of the best mediæval examples; together with a very complete series of designs for Early English, Tudor, and Elizabethan styles. In the meantime designs to any given dimensions, with estimates, will be forwarded without charge, and samples at list prices, on application.—MAW and CO. Benthall Encaustic Tile Works, near Broseley, Shropshire.

HEREFORDSHIRE. — GODWIN'S ENCAUSTIC TILES.—A large Assortment of New and elegant Designs are now available for paving the floors of churches, halls, passages, conservatories, summer-houses, &c. Architects' designs executed on the shortest notice. Pattern tile sent on application.—Lugwardine Encaustic Tile Works and Pottery, Hereford.

FIRE BRICKS, &c.
WARD'S old-established Honduras-wharf Bankside, and Jamaica Coffee-house, Corahill, London.—PAN TILES, very best (country), 52s. per 1,000; plain, 35s.; and 9 in paving ditto, remarkably bright and handsome; Cowles and Kent Stocks, Suffolk White and Red Facing Bricks; oven crown, and flooring ditto; Windsor Oven Tiles; P. P and New such Fire-bricks; Malt and Corn Drying Tiles; Stourbridge Newcastle, and Welsh Brick Lumps and Tiles; Retorts and other Fire Goods made to pattern; Thames Sand, River Gravel for Concrete, Founders' Loam and Sand, White and Red House ditto Drain Pipes, &c. Barges of Sand and Gravel to wharfs or docks short notice.

DESICCATING MACHINE FOR SALE.
A No. 1 Patent Desiccating Machine, which has been only in slight use three months, for Sale, cheap.—Apply on the premises, 451, Oxford-street.

IMPORTANT TO BUILDERS.



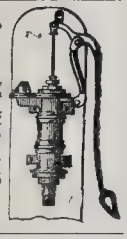
REGISTERED CAST-IRON CHIMNEY-HOPPER and CHIMNEY-BAR COMBINED, ensuring a perfect formation of the Flue, and rendering smoky chimneys impossible. One trial will cause their adoption in every building.
Price from 8s. 6d. each, according to size.
CAST-IRON KITCHEN SINKS, with overflow-pipe, 8s. 6d. each.
IRON PIPES and connections for gas, water, and liquid manure.
RAIN-WATER PIPE and EAVE GUTTERS, at wholesale prices. Also, O.G Gutters, Sash-weights, STABLE FITTINGS, pumps, tomb railing, cattle and pig troughs, and COLUMNS with caps and bases, and every kind of builders' castings, in stock, at LYNCH WHITE'S Iron Wharf, Upper Ground-street, London, near Blackfriars-bridge.

FOWLER'S IMPROVED WROUGHT PUMPS for CONTRACTORS, BRICKMAKERS, EXCAVATORS, and OTHERS.



The attention of this house for more than fifty years past having been almost exclusively paid to the manufacture of every description of pump-work for every variety of purpose, attention is respectfully requested to their very superior Wrought Pumps, with plain or sliding telescope suction, galvanized and ungalvanized. A large stock of all sizes is kept ready to finish off to order, according to length required, at the shortest notice.
This description of Pump-work varying in almost every case, it is impossible to quote a general price, but the fullest particulars will be given on application.
A large stock of Wrought Pumps, from 3-inch single to double 15-inch barrel, is also kept on hire prepared for hand or steam power, on reasonable terms, at
BENJAMIN FOWLER'S
ENGINE-PUMP MANUFACTORY,
Whitefriars-street, Fleet-street, London.

TO BUILDERS AND PLUMBERS.
The attention of the Trade is called to
JOHN WARNER & SONS' PATENT VIBRATING STANDARD PUMP,



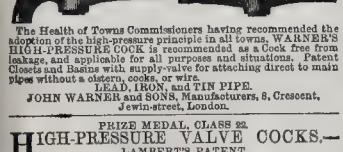
which is recommended for the simplicity of its construction, and the ease with which it works.
By the introduction of the vibrating standard, the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.
Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.
JOHN WARNER & SONS,
8, Crescent, Jewin-street, London,
Manufacturers and Patentees.

STEAM PUMPING ENGINES.—PATENT PORTABLE STEAM-ENGINES, from four to ten-horse power, always ready to let on hire, by the week or month, for pumping, sawing, pile-driving, raising materials, &c. &c.



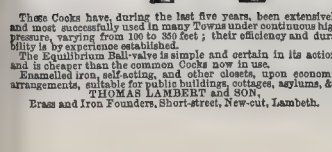
Contracts taken for pumping any quantity of water.
JAMES BURTON & SONS,
Engineers and Contractors,
John's-place, Holland-street,
Southwark, London.

TO WATER COMPANIES AND PLUMBERS.
HIGH-PRESSURE COCKS & CLOSETS.



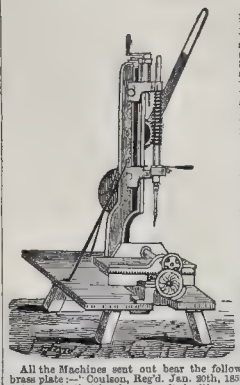
The Health of Towns Commissioners having recommended the adoption of the high-pressure principle in all towns, WARNER'S HIGH-PRESSURE COCK is recommended as a Cock free from leakage, and applicable for all purposes and situations. Patent Closets and Basins with supply-valve for attaching direct to main pipes without a cistern, cocks, or wire.
LEAD, IRON, and TIN PIPE.
JOHN WARNER and SONS, Manufacturers, 8, Crescent, Jewin-street, London.

PRIZE MEDAL, CLASS 32.
HIGH-PRESSURE VALVE COCKS.—LAMBERT'S PATENT.



These Cocks have, during the last five years, been extensively and most successfully used in many Towns under continuous high pressure, varying from 100 to 350 feet; their efficiency and durability is by experience established.
The Equilibrium Ball-valve is simple and certain in its action, and is cheaper than the common Cocks now in use.
Enamelled iron, self-acting, and other closets, upon economic arrangements, suitable for public buildings, cottages, asylums, &c.
THOMAS LAMBERT and SON,
Brass and Iron Founders, Short-street, New-cut, Lambeth.

TO JOINERS, CABINET-MAKERS, CARPENTERS, CARRIAGE BUILDERS, &c.
COULSON'S REGISTERED MORTISING MACHINE.



This machine is made of Wrought Iron and Cast Metal, with Brass Bushes, and is furnished with six solid best Shear Steel Chisels, of very superior make. It will mortise hard wood as well as soft, and is the only Lever Mortising Machine that has ever been introduced.
For ease in working, quickness, and durability, it by far surpasses any other. One Tenoning Cutter can be supplied if required, which moves to suit the different sizes of chisels. W. C. warrants this machine to be sent out ready for use. It is highly approved of by all who have used it, and may be seen at work at Mr. Wm. COULSON'S, 36, Fetter-lane, York, where further particulars will be given, and orders promptly executed.
All the Machines sent out bear the following inscription on a brass plate:—"Coulson, Regd. Jan. 20th, 1853. No. 3697. York."
Any party that has been supplied with one of the Machines not having the above inscription, will be so kind as to forward their address to W. C.

TO BUILDERS, MASONS, AND OTHERS.
AT the MARBLE, STONE, and WOOD-SAWING and PLANING MILLS, Commercial-road, Pimlico.
The largest stock in England of Marble in Blocks and Slabs, Veined, Bardilla, Dove, Black, and Black and Gold, Sienna, &c. Aunes, Statuary, &c.
Also a variety of Chimney-pieces, Veined, Black, Black and Gold, Statuary, and other choice descriptions of Marble on show.
Portland, Hare Hill, Park Spring, and other stone in Blocks, Slabs, Landings, and Headstones, Yorkshire Paving, Granite, Curb, &c.
And the largest stock of well-seasoned Flooring of all descriptions, Match Boarding, Cut Stuff, &c. at the lowest possible prices.
All goods carefully packed and forwarded to any part of England.
JOHN HOLMES, Agent, Commercial-road, Pimlico.

MARBLE.—Mr. J. FABBRICOTTI, of Carrara, Italy, Proprietor of Marble Quarries, and the only person in the United Kingdom selling Italian Marble the produce of his own quarries, begs to inform the gentlemen connected with the marble trade that he has established, in London, the most extensive Depôt of Statuary, Veined, Sicilian, Dove, and Black and Gold Marbles, at CARRARA WHARF, THAMES BANK, PIMLICO, the foot of Vauxhall-bridge.—Offices, 3, Crescent-terrace, Millbank, Mr. THOS. THOMPSON, Agent.

MARKET WHARF, REGENT'S PARK BASIN.—MARTIN and WOOD solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c. sold at the lowest possible prices for Cash. Portland Head Stones, Ledgers, Steps, Landings, &c. cut to order on the shortest notice. Turning lathes let on hire. A Stock of Northen's Drain Pipes, Syphons, &c. always on hand. Mortar, Lime, and Hair, Fine Stuff, &c. Prompt attention paid to country orders.

CORSHAM-DOWN, and other BATH and PAINSWICK STONE.—MARTIN and WOOD beg to inform their Friends and the Building Trade generally, that all Orders and Inquiries for the above Stone will be promptly attended to by being addressed to MARKET-WHARF, REGENT'S PARK-BASIN.

BATH STONE OF BEST QUALITY.
RANDELL and SAUNDERS,
QUARRYMEN AND STONE-MERCHANTS,
BATH.
DEPOTS.)

Great Western Railway Station....	PADDINGTON.
Great Western Railway Station....	BRISTOL.
Hope-street, Mount-pleasant	LIVERPOOL.
Castle-fields	MANCHESTER.

List of prices at the quarries and depots, also cost for transit to any part of the kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

GRANITE.—The Cheesewring Granite Company, of Liskeard, Cornwall, are now prepared to supply Granite of excellent quality, and the largest sized blocks. Prices may be ascertained on application to N. TREGELLES, 3, Pinner's-court, Old Broad-street, City, or to JAS. J. TRATHAN, Liskeard.

E. and W. STURGE invite particular attention to their PRICES of STONE, &c.:—Good booled Yorkshire Paving, at 33s. per 100 feet (retail, at 41d. per foot); thicker ditto, at 40s. per 100 feet; very superior, 44s. ditto; thick rubbed Paving, in great variety of sizes, at 33s. ditto; Harehill and Selfaced Slab, of the finest quality; thick Selfaced Paving (viz. from 2½ to 4 inches); Sinks, large or small sizes, at 1s. 8d. per foot; Steps, Sills, 12 inch, and 18 inch Coping, all at very low prices; Duchess, Countess, and other Slates; City and Stone Pipes, Chimney-pots, &c.—A list sent free on application to E. and W. STURGE, Bridge Wharf, City-road.

BATH STONE.—HENRY STONE begs to inform Builders, Contractors, and Others, that he still continues to supply the best BOX HILL GROUND, and (Lodge Stile) COMBE DOWN STONE, on the most reasonable terms.
H. S. also begs to call particular attention to a Quarry he has lately opened on Hampton-down, near Bath, where he has found some beds of Soft White Stone, of a very superior quality, and adapted for either exterior or interior purposes.
Ashlar and Sawn Bands Stone cut to order. Cargoes shipped and delivered to any part round the coast.
Residence, Widcombe, Bath.

CAEN and AUBIGNY STONE.—F. FOUCARD, Stone Merchant and Quarry Proprietor, Quai des Abattoirs, Caen, and at 6, Red Lion-street, Borough-market. Contracts taken for any quantities. Cargoes shipped to order from Caen to any port.

CAEN and AUBIGNY STONE.—Gates and George, late of the firm of LUARD, BEEDHAM, and Co. Quarrymen and General Stone Merchants, Caen Wharf, Rotherhithe, London, and Caen, Normandy. Depôt—Hope-street, Mount Pleasant, Liverpool; Castle Fields, Manchester.—Information and samples forwarded on application to Caen Wharf, Rotherhithe.—Samples may be seen at the Office of "The Builder."

BANGOR WHARF, King's-road-bridge, Camden-town.—STRINGFIELD and COOPER, late W. W. Rawlins, beg to call the attention of Builders and others to their stock of Bangor slates, laths, plaster, Roman, Portland, and Keene's cement, blue lias, Dorking, and chalk lime, plasterers' hair, Yorkshire plain, pan, and ridge tiles, glazed sewer pipes, closet-pans, and traps, Welsh fire-bricks, gravel and shells for garden paths, ballast, sand, &c. Materials landed, wharfed, and carted.

VALENTIA SLATE SLABS.—The Valentia Slab Company invite attention to their Slabs now supplied, of very large dimensions and of superior quality. They have been used at the British Museum, National Gallery, Bethlem Hospital, various lunatic asylums, the Ordnance Works, Model Prison, Pentonville, and other penitentiaries, Malting Floors in Bedfordshire and Hertfordshire, Breweries, the Race Stand at Brighton, Portsmouth Barracks, and are kept in stock in large quantities at Freeman's Wharf, Millbank-street; also by Messrs. SHARPE, Tooley-street; and Messrs. BRABYS, Belvedere-road, where terms may be obtained.

MACHNO SLATE and SLAB COMPANY, near FESTINIOG, NORTH WALES.—The Directors of the above company beg to call the attention of Architects, Slate-workers, Builders, and others, to the great SUPERIORITY of their SLABS over those of any other quarry in the United Kingdom. They are of a beautiful and uniform colour, entirely free from sulphur, harden on exposure to the atmosphere, easily worked, and, from the nature of the vein, may be obtained of almost any size, and have lately been extensively used in the construction of slate houses for exportation to Australia. The Directors can strongly recommend the roofing slates for the excellence of their colour, durability, and the absence of that brittleness so common in the generality of Welsh slates. A reference will be required in all cases with the first order.—J. SWINTON SPOONER, Beavergrove, near Llanwrst, North Wales, Manager.

SLATES.—GEORGE F. NORTH begs to inform Country Merchants that he can supply them with Slates from alongside vessels in the Thames, of such quality, and at such prices, as he hopes would merit a continuance of their favours; and also with slabs cut to order at his wharf, Palace-road, Lambeth.

PORTLAND.—TO BUILDERS, MASONS, &c.—BENJAMIN PEARCE, Stone Merchant, begs to say that he has now by him for sale (just quarried many blocks of good Stone, from 12 feet to 14 feet 6 inches long, together with a quantity of other blocks varying from 4 feet to 9 feet long. All these blocks are split or cut horizontally from the rock, and warranted to stand any weather.—August 16, 1853.

THE PIMLICO SLATE-WORKS.
Patronized by Royalty, the Heads of the Nobility, the Clergy, Architects of Eminence, Builders, Railway Contractors, and the Public generally.—MAGNUS'S ENAMELLED SLATE (notwithstanding the vile imitations and infringements of his patent that are attempted), continues to grow in favour with the public, being handsomer, more durable, and very much cheaper than marble.—Price-lists and a sheet of drawings, sent to any part of the kingdom gratis. Cisterns, Filters, Dairy and Larder Shelves, Wine Cellar Fittings, Slabs, and every variety of plain Slate-work, at prices that defy competition.—39 and 40, Upper Belgrave-place.

HALKIN MOUNTAIN TARRAS, or HYDRAULIC LIMESTONE QUARRIES, HOLYWELL.—JOHN LLOYD, Sole Proprietor, having succeeded his late father in the above business, begs to thank his friends for the patronage accorded to him for many years, and to apprize them that the business will be carried on as hitherto, and that their orders will have his punctual attention. N.B.—Ground and unground HYDRAULIC LIME always on hand.

By her Majesty's / Royal Letters Patent.
FREDERICK RANSOME'S PATENT.
THE SILICEOUS STONE COMPANY are now prepared to UNDERTAKE CONTRACTS for the EXECUTION of WORKS in the PATENT STONE, it having stood the test of several years' exposure to the weather without being affected in the slightest degree. In appearance it accurately resembles natural stone, and has no analogy to cement of any kind. The sandstone grit and other siliceous material of which it is composed, being combined by means of a fused insoluble silicate, which renders it, in the opinion of the most eminent chemists, unquestionably more indestructible than the majority of natural stones now used in building.
For Architectural purposes, it is made of any quality of texture, and is admirably adapted for every description of work, plain or ornamental, especially wherever repetition of design is required, as in Open Terrace-work, Balustrades, Vases, Copings, Fountains, &c.; or for the more elaborate carvings used in Ecclesiastical Buildings, Fonts, Monuments, Tombs, Chimney-pieces, &c. and also for Pavements of every variety of Colour and Pattern.
Another description is made porous, especially for filtering purposes,—either for domestic use, or in slabs of any required size and degree of porosity,—for purifying large quantities of Water, and which particularly claim the attention of Water Companies.
Specimens may be seen and further particulars obtained at the offices,
8, John-street, Adelphi. EDWARD MENDHAM, Sec.

ARTIFICIAL STONE CHIMNEY-PIECES.—Neat chamber chimney-pieces, moulded jambs, mantel, and shelf, for 7s. 6d. each, free on board at Newcastle-on-Tyne; or paid to London, 9s. Quotations to other ports furnished, on application to the Manufacturer, W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

TO BUILDERS AND OTHERS.
MONEY TO LEND UPON MORTGAGE upon Freehold, Leasehold, or Copyhold property, in sums from 100l. up to 100,000l.—Apply to AUSTIN and CO. 25, Bedford-row.

LOANS.—Persons desirous of obtaining ADVANCES from 50l. to 250l. upon approved personal security, repayable by easy instalments, extending over a lengthened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASS 88.—Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6d. each copy, or 1s. per post. Note.—Four new classes are now in course of formation for London, and will immediately commence operations.

LOANS GRANTED.
THE LONDON EXCHANGE ADVANCE FUND, 5, Adelphi-terrace, Strand, facing the river; City Branch, 3, Old Broad-street.
TRUSTEES.
The Right Hon. Lord Erskine | Hon. Richard Rowley.
Sir Edward Graham, bart.
Loans advanced, in sums of 10l. to 1,000l. on a joint promissory note, repayable by easy instalments, or on the deposit of deeds or other available securities. Bills of Exchange cashed, Debenture Notes granted of 10l. and upwards under the Company's seal, bearing interest at 5 per cent. per annum.
Forms of application may be obtained at the Offices, or on forwarding twelve postage stamps. WM. BROOKES, Sec.

TO HOUSEHOLDERS.
BUILDING SOCIETIES SUPERSEDED by the new system of LOANS, extending over a period of from three to twelve years, repayable by quarterly instalments, of the Householders' and General Life Assurance Company.
Nos. 15 and 16, Adam-street, Adelphi. R. HODSON, Secretary.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

The PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wood from Decay, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that thus protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Steam and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess all its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

For terms, application to be made at the Offices of the Company,
12, BISHOPSGATE-STREET WITHIN, LONDON; or to Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE.

TESTIMONIALS.

"Brighton, Croydon, and Dover Railways,
ocomotive Department, New Cross, Sept. 25, 1845.

"SIR,—In reply to yours respecting the 'Patent Protoxide Paint,' I have much pleasure in stating that what has been used in this establishment has been highly approved of, and I consider it the best description of paint yet used, particularly for iron-work, for which purpose I can strongly recommend it.

"I am, Sir, your obedient servant,
"BENJ. CUBITT."

"Recent's Canal Iron Works, Eagle-wharf-road, Dec. 5, 1845

"SIR,—As it is always my wish to render justice to every one as far as it is in my power to do so, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint;' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will, moreover, use it for all my own work, and wish I had known it somewhat earlier.

"I am, Sir, yours respectfully,
"HENRY GRISSELL,
"Pro H. and M. D. Grissell.

"P.S.—It must be good for Boilers."

"St. Day, near Redruth, Cornwall, 7th April, 1848.

"SIR,—We have used your 'Patent Metallic Protoxide Paint' extensively about various parts of machinery with great advantage. We find it prevents oxidation, and stands any ordinary heat without being the least blistered or injured. About two years since we painted with it the interior and exterior of some steam-boilers and steam-tubes, and they still remain in the most perfect state, and we consider it of great value for all iron-work.

"HOCKIN and LOAM, Engineers."

VENTILATION.—PURE AIR.

Sheringham's Ventilator for the admission of pure air through an



EXTERNAL WALL.

With single pulley, from 6s. each; with leading pulley, from 8s. 6d.

These Ventilators are so arranged that the requisite quantity of air may be admitted without the inconvenience of an apartment without the slightest draught being felt by the occupants; and as they are placed in the external wall, their action is not impeded when the house is closed for the evening, at which time a constant supply of fresh air is most required.—HAYWARD, BROTHERS, sole Manufacturers, 196, Blackfriars-road, and 117, Union-street, Borough: and of all respectable ironmongers, builders.



PORTABLE BRICK HOUSES, Tile-faced

on Metallicponged Yellow Deal Weatherboarding, suited to any Climate, promptly erected. Three rooms, 12ft. by 9ft., for temporary use, four rooms, 36l. 14 ton, packed solid. Adapted for chapels, bazaars, galleries, stores, &c. A church, chapel, 300 sittings, 85l.—E. SMALLWOOD, contractor, Grove-street, Camden-town.

THE VIEILLE MONTAGNE ZINC

MINING COMPANY beg to inform the public that they have appointed Messrs. T. & S. KNIGHT, of Great Suffolk-street, Southwark, as their painters, who will be ready to execute any description of painting and decorating with the Pure Patent White Zinc Paint.

THE VIEILLE MONTAGNE ZINC

MINING COMPANY'S PURE PATENT WHITE ZINC PAINT is unequalled for permanency of colour, hardness and brilliancy of surface; it is unaffected by sulphurous or any other vapours or emanations. Being completely innoxious and free from the pernicious effects of whitelead, it may be employed in all apartments whilst in use without any inconvenience to the inmates.

The greatest caution is recommended to avoid any spurious compounds that might be sold at cheap rates as Pure Oxide of Zinc. If any adulteration has taken place in the oxide, either in consequence of impurity in the material primarily made use of to produce it, an imperfect mode of production, or by mixing with the oxide certain substances calculated to give it increased weight, it then produces a very inferior instead of a very superior paint, and the economy realized by the purchasers of such oxides, becomes a very expensive result to the owner of the premises painted with them.

The VIEILLE MONTAGNE'S ZINC OXIDES, dry or ground in oil, are sold with the VM mark In Hull, by Messrs. BLUNDELL, SPENCE, and Co.; when ground and dry, by Messrs. T. E MORLEY and Co.; and by the Company's Grinding Agents, in London, Messrs. CHARLES DEVAUX and CO., wholesale agents, 62, King William-street, City; Mr. CHARLES JACK, wholesale and retail, 8, Tottenham-court, New-road, and 80, Upper Thames-street, City. In Manchester and Liverpool, by Messrs. LAWFORD and CO of 49, Norfolk-street, Liverpool. In Leith, by Messrs. R. ALLARDISON and Co. Timber-bush. Dry OXIDES and PAINTS, in kegs of 14, 28, and 28 lbs. and upwards, to be had of the Company's Agents, in Birmingham, Newcastle, Glasgow, Bristol, Plymouth, Portsmouth, Norwich, Ipswich, Poole, and the Isles of Jersey, Guernsey, Man, and Wight; also, in Dublin, Cork, and Belfast.

The Company also employ an acknowledged painter in London, who will undertake any description of painting with Zinc Paint by Contract.

For further particulars, apply to the Company's General Agent in London, Mr. SCHMOLL, 19, Manchester-buildings, Westminster.

HUBBUCK'S PATENT WHITE ZINC PAINT.

The PERMANENT WHITE of the Ancients, previously confined by its cost to the use of the artist, is now, by Hubbuck's Patent, reduced to a less price than White Lead.

The distinctive characteristics of HUBBUCK'S ZINC PAINT are—Economy, Health, Beauty, and Durability.

Builders and Contractors find Hubbuck's Paint the only one adapted for their purposes, possessing the great desideratum of economy, combined with its high excellence as a Paint; it ranks alone. Contractors effect a saving of 25 per cent. by using HUBBUCK'S ZINC PAINT.

HUBBUCK and SON feel it necessary a caution should be circulated against imitations of their Paint. These manufactures, containing the generally pernicious ingredients, are baneful to health and worthless in use. The high reputation these spurious imitators in the production of pigments is evidenced, not alone by the constrasty appearance, but also by the deficiency of that body in their produce, which is known to the painter to be all-essential. That an imposition be not practised, therefore, notice that the cask is marked with the name of the original manufacturer, thus—

HUBBUCK——LONDON——PATENT.

If not so marked, the reason may be inferred.

Every information in the circular to be had of THOMAS HUBBUCK and SON, Paint and Varnish Manufacturers, Upper East Smithfield opposite the London Docks, London.

THE WASHINGTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE,

Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead: it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects, is far superior: its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years, it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60lbs. of Oxichloride Paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper-Stainers and Leather-Dressers, the Oxichloride is peculiarly suitable. The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

AGENTS.

LONDON	Messrs. Blundell, Spence, and Co. 5, Upper Thames-street.
	Mr. Heskell Cocker, 7, Size-lane.
LIVERPOOL	Messrs. Johnson and McGowan.
MANCHESTER	Mr. James Donelan
LEEDS	Messrs. T and E. G. Jepson.
SUNDERLAND	Mr. John Young.
DEVONSHIRE AND CORNWALL	Mr. Richd. Penrose, Tavistock and Plymouth.
EDINBURGH AND EAST COAST OF SCOTLAND	Mr. Wm Bailey, jun. Greenside-place, Edinburgh.
GLASGOW AND WEST COAST OF SCOTLAND	Mr. John Shimshaw, Glasgow.
DUBLIN AND SOUTH OF IRELAND	Mr P. Linskey, 51, Middle Abbey-street, Dublin.
BELFAST	Messrs. William Stevenson, jun. and Co

PORTLAND CEMENT.—JAMES

WESTON having enlarged that portion of his CEMENT WORKS on Millwall, Poplar, for Manufacturing the above CEMENT, begs to inform Trade that it can now be supplied with any quantity they may require, either at his Works, St. Andrew's Wharf, Earl-street, Blackfriars, or Middle Wharf, Scotland-yard, Westminster. Manufacturer of Roman, Lias, and Mastic Cements, English and French Plaster, &c.

PORTLAND CEMENT.—ASPDIN'S PATENT

Messrs. ASPDIN, ORD, and Co. have much pleasure in informing consumers of this valuable cement, that they have, by means of a recent discovery (patented by Mr. Aspdin) much improved the quality of their cement without any increase in price.

Engineers and architects are recommended to specify "Aspdin's Patent," as there are numerous imitations sold as Portland Cement, resembling our colour only.

ASPDIN, ORD, and Co. beg to call attention to their SECOND QUALITY, which is equal, if not superior, to most of the cements sold as Portland, and is consequently cheaper.

A report of experiments made to prove the extraordinary strength of their Patent Portland Cement, may be had at their office, New wharf, Westminster, London; at their works, Gateshead-on-Tyne; or from their agent, MR. HENRY ROBINSON, 31, King-street, Liverpool.

ARTIFICIAL HYDRAULIC or PORTLAND CEMENT

CEMENT combines the valuable qualities of the natural cements with the additional advantage that it greatly excels them in its two chief properties: that it is not affected by fire, and does not resent damp situations. Account of COMPARATIVE EXPERIMENTS on the strength of this and other cements (read at the Institute of Civil Engineers), to be obtained from the makers, JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster, who prepare one quality only of Portland Cement.

PORTLAND CEMENT.—

6, South Wharf, Paddington.

CHARLES RICHARDSON has the greatest confidence in introducing to the Trade the above superior CEMENT, being of uniform colour and quality (a desideratum never before attained in Portland Cements). It possesses extraordinary cementitious properties, resisting the action of fire and heat, and is more durable combined with which its eminent hydraulic properties stamp it at once as the first cement of the day for work where all the above qualities are requisite. It is manufactured on the only principle Portland Cement can be and contrary to the statements put forth by those who have hitherto had the monopoly. Manufactured by R. GREAVES, Esq. at his Works, near the River Avon, and sent to all parts of the kingdom per boat or rail, at a reduced price to the trade.

KEENE'S and PARIAN CEMENTS and

FRENCH PLASTER for internal uses.—These well known hard stuccoes dry quickly, and can be painted upon within a few days.—Made and sold by JOHN BAZLEY WHITE and BROTHERS, Millbank-street, Westminster.

ATKINSON'S CEMENT, so long known and

esteemed in London, for plastering purposes, is a quick-setting Cement, that requires no colouring.—Sold exclusively by JOHN BAZLEY WHITE and BROTHERS, Millbank street, Westminster; and Seel-street, Liverpool.

PARIAN CEMENT for internal use, to be

PAINTED IN A FEW HOURS AND PAPERED WITHIN A COUPLE OF DAYS.—CHARLES FRANCIS and SONS, Patentees, and Manufacturers of Roman and Portland Cement, &c. &c. Nine Elms, London.

GEO. & THOS. EARLE, CEMENT MANU-

FACTURERS, HULL.—Light and Dark, equal to any made. Manufacturers also, and dealers in Plaster, Paris White, Mastic, Hair, Lias Lime, Laths, Slates, and Slate Slabs, Fire-bricks, Grindstones, Cement Chimney-tops, ditto Vases, Ridging, &c. Paints, Stucco, &c. Marble Merchants and Importers of Pozzolano

THOMAS FREEN and CO. LIME

BURNERS, WOULDHAM-ON-THE-MEDWAY.—Grey and Chalk Lime, by the barge or yard.

THOMAS FREEN and CO. Manufacturers

of ROMAN and PORTLAND CEMENT, and PLASTER of PARIS, TUSCANY WHARF, CANAL ROAD, KINGSLAND-BRIDGE; and at Thornhill Wharf, Caledonian Bridge; and No. 8, Wharf, Paddington.

THOMAS FREEN and CO. invite the

attention of Contractors, Builders, and others to their PORTLAND CEMENT, manufactured at their works at Wouldham-on-the-Medway, which will be found of superior quality.

PORTLAND CEMENT WORKS,

NORTHFLEET, KENT.—Messrs. ROBINS and CO. continue to manufacture the very best PORTLAND CEMENT for all purposes for which it is applicable, and solicit a continuance of that patronage with which they have so long been favoured. Orders received at Great Scotland-yard, and at the Works.

GREAVES'S BLUE LIAS LIME.—The

superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is limited on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Globe, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Pire Goods

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS Cements of the best quality.

SEYSSELS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6, South Wharf Paddington.

WARWICKSHIRE BLUE LIAS LIME.

—CHAS. NELSON and CO. beg most respectfully to call the attention of Engineers, Architects, Contractors, Builders, and others connected with the building trade, to the superior quality of their BLUE LIAS LIME, the natural hydraulic properties of which, and the great estimation in which this kind of Lime is held for buildings in wet and damp situations, such as wharf-walls, docks, &c. and for concrete foundations, is a sufficient recommendation for the adoption of it in all works of the above description. It is also peculiarly adapted for stucco. Orders received by—London Agents, BLYTH and CUBITTS, 18, South Wharf, Paddington; and at the Works, Stockton-fields, near Southam, Warwickshire.

PERMANENT STUCCO WASH,

WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT.

As used at St. George's Hospital, Hyde Park Corner.

JOHNS and CO. having effected some important improvements in the manufacture of this article, confidently offer it to the notice of the Trade and the Public generally, as possessing every advantage over the common Lime Wash or Water Colour for STUCCO and CEMENT WORK. The Colour, but may be tinted to any other—DOES NOT WASH OFF—is perfectly dry in twenty-four hours, and, being a non-absorbent, is admirably adapted for Gentlemen's Mansions, Union Workhouses, Barracks, Schools, Prisons, &c. One cwt. will cover 250 square yards. It will keep good for years, and MAY BE EXPORTED WITH PERFECT SAFETY.

JOHNS and CO.'S STUCCO CEMENT.—This cement, from the great reduction in price, and its suitableness for internal as well as external surfaces, places it above all other materials of its kind; it is make Dear assume the character of Oak or Panelling, in a few days; never blisters, cracks, or vegetates; soon becomes as hard as stone; and may be cleaned with a brush and water.

The merits of the PAINT are well known for its application to stucco work of all kinds, and external work generally. Numerous testimonials, prospectuses, and every information may be obtained, on application to the Sole Agents, PHILLIP HARE and CO. at the Warehouse, 22, Steel-yard, Upper Thames-street. A liberal allowance to wholesale dealers.

STEPHENS'S LIQUID OAK, MAHOGANY,

and SATIN WOOD STAINS, for staining various sorts of inferior Woods, so as to give them the appearance and character of the more costly and valuable kinds in the BUILDING and DECORATING CHURCHES, where it is desirable to give to the cheaper kind of woods the appearance of antique Oak, or to make Deal assume the character of Oak or Panelling, whereby the effect of the more costly may be produced by the use of a cheaper material, these stains will be found more effective than any means hitherto employed. For the exposed Timbers of the inside of the Roofs of Churches, by brushing them over with the Stain, which operation is very rapidly, and of course economically effected, the appearance of an oaken roof will be produced. For colouring the backs of the seats, pews, the fronts of galleries, the pulpit, &c. it is equally advantageous.—Prepared by HENRY STEPHENS, and may be obtained at 54, Stamford-street, and at the Office of "The Builder," at both which places may be had the proper Varnish and Size, with directions for use.

The Builder.

SATURDAY, AUGUST 27, 1853.

A WEEK seldom passes in which our advice is not asked by some young operative anxious to improve his position, and ignorant of what course to take,—men

"Yearning for the large excitement that the coming years will yield;"

but unable to discover means by which to attain the object of their desire. Within the last three months we have certainly not had less than twelve such applications, from widely separated parts of the kingdom, and although we would gladly aid, if but with words, any worthy struggling spirit, we have found it out of our power, excepting in two or three instances, to comply with the request. To most of them we should have said, get knowledge: apply yourselves energetically and resolutely and continuously to acquire information and skill connected with your pursuit: avoid the dram-shop as you would a pestilence: keep your eyes open to the events going on around you; and be prepared to apply your labour and your skill in the most productive paths. Remember in all things that if you do not begin you will never come to an end: "The first weed pulled up in the garden, the first seed put in the ground, the first shilling put in the savings' bank, and the first mile travelled on a journey, are all very important things; they made a beginning, and thereby a hope, a promise, a pledge, an assurance, that you are in earnest with what you have undertaken. How many a poor, idle, erring, hesitating outcast is now creeping and crawling his way through the world, who might have held up his head and prospered, if, instead of putting off his resolutions of amendment and industry, he had only made a beginning."

One of those who has addressed us, and who signs himself "Equality," had been into the country-house of one of the leading builders of the metropolis, not far from Clapham, where he found servants, and horses, and luxurious furniture, and rich works of art, and all other things which, properly used, contribute to the enjoyment of life, although they are not by any means indispensable, and he is very wrathful and discontented, and complains of the *chance* which has enabled one, a workman like himself not many years ago, to acquire all these luxuries, and a high position in the world, while it has kept him poor and unknown. Our friend "Equality" is not by any means original in his discontent and reproach, and has already had one answer in a neighbouring country, as he shall see presently.

M. Emile Souvestre some time ago wrote a little book called "Confessions of a Working Man," and Messrs. Longman have just now wisely published a translation of it in their shilling series. It is the autobiography of a mason, charmingly written, and we hope it will have a good circulation. We agree with the writer that in the midst of the social troubles and excitement of our times, nothing is more opportune, beautiful, and encouraging than the spectacle of a man of humble lot, who, with energy for the right moments, combats suffering by patience, and who triumphs in his integrity; a man who, when his legs fail him, "can walk upon his courage."

Sent early into the work-yard as a mason's boy, the hero of the tale finds there a protector, who is continually saying to him:—"A mason, Pierre Henry, is like a soldier;—he must do honour to the regiment of the trowel. The architect is our general; he makes the plan of the battle, but it is for us to win it by bravely working with brick and mortar, as the troops yonder work the enemy. The true workman does not think only of the baker's bill; he loves the work of his hands; his glory is in that. Simple as I stand here, I have never hung the ribbons on the last gable without feeling a certain something in my heart. The houses in which I have had a hand seem to me like my children; when I see them, they rejoice my eyes."

"Loving the work,"—that's the secret. *Love* the work, and it is no longer work, but an enjoyment.

We like the notion, too, by the way, of hanging "the ribbons on the last gable:" it is desirable to encourage the poetic feeling within us, and to keep up the love of the beautiful.

To come, however, to the point in question. When further advanced in his career, the mason goes to one of the chief contractors in Paris for information with his ancient protector, and finding the style in which he is living, murmurs at their different lots. "Why is it," says he, "that this one lives in a palace, while others roost in a pigeon-house? Why are these carpets, this silk, this velvet—his, more than ours?—"

"'Because he has earned them,' suddenly interrupted some one.

I started; the contractor was behind us, dressed in embroidered pantaloons, and a fine dimity dressing-gown.

He was a little grey-haired man, but strongly built, and with an authoritative voice.

'Ah! it seems that you are a reasoner,' resumed he, looking me full in the face; 'you are jealous of me; you ask by what right my house belongs to me, rather than to you. Well, you shall know—come this way.'

Going into the study, they found there a long table, covered with colour-saucers, pencils, rulers, and compasses. "Coloured plans, representing the sections of a building, were hanging on the walls. Here and there on shelves, we saw little models of staircases or roofs; mariners' compasses and graphometers, with other instruments, of the use of which I was ignorant. At the end of the room was an immense paper-rack with labelled divisions; and statements and estimates of buildings were heaped up on a writing-table. The contractor stopped before the great table, and showing me a drawing—

'Here is a plan to be altered,' said he; 'they wish to lessen the building by 10 feet, but without diminishing the number of rooms, and a place must be found for the staircase. Sit down there, and make me a rough sketch of it.'

I looked at him quite surprised, and observed that I did not know how to draw.

'Then examine this surveyor's estimate for me,' resumed he, taking a bundle of papers from his writing-table; 'there are 312 articles to examine there.'"

Of course, our mason was not sufficiently used to such work to be able to discuss the prices, or verify the quantities.

"'At least you will be able to tell me,' continued the contractor, 'what are the legal formalities to go through for three houses I am going to build; you are acquainted with the rules of conveyance, the rights and obligations of the neighbours——'

I interrupted him hastily by saying 'that I was no lawyer.'

'And as you are not a banker either,' went on the contractor, 'you are doubtless ignorant on what terms one ought to arrange one's payments—what is the average time at which one must sell—what interest one should draw from one's capital, not to end in bankruptcy? And as you are not a merchant, you would be much puzzled to name to me the markets for the best materials—to point out the right time for purchasing, and the cheapest means of carriage. As you are not a machinist, it would be useless to ask you if the crane, the model of which you see, will make a saving of power. As you are not a mathematician, you would in vain attempt to judge of this new project of a bridge, that I mean to employ on the Lower Seine. In short, as you know nothing but what 100,000 other journeymen know, you are only fit, like them, to handle the trowel and the hammer.'"

And then he points out to his abashed listener that it was because he had learned what the other had neglected, that he had made his way: that it was by force of study and a strong will that he had become a general, while others had remained in the ranks. If the quotation suggests to any of our inquiring correspondents objects for acquirement, pursuits to which they may wisely direct their attention, it will have answered a double end.

From some we receive at times poetical lucubrations, too often tinged with discontent, and embodying complaints against those above them in the social scale. Thus a Bethnal-green weaver (J. D.) sent us 112 lines, setting forth touchingly the melancholy condition of his family, and wrongfully attributing it to the parsimony and bad feeling of his employers. We cannot print the whole of the poem, but we will give some portions of it for more than one reason. The lines begin:—

"Life's to some a happy dream,
With smiling friends and pleasures gay,
With scarce a cloud to mar the scene,—
All brightness, like a summer's day.
The trials the struggling poor do feel
Are unknown to their breast;
The wrongs to which the low-born yield
Can ne'er disturb their rest;
And many a noble heart has broke
Beneath its silent woe,
With heroism that bespoke
A greatness such as heroes show.
And I, the son of poverty,
What wretched sights I've seen,
Where want has held its sovereignty,
With visage haggard, lean.
'Twas in a weaver's cheerless shop
Where first I saw the light;
The want of work had been our lot
T' increase our wretched plight."

The father, long out of work, at length obtains employment, and, according to the writer,—

"For thirteen years in slavish toil
He swelled their princely store,
For others wove the costly robe,
While threadbare clothes he wore.
From early morn till late at eve,
And oft till midnight hour,
Within his loom exhausted, weave
Till nature checked the power.
And when his trying task is done,
In fear he wends his way,
Lest in his wrath the heartless one
Should stop his scanty pay."

"His home—alas! scarce worth the name—
A room some few feet square,
With bed and loom crammed in one room,
And children huddled there.
With such a scene before one's eyes,
To be condemned to toil,
Half clothed, half fed,—much better dead
Beneath the peaceful soil."

Getting too old to weave he is discharged; and the writer reproaches the rich who wear the brocade for disregard of the want which prevails where it is made; refers to, what we know to be the case, the honesty with which, spite of poverty, the employer's materials are preserved and returned, and then concludes thus:—

"When man's frail nature can withstand
The trials I here relate,
He must deserve from Fortune's hands
At least a better fate.
Here might that bless'd philanthropy
That sets the Negro free,
Find scope to work its charity
Among such misery.
If for our lives of endless sin
A virtue can atone,
'Tis this, our duty to begin
With charity at home."

Here is another effort of a working man, an "Ode to Science," signed *Revilo*; and which, although ill-spelt in the original, and unpolished, displays ability and intelligence:—

"Science! Minerva's child! mysterious light,
Appearing oft in scintillations bright;
Around each lowly thing thy mystic ægis plays,
In following where our tutor'd reason strays.
With calm abstraction fused and quick conception by,
What visions crowd the earth, what phantoms dim the sky!
Before our rigid eyes what secret scenes ye bring,
And at thy magic touch what hidden features spring!

Star of Isis, thou! beside each towering pile,
Thy pristine image lay, pale, mirrored in the Nile.
Cradled, nursed, in early twilight gloom,
In busy life thy voice was heard, and by the massive tomb.
Fair youth attained, and, spann'd the intervening sea,
The groves of Greece thy praises sang, and incense offered thee.
Then why thy temple's cella guard, such watchful vigils keep,
Its store of truths conceal, why hush those truths to sleep?
Say would such wond'rous words our reason prostrate lay,
Spread dread confusion round, let mental riot play?
Then guard thy virgin hand, let no wild floods destroy;
In spreading here thy priceless pearls, the harmless stream employ."

A young carpenter, with a better prospect than many of his fellows, possessing a certain aptitude for rhyming and for otherwise expressing his thoughts on paper, asks our counsel as to the propriety of abandoning his occupation, and making "literature a profession." It is so special a case, so utter a wildness, that we may not occupy much of the space belonging to all with remarks directed to only one. In the little book to which we have already referred, he will find some advice by which he may profit. The son of the working man whose life it sets forth, advanced somewhat in position, and imbued with a love of letters, is contemplating a similar step. He would go to Paris and write. "We no longer live," says he, "in those times when the workman's hand was rivetted to his tools; the door is open now to every one." Fortunately, however, he meets in a new overseer of the works with one who had tried the path and failed; who shows him what is wanted for success in such a life—a life for which he had had no preparation,—and tells him what he would do were he in the questioner's position.

"I should remain where Heaven had placed me, not only from prudence, but also from pride and choice; I should put my knowledge at the service of my working friends; I should show them how intelligence can be united with labour; I would teach them to find a reward for bodily fatigue in the pleasures of the mind; I would help as well as I could to raise their understandings, to give them a hunger for thought; I would devote my life to make them my equals, so that I might no longer be alone among them. That is your true vocation: do not make knowledge a back-door, from which you would escape from the midst of your brothers, but a ladder that you raise for them to mount to your level."

There are many of our readers who may benefit by this advice, though they do not contemplate the assumption of a new profession.

We must now, however, conclude these observations, and in doing so would offer a sentence of consolation to those who, wanting time and opportunity, find it impossible to make that progress in knowledge which they desire. We would remind them, in the words of the quaint old writer Quarles, that—

The masterpiece of knowledge is to know
But what is good from what is good in show.

The chief end of knowledge is *wisdom;* the chief wisdom is to be GOOD. And this all may achieve who will earnestly strive for it, let their position be what it may.

THE ACCIDENT AT SYDENHAM.

ON Friday in last week the inquest was resumed at Master's Hotel, by the coroner for East Surrey (Mr. Carter) and the jury, who again visited the building, together with several of the directors and other gentlemen.

On their return, and after hearing some farther evidence, including that of Mr. Vignoles, C.E. who happened (no thanks to the coroner) to be visiting the building, and who attested the correctness of the principles on which the staging was constructed, the jury declared that they did not desire to hear any more evidence. The coroner accordingly summed up, rather too impressively, however, in favour of making things pleasant, to be likely to produce a very favourable feeling on the mind of the public, who are apt to suspect, from obvious anxiety such as this, that there are reservations where there may be none, and so to be influenced in the very contrary way to that desired. The court was then cleared; and on the public being readmitted, the coroner said he had been desired by the jury to state, with regard to the melancholy investigation they had just concluded, that they considered no blame whatever attached to any individual, and they were also anxious to express their strong opinion, that after having carefully examined all the circumstances of the case, they felt satisfied that the occurrence was purely accidental. A formal verdict of "Accidental Death" was therefore recorded in each of the cases, and so the proceedings terminated.

The following is part of the evidence:—

Mr. Charles Vignoles said: I am a civil engineer. I am well acquainted with the principle on which the scaffold is constructed. I saw the wreck of the trusses and made a minute examination of their several parts. I have endeavoured to form an opinion as to the cause of the accident, but I am not able to do so. In fact I have not the slightest conception of how it originated. The scaffold is constructed on a principle mathematically correct, always supposing the materials of which it is composed to be sound. Judging from what I saw, I consider the materials forming the scaffold must have been of the best character. I do not consider it injudicious to have attempted to carry the truss across a span of 120 feet, at a height of 100 feet. The height could have nothing to do with its safety. I consider the mode of construction, and the operation of carrying it out, both judicious and prudent. I should have had no hesitation in adopting the same principle myself, and I consider the accident to have been one of those unaccountable circumstances which no human mind could have foreseen.

Mr. Thomas Crampton, also present accidentally, said: I am a civil engineer. From the nature of my profession I have frequent opportunities of judging of the qualities of iron. I have examined the remains of the trusses that fell; and I have formed a decided opinion that they could not be made of better materials. The principle on which the trusses are constructed is right, and I consider the accident to have been one of those unforeseen events that cannot be accounted for. As in the case of a railway accident, we might make fifty suggestions as to the cause, and yet not hit the right one. I have only one remark to add: I have heard that it is the intention of the contractors to throw up a scaffolding from the ground for the completion of the transept roof. I can only say that if the work were under my own direction I should not do so. I should proceed with it on the same principle as before, believing it to be perfectly safe.

Sir Charles Fox said: An impression appeared to have obtained in the minds of some of the jury that the same description of scaffolding had never before been used for the same width of space. This is not so. I have myself built a permanent bridge on the Great Northern Railway on the same principle, with a span of 265 feet. The principle has been adopted at the new palace because it was considered the safest thing to do. The risk and hazard of carrying up a scaffold 208 feet from the ground would be far greater, because if one upright was insecurely lashed, it might not be discovered until the strain came upon it, and then all would come down together. In point of economy the upright scaffold would be the cheapest to construct, because the material of which it was composed would come into use again, but in forming a truss scaffold the material would be in a great measure destroyed.

Assertions and counter assertions as to the fear of the workmen, previous to the accident, that their lives were in danger, have been made, and we think that it would have been better in every way that the denial of any such fears had been less positive, because, in the first place, even though they did exist, no blame could, solely on that account, be attachable to any one, for the erection of so vast a building cannot be realized without both peril and fear; and because, in the second place, we have reason to believe that not a few of the workmen did entertain most serious misgivings, as to the staging in particular,—and it must not be forgotten that the scaffolding put up in the first instance had fallen. It may have been, however, that neither the contractors nor their foremen were ever made fairly cognizant of the fears of their workmen. There are many workmen who will not acknowledge their fears, and not a few, we may add, who dare not, or at least who peril their employment by doing so. We have even had occasion to deprecate the practice of some employers, or their foremen, in scoffing at the expressed, and, as the issue proved, the reasonable fears of their workmen, and recklessly and fatally putting themselves in peril in order to instigate their men to disregard such reasonable fears.

A correspondent, T. G. Waterman, "one of the operatives at the Great Exhibition at Sydenham," as he calls himself, says: "I find that in the examination of G. Williams, before the coroner, it was stated that the men were under no apprehension, which I positively assert to be false, men having been continually losing time to induce the foremen to send other men to take their places. Men are now leaving their employment, not only from the great personal risk, but from the want of feeling displayed by the foreman of the carpenters;" and he instances the harshness exhibited in the case of a man who fell on the day *after the accident*. With this however, we do not desire to meddle.

At the inquest held on the bodies of the men who died in Guy's Hospital—two, not three, as at first stated—a verdict of accidental death was also returned. In the course of the inquiry Henry Willbee thus described how the ends of each truss rested on the columns. He said there is a "half-timber" placed upon the top of the girders. The girders go from column to column. Each end of the tie-bar rested upon this "half-timber," and when the truss was completed, and properly secured, it was moved along by "prizing" each end with a crowbar. The half-timber was lashed to the top of the girder by ropes. These half-timbers are not disturbed where the trusses have fallen. The weight of each truss would be about 5 tons to 5½ tons in weight. I cannot at all account for the accident.

We may perhaps endeavour to do so.

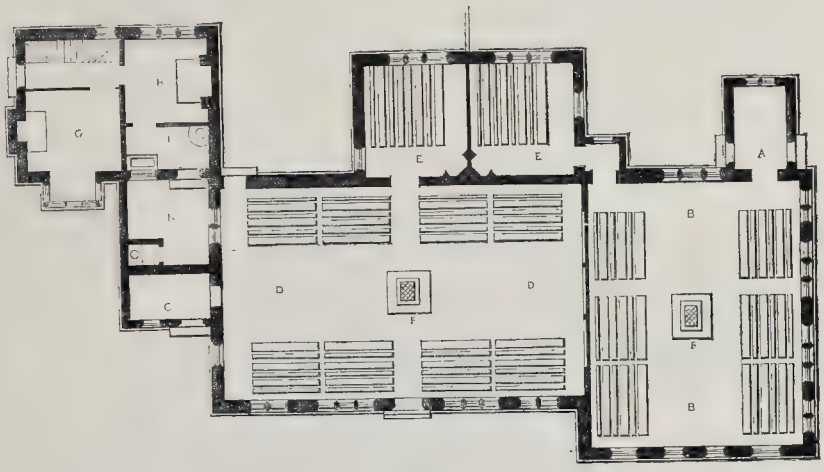
ON PRESERVING BUILDINGS, OR OTHER MONUMENTS OF LIME STONE, FROM PREMATURE DECAY.

A MEMOIR on this subject was laid by M. Aimé Rochas, before the French Institute, some time since. If we consider the chemical composition of the different sorts of limestone of which many of the oldest and finest buildings on the globe are constructed, we shall find, that those have resisted *best* the influence of the atmosphere and time which contain *most* of silica in a state of chemical combination; while, on the other hand, those where this substance is either wholly deficient, or only existing in a state of mechanical admixture, have most suffered. According to these premises, M. Rochas has sought after an expedient to remedy this inconvenience, both with monuments now existing, as well as those which are already in a state of incipient decay. M. R. thinks, that this can be achieved by placing silica so in contact with the lime, that a hard, compact, and nearly indestructible compound of silicate of lime is produced. The facility with which soluble silicates will combine with the lime of monumental materials, and convert even the softest rock in the most compact silicate of lime, will, as is asserted, allow this operation to be carried on, in many cases, *in loco*. The same substance may be used for buildings exposed to the air, as well as for statues, inscriptions, &c. viz.—the *silicate of soda*, attainable at a cheap rate.

It has been ascertained, that the gray, brown, or even black colour, which limestone, exposed for a long lapse of time, assumes under the climate of Paris (London?) consists partly of the cobweb of an imperceptibly small insect, partly of a vegetation of cryptogamic plants, equally minute. By the presence of these bodies, moisture can better adhere to and affect the lime. The prevention of this decay has occupied many architects and chemists, but the specimens laid by M. Rochas before the Institute are said to give better promise for the success of his method than in some other cases. The samples had been furnished by M. Viollet-Leduc, architect of Nôtre Dame, at Paris, and were chosen amongst the most ancient and most decayed fragments of some of the exposed parts of that building.

ST. JOHN'S NATIONAL SCHOOLS, MARGATE.—MR. G. MAIR, ARCHITECT.





PLAN.

ST. JOHN'S NATIONAL SCHOOLS, MARGATE.

THE schools are for 200 boys and 150 girls, with class-rooms and a teachers' residence. The walls are built of Kentish rag-stone, with Bath-stone quoins and dressings. A movable partition divides the two school-rooms, in order to make one large room if required. Mr. George Mair was the architect, and Messrs. Jenkins and Smith, of Margate, the builders. The amount of their contract was 1,719*l.* to complete the whole of the works.

REFERENCE TO GROUND-PLAN.

A. Girls' entrance and porch, 12 ft. by 7 ft.
B. Girls' school, 37 ft. by 30 ft.
C. Boys' entrance and porch, 12 ft. by 7 ft. 2 in.
D. Boys' school, 50 feet by 30 ft.
E. Class-rooms, 16 ft. by 14 ft.
F. Stoves.

MASTER'S HOUSE.

G. Parlour, 12 ft. by 12 ft.
H. Kitchen, 12 ft. by 12 ft.
I. Scullery, 12 ft. by 6 ft.
K. Yard.

AN ESSAY ON ARCHITECTURAL EDUCATION, AND THE POSITION OF THE PROFESSION.

I MUST apologize for addressing you personally upon the subject of the essay accompanying this note. Yet in appealing to you it is not I that request attention, but a cause and a question the importance of which your widely-circulated journal has not failed frequently to urge. You, sir, in the publication which you have established, have taken the first step towards aggregating our too formless profession. It is

upon your judgement and the judgement of such as yourself, that I venture to intrude this suggestion for a second and still more emphatic step of improvement.

Yet I should not indeed have ventured this much, if not under the warrant of an award from the Royal Institute of British Architects. We are told perpetually that men are but magnified children, yet what child willingly learns its letters? And should not they who *ought* to learn and *will* not learn be *made* to learn? It were impertinent in me to repeat to you arguments known and published so often by yourself, for an improved educational status of the architectural profession. I will rather employ this opportunity in earnestly and respectfully begging the leverage of your pen to raise away the inert mass of indifference on the subject amongst architects.

Art has been forgotten for generations whilst men have pursued science. The analysis of the *savant*, and synthesis of the artist, are, perhaps, incompatible powers of mind. But in the vibrations of the great pendulum of thought, art seems now about to fill the ascending sweep. And is it not time that the fine art of England became something better than a lie?—her towns and cities, than old curiosity-shops? Are the words "art" and "artifice" for ever to signify the same thing?

Is it not a service worthy of attention to aid the lifting-up of this great and glorious art of architecture into a position where public interest, attention, and criticism, would soon shame her into truth and life? For of all things that art—and architecture specially—requires, public attention, sympathy, or even blame, is in our time the most needed. Neglect is the *Grotto del Cane* of fine art. To an architect who is an artist and not a tradesman, the review of his profession is sad in the extreme. There is no *esprit de corps*; indeed there is no *corps* for the *esprit* to animate. There is no public or united energy, feeling, or sympathy in it. But that which should take rank among the noblest of pursuits is an undefined, a scattered, disjointed *business*, here and there, and where not, in all places, and in all or any hands.

Like Osiris, its members are dissevered and separated; and, like Osiris, it will not be a god again until they are united into one body.

The name of "Architect," which should be the signal of respect, the manifestation of competent ability and of gentlemanly uprightness, is assumable and assumed by men remarkable for ignorance and vulgarity of conduct and mind.

But let the eyes of the world be turned upon architects: the profession becomes one of scholars and gentlemen, and fine art is revived in the land.

If I have intrusively said too much, sir, I ask pardon for having done so. But if I shall have in any degree, and without presumption, recalled to your mind a subject which architects should never forget till they have accomplished, I shall be glad to have addressed you as I have done; for I feel that to obtain your aid and interest would be to gain the most valuable of that assistance so much required for the advance of architectural education; and that to enlist your pen in a cause which I have so really at heart, would recompense me for all risk of misapprehension which I run by the publication of my Essay.*

JAS. KNOWLES, JUN.

We are told by the Roman poet, that the love of wealth grows with the wealth itself. The same may be said of honour. A man who is honoured will take some pains to become more honourable. He feels nobly responsible for his established self, and acts for its perpetuity; whilst, so acting, he insures its greater growth. This rule, applicable to men, applies also to bodies of men, societies, communities, nations. For a nation is but an aggregate of individuals, and a multitude of like things does not produce diversity. It follows, then, that an occupation, a trade, or a profession, held in honour, becomes on that account more honourable, and by the action and reaction of itself grows continually more worthy and excellent.

Now the profession of architecture includes within its range of necessary knowledge wider fields of study than characterise either of those other professions, medicine and law, which the world speaks of emphatically as "learned." The catalogue of excellencies insisted upon by the arch-architect Vitruvius describes not only the most perfect of artists, but almost the completest of men. And this catalogue, though certainly excessive, is what every real follower of the greatest and mother of the Arts, more or less realises, intentionally or unintentionally. Yet we shall find in society not a few people totally unacquainted with the *meaning* of an "Architect." We shall be told, "That he is a sort of builder,—differing somewhat,—rather superior, it is believed, but pretty much the same." The title of architect is not, as it should be, like that of a barrister or physician, a certificate and diploma of honour. Amongst the wealthier and nobler classes better knowledge and better appreciation no doubt prevail; but at best, the architect does not take that rank which his position in the aristocracy of intellect and talent requires for him. And why is this? The world declares, with truth, that he does not deserve this position. That not only sometimes, but frequently, he is far from being a man with any rational claim to aristocracy of any kind: we have heard it said that an architect does not always talk good grammar!

And so it comes to pass that this great profession—unhonoured, because not understood—becomes in itself less honourable.

For honour is not an empty name, but a great and prevailing fact. Few deeds of prowess or of valour have gilded the dwellings of men but those bred from the love of the approbation of our fellows; a motive power to great works, not planted by nature in our bosoms without a solemn purpose, and a mission to be listened to and obeyed.

Is it not worth while to inquire how this great profession—the queen and mistress of those arts which are the fondled daughters of our human intellect and faith—has lost her high place among men, or, at any rate, does not hold it; that her priests no longer walk clothed with reverence?

We are told that they are false priests now to a false goddess, that their learning is a sham, and their power not even a name.

And what answer shall we give to these accusations—these justifications of indifference, of withheld esteem?

There is no answer *now*, but the men themselves must prepare and furnish one who are questioned. How they may do this, let us inquire.

Respect is given to forms. There are a thousand minds of men to cling to a form, where one shall grasp an abstraction. All great teachers have known this, and taught in fables. A material intellect apprehends only through material images. A form is such an image; it is a tangible reality to abuse or reverence, to fight for or abjure. And form, more than essence, governs the motions, the deeds, the impressions of mankind. With all of us, form is indispensable: we are not omniscient. We recognise in form the manifestation, the symbol of a knowledge, of a faith, of a power, which time or ability fails us to master in its reality and essential being for ourselves. We require the presence of forms to inspire us with belief; for we say, "Nothing can come of nothing—this form, then, indicates a substance." Our belief endows us with reverence, and reverence is the synonyme for honour.

For outward exhibition, then, we want a form; but an outward form must have an inward true basis, or it will infallibly be destroyed. The ass in the Lion's skin dares not to bray. The necessity for a form, then, entails the necessity for a reality from which it may spring.

Now, if we have both form and essence, we may stand forth as true men, and claim for our crafts due reverence.

Let us drop image, and ask now seriously, what form and essence it is which architecture and architects require to assume before they will receive the honour and respect which their pretensions claim.

Socrates taught that ignorance was the mother of all vice and crime. Men in the nineteenth century are beginning to practise the wisdom of Socrates; and the education of its peoples is to-day the recognised safeguard of the world. The panacea for all men is the cure for any. Let us then apply this heaven-born remedy to our own case, with those modifications by which a wise physician will suit his various patients.

In the dominion of architecture we find an empire founded upon the intellect: and not only so, but especially upon one subtle and ethereal element of it. That delicate combination of faculties principally and essentially is called into play, whose nice perception, clear discrimination, and perfect memory, we signify by the names of Imagination—Taste—Invention.

This is a combination given by Nature to a few men, born poets, whether poets of words, forms, or colours. It is a combination, for the appreciation of which the minds of other men, not so gifted, must be strung up into a proper sympathy, by careful treatment and fine education, and which in the mind of the artist himself can only be imperfectly supplied by such a perfect education as falls to the lot of few men, and fewer architects.

This we speak of that combination only which makes the *architect—i. e.* the *poet*. Much beside is essential. This is a combination which must be superadded to all the knowledge of a constructing, building mind, which exact science and numerical calculation can never give; which no man should become an architect without possessing; but the absence of which, in every man who is *compelled* to architecture, should be supplied by an education very perfect—tested by an examination very strict.

Such an education and such an examination would guarantee, to the title of architect, a weight—a possession—of no little worth,—an educated mind. Knowledge is power. Power exacts worship: our architect is honoured possessed of that power. The man honours his profession in turn, devotes to it his best energies, and sees in it a ladder to higher things than bread alone.

Now Göethe has said, that the fate of a nation is in the hands of its young men under twenty-five years of age: it of a whole nation, then of those elements whose aggregate composes it, of all those divisions, classes, and members, whose articulated entity produces the body-politic.

It is then amongst the young men that the reform of our own art profession should begin. Youth is plastic: we expect not to bend full-grown trees into better fruit-bearing shapes: we deal with saplings.

We would then, for the establishment of our profession upon a better and more honourable basis than it now occupies, first hedge it round with "form," to prejudice on-lookers in favour of its worth; and we would make this form the outer indication of something that underneath it was its real life.

We would—that is, create formal and public examinations of all candidates for entry into the profession; and we would extend the scope of this examination until it should sift an education prepared from very wide fields.

We would say, "Any man capable of passing this ordeal shall receive a certificate and diploma; not possessed of which he shall be debarred from the practice of an architect. We will make no conditions of previous study, exact no terms or places of abode; from any source most pleasing, at any time most convenient, in any periods of length or brevity of application most suited to various capacity,—let each select his own authority, time, or place. We shall make no inquisitorial demand or inspection on these points. The enforcement of them would be unjust, old-world, and out-of-date; for men are by nature different, and he is mad who would reduce the sea-waves to one level—make them flow in one time. We demand but one thing imperatively—ability to cross this Rubicon, not considering whether the strength to do it be born of the north or the south, mountain or plain, palace or cottage.

But before proceeding to explain the practical mode of effecting this proposed reform, we will meet an objection not unlikely to be advanced,—that this centralising of a profession into a "guild," is adverse to the freely competitive spirit characterizing our age.

* The Essay is published as a pamphlet by Bosworth, of Regent-street.

What is the great plea, the high justification of free competition, that it should sit upon the throne of the world? Surely this,—that its practice confers the greatest blessings upon the greatest numbers. It protects the many from the few. Such, we anticipate, is the whole and true value of the principle; such the foundation it finds in the heart of Christians and philanthropists.

And such is the effect of a wise protection to a learned profession; the benefit and protection of the public. Such a profession is no closed guild; for whosoever will, may demand admission thereto. Were it not for such a *public*-protecting system, the people would be poisoned wholesale by the ignorance of druggists. Were it not for such a *public*-protection the people would read no books, for none could afford to write them.

Both these protections are protections to the public; denied by few as just; confounded with protective monopolies for the benefit of individuals by none but the worshippers of monastic ghost-systems, or the blinded interests of ignorance.

Why then, if provided by a wise legislation with good books and against bad physic, refuse to insure to the people good houses, sightly churches, inoffensive galleries of art and science? The protection of learned professions is the protection of society at large against the pretensions and impudence of quacks; and if there be quacks in medicine and book-making, what shall be said of house or church-making? If anybody doubts, let him walk round the suburbs of London!

If then it be granted, as without much hesitation we think it will be, that the reform of our profession should reasonably commence with a question of education (for such a reform is admitted both by ourselves and the laity to be much needed), in the next place, we propose to indicate the most practicable and otherwise best mode of administering this reform.

Supposing that we were called upon to put into execution our theory, we should, in the first place, by Act of Legislature, confer upon the Royal Institute of British Architects powers analogous to those placed in the hands of the Inns of Law, and of the College of Physicians or Apothecaries' Hall.

The Institute we would choose, because it is a Royal corporation already founded; a constituted and natural channel for communication between the profession as a body and other bodies, societies, or the world. Because it is composed of the experience and station unattainable except by years; and because, so composed, and being an established and recognised body—office—machine, it affords, beyond question, the most *practicable* quarter for an initiatory step.

We would then vest in the Institute a legal power of examination, and refuse legality to the architectural practice of any man not possessed of its diploma; the diploma being granted to ability alone.

Now, if an ordeal of this kind were instituted, let us consider its effect. A young man entering an architect's office as pupil, would feel assured that he must do something more than tattoo the desks, fight the clerks, snub the visitors, or scribble for magazines. He would feel assured that the time of preparation given by his term of pupilage was none too long to master so much of the sciences, arts, and fine arts, as should be required of him at the examination; as should give him correct ideas of the relations and properties of material things; the genesis of "styles" or forms of thought; the exode of high art with faith; so much of general knowledge as should confer upon his intellect that tone, balance, and discrimination, which so greatly assist and solely supply innate genius of design.

The examination passed, confers upon the successful student honour and notoriety,—the last the conservator and nourisher of the first; and the World, hearing of diplomas, certificates, studies, and trials, would decide that "this architecture must be one of the learned professions, like medicine and law," and would receive its professors with a respect such as is given to theirs,—as refined, as intelligent, as educated men.

In this manner the profession should be weeded of quacks and ignorance—in this manner the scandalous appropriation of the word "architect" should be prevented from undertakers, carpenters, and builders; and, most important of all, in this manner the public would be led gradually, by the contemplation of sounder taste and purer judgment, to a preference for wholesome beauties to noisome ugliness; and Art, standing upon the high vantage-ground of a national approbation, anxiety, and pride, should begin to live again in her own strength. For we may not hope to instil into the multitude a love for better things by argument or theory, but only by rendering better things such a *habit* with them as bad things are now. The fine arts are the latest, subtlest exhalations of intellect—the latest productions of a material progress—the latest enjoyments of an omnibus-travelling populace.

As to the scope of the examination itself, we would desire, first of all, the exhibition of a general insight into the natural sciences—natural philosophy and chemistry, not only on account of the absolute, necessary information obtainable from a knowledge of the mechanical powers and forces, hydrostatics, pneumatics, chemistry, and geology, but also to invest the mind with those wider and grander views of creation, whose inspiring power for great thoughts is so unapproachable by other means. Not the calculations merely, but the *morale* and the poetry of science should thus be floated, like grand pictures, before the mind, whose tone and character would be thereby so influenced for advantage.

In the next place, a mathematical facility, to a certain limit, should be insisted upon. It is unnecessary to point out, more than in the previous case of natural science, the direct value of this knowledge; and its educational force as a mental exercise is allowed on all hands. The six first books of Euclid and trigonometry might mark a minimum of essential acquisition, and form an index to mathematical attainment.

So far we meet only with an education indispensable, in its bare *knowledge*, for a just hope of legitimate success in the lower duties of the profession; but we would now demand the investigation of subjects, not perhaps so evidently or mechanically necessary, but which, nevertheless, to anybody who ponders over the significance of an architect's especial, peculiar, and *architectural* occupations and achievements, will appear not less desirable.

For it must be remembered, that in preparing an architect, we are engaged upon one of the grandest audacities of the human intellect. Other arts find vehicles of expression for their passions, emotions, delights, aspirations, in imitation, or in the exercise of a property of speech as common to all men as their human nature. But architecture has no model even for her vehicle of expression. Magnificently bold, her task is to follow the modes, the laws—not the forms of nature herself,—to supply by creation of them the fulfilment of a purpose, the means of an end required,—to take the great staff of Nature in her hands, and walk, at an aspiring distance, in the same paths,—to recognise in "adaptability" the secret bond and mainspring of the world, its beauties and excellencies, and in the same adaptability to recognise her only guide and her great ambition.

For such a task, what can suffice but the innate aptitudes which give birth to the artist—the keen sensibilities, the wide and true discernments of diversities and affinities, of resemblances and distinctions, which are the basis of imagination? There is no drill to make a perfect soldier of a one-armed man. Yet education and ingenuity shall do much for such a man in soldierising him, by teaching him a thousand shifts and capacities otherwise not acquired, because not needed, by leading him to the power of compelling adverse circumstances to his aid, by giving him, in short, a knowledge *how to cover his loss*. In the same way, education and knowledge may do much both to increase the capability of the artist-mind, and to endow the inartistic intellect with pure principles and large share of powers.

Considering then, again, from how extensive a range the true architect gathers his lesson of method, *motif*, spirit,—from what distant analogies and various objects he educes the great text of sympathy and adaptation,—considering the faculties in virtue of whose action the artist-mind accomplishes these learnings,—how keen their penetration, how cosmopolitan their nature!—considering, we say, all this, it will not appear excessive, that, as the next and great feature in our examination, we desire a competent knowledge of such subjects as the following:—

Of General History, ancient and modern.
Of the History of Architecture.
Of the History of Painting.
Of the History of Poetry.
Of Music (practical) upon any one instrument.
Of Sketching and Tinting.
Of the French Language.

And these all to be tested by no superficial questioning. For, as we have said, a knowledge of art is the best substitute for artistic genius; if, as unfortunately it must be, inartistic minds will pursue the path of the most artificial and abstract of arts.

We conceive that a professional education of this nature would expand to the ability of generous and noble thoughts all capable minds, and that in such a curriculum no more is included than would be essential to an architect.

Previous and ordinary school education, and the irresistible curiosity of a roused intellect, would extend this sphere of knowledge in every studious mind; whilst the most stolid should be precluded from a barbarity which accompanies ignorance, and manifests itself not only in general thought and behaviour, but so painfully in bad design, to the disgrace and dishonour of our noble heart.

Let us now say a few words as to the further application and detail of our examination, in matters less directly educational.

A recent article in *The Times* contained the following excellent remarks:—"To guard against mal-practices, the standard of feeling in the profession should be raised; and that must be done, not by rules of etiquette, but by closing its portals to all but scholars and gentlemen." These words referred to the legal profession, but apply with equal force to our own. We must remember, however, that our *only* possible guarantee for a probability of gentlemanly courtesy will lie in that refinement which always more or less accompanies a liberal education.

We would in our own profession respect those distinctions whose confusion forms one cause of its present deficient order, and would draw a wide line of distinction between the machine and the artist, both of which faculties of human power are applied to the full pursuit of architecture, but one of which alone is employed in the duties of a surveyor. For an engine of sufficient accuracy could measure and calculate. Numbers are brute powers, and do not think; but no engine can imagine or design. The full practice of the architect combines the man-machine and the man-thought; but the man-machine alone would suffice for the bare routine of a surveyor's duties. We would not be content with this; we would make the surveyor more than a machine, but the architect as much more than the surveyor.

The surveyor's studies should be subsidiary and introductory to the architect's. Every architect should be a surveyor also; but the spheres of full architect and full surveyor should be carefully distinguished, and their occupants take very diverse grade in necessitated intellectual acquirement, and in consequent honour of position. And this, not for the sake of men, but of Art, from whose due worship her priests shall best receive reverence.

We would then divide the examination into two departments, and would make it incumbent upon surveyors to pass the first division only, comprising the exact and natural sciences, before obtaining a diploma; whilst an architect should pass the whole.

In this way a man might obtain both diplomas, and practise as surveyor or as architect; but the architect's diploma should control and modify the surveyor's, when co-existing with it, in and on account of the following particulars:—

By his diploma an architect should be honoured, as we have seen, as a capable and educated man; and by it he should be also

bound in certain points of etiquette, whose violation tends to lower his professional standing.

An imputation equals a proof in the public mind; and we would therefore, by our diplomas, guard against the possibility even of imputation of unjust dealing.

We allude to the employment of architects as surveyors by builders, which lays the architect open to such imputation. This should be prohibited to the man who takes out an architect's certificate. For it is not wise to proceed in such a matter as though none but upright hearts dwelt with large minds; and rules for the repression of dishonourable dealing will injure none but the dishonourable.

The danger to reputation to be avoided is, as need scarcely be said, a suspected possible collusion between the architect (employed as a surveyor) and the builder. This danger arises from the fact of the position of architect and builder — employer and employed, being in such a case reversed, and at an after time reinstated, by which means dishonest men can play with ease into each other's hands, to the detriment of a third party whom both are professing to serve. The possibility of this false position would be prevented by the means proposed of forbidding an architect, by his diploma, from surveying or measuring for builders. Now a surveyor's position is never so reversed, with respect to a builder, as an architect's may be—and he is indebted for employment equally to the profession and the trade; so that, treating the one unfairly by advantage, he offends the other. The difficulty only applies in the *case of reversed position as employer and employed*, to the imputations growing out of which an architect would be subjected when a surveyor would not, and to which an architect's professional honour should not be even exposed.

But he might, certainly, design for a builder as an architect without the danger even of imputation; for there can be no collusion between two men to cheat each other.

All this sounds very sad, no doubt, and not creditable to architecture to recognise! yet it is justly specified, in the form of admission, as an "Institute fellow." And the fact of its necessity, as a rule, speaks of the great necessity for a professional reform which might clear away both these imputations themselves, from the shadow of which such rules are made to guard, and with the imputations also the rules.

These subjects lead us, in conclusion, to wider visions of architectural prosperity, such as we might hope to see gradually grow from a basis laid in the legal examination we have described, and which appears to us the readiest, most just and practicable course of commencing a wise and desirable reform.

By-and-by we should find an architectural college associated with, and growing out of the institute. For when once the indispensable necessity of education is determined by legal enactment, very shortly convenience will suggest and endow professorships to supersede desultory and uncertain modes of acquiring proficiency; professorships forming a college open to all by fee; but by no means imperatively to be attended to by any.

The "Institute" thus enlarged and advanced in public and professional education, should become not only the fountain of all professional honour, but the grand central court in which the advancement of their art should form the paramount object of architects.

In it should be vested the execution and supervision of the Building Act, and the office of the official referees.

On it should be reposed a power of formal examination, censure or acquittal in all cases of failure or accident to buildings erected under the direction of architects.

From it would radiate, with a greater and a more binding influence, the *dicta* which should establish certain rates of professional remuneration as fair and equitable. Such rates it should make (as at present) conditions of membership of its body; although no *legal* impediment should hinder any man from charging what he pleased.

For to support an artificial "price" for Architecture would be none the less absurd than an artificial protection of corn, or of any other commodity which people desire to purchase.

Whilst, then, legally at liberty to charge at his own discretion, an *esprit de corps* would lead a man to observe those rules which a body so illustrious and notorious as the educational and judicial institute of the profession required of its members.

An architectural academy constituted upon such a scale, and which would be, in fact, the epitome and representative of the profession itself, could not fail to confer upon it a dignity in the eyes of the world which should act most beneficially upon the progress and cultivation of the great art.

All members of the profession would be eligible as members of its great central body, whose fostering influence it would thus become the care of all to guard and purify. Honours bestowed by it would become covetable distinctions; and, growing in its extended existence out of a necessitated enlightenment of architects, it would confer upon the community the leaven of a highly educated class of men, and the advantage of a Living Architecture to ennoble, embody, and perpetuate its epoch.

OUR BRIDGES.

THE declining condition of Blackfriars and Westminster bridges now becomes a subject of serious reflection for a growing population with increasing commerce. Both these structures are sustained, as to the two central arches, by cradles of supporting beams; and still the buttresses sink and the chasms of masonry gape wider. So far as the traffic is concerned, there is no great impediment save through two arches to which access is barred by a floating breakwater: still these appliances must fail, when by gradual subsidence the crash will come,—making rocky islets in midstream, with the total stagnation of traffic. If we cannot build bridges to stand, would it not be well to pre-arrange in all new ones more secure-looking scaffold props than the wooden constructions now in use? To prepare, suppose iron-cast sub-arches of symmetrical proportions, so that if architects or pontificers cannot fairly and with certainty found a buttress on the channel of Father Thames, the subsidiary contrivances shall be ready to support the falling mass.

Any contrivance which might reduce the enormous cost of bridges, so as to avoid the necessity of imposing a toll to pay for the erection, must be a vast public benefit. Of our bridges, seven in number, only three are free (London, Blackfriars, and Westminster), and over these nine-tenths of the traffic is conducted. Of the remaining four bridges, three are of iron,—one being as yet only a foot-bridge; but by far the most magnificent—Waterloo-bridge—is of stone, has level approaches from each side, is most convenient for commercial intercourse, and more accessible for the great mass of population: that a toll should be *imposed* on this bridge, is an absolute disgrace to the municipal and legislative polity of this great country. A little of the spirit displayed (possibly in excess) by Napoleon III. would be a great acquisition if instilled into the slow deliberations of our functionaries here.

To purchase Southwark-bridge, now the property of a private company, would cost the City 300,000*l*. What might be required for the fee simple of Waterloo-bridge deponent knoweth not; but this he knows, that rather than maintain that structure as it is at present—a comparatively blind bridge: the *pons assinorum* of civilized London,—better far would it be to buy it out and out with a parliamentary grant, and present it to the nation.

If Blackfriars-bridge falls some day when the tide rises—not to speak of the certain obstruction sure to take place immediately at Westminster,—then will commercial men and citizens generally be fearfully at fault for a traverse causeway.

"The chariots of Moab are 50,000;" but what were they (holding but one person) to the carriages and cabs, and busses of London; and still how insignificant are all these to the wains, the drays, and the vans of our metropolis? For these our thoroughfares are wofully deficient both across andalong (beside) the river. Every day this is more felt, and the remedy is coming but slowly; the stoppages and locks in the Strand and Fleet-street will enforce redress, which will come only when nothing is stirring but stagnation!

Whilst little matters of inconvenience like these, daily felt, are tolerated, the irritation being of an itching kind, through obstruction of the pores, great projects and colossal schemes are conceived and carried out by individuals. An arm of the sea—the Menai—is bridged; the oceans are united, at least the marriage is on the *tapis*, and thought is sped on electric ducts below the depths of seas. Does a continental capital want water or sewage? English capital is ready, and the faculties of talent equally so for the achievement. Meanwhile the drainage at home thickens in fœculence, pollutes the Thames, and runs to waste; the water, with one exception, is of the worst description, and the avenues of commerce are stinted and taxed!

There is, however, a minister of good, whose attention is turned from Foreign Affairs to the Home Department. A wholesome supply of the pure elements is not less worthy a statesman's care, than offices of international treaty: by attention to such municipal privileges, advantages more lasting are conferred on the community; for by purifying the air from smoke, the water from filth, and by disinfecting and utilizing all metropolitan sewage, comfort and health are universally extended to the existing generation, and an improved constitution to that which is to succeed it.

Reference has been made in these pages to a proposed line of arches central to the river, intended to relieve commercial (and perhaps passenger) traffic; but how this can be effected without restricting and impeding free navigation it is difficult to conceive; or how stations or termini of sufficient scope could find place there might puzzle Mr. Pearson. Most certainly the progress of pile-driving, coffer-damming, &c. &c. must engross half the flood; and as clearly is it evident that foundations for a railway or causeway (whatever be its construction) could be more easily obtained on the margin than the centre of the stream and tide. Moreover, such causeway might wall off tidal docks in the reserved margins, such as the wide-spreading reach between Westminster and Waterloo bridges, and be made tributary to wains and foot-passengers.

This was the place to begin any real public improvement for the benefit of trade, not where it has been begun. One part as finished actually obtrudes a convex wall on the river.

Enough of bridges, it may be said; but we must speak of them as we pass. So to steam up the river, and to look at the obtrusions about Pimlico Pier, is enough to make the stones in the wall speak.

Great public works are too often left to successful individuals, whose own interests engross their care. Battersea-park, notwithstanding the Parliamentary grant, slumbers. The Red House piers, if not stumbling-blocks in the waterway, are standing jokes on the gangway of steamers, where it was observed, "*the piers are up*, and may be *stirring* (according to the natural fate of piers), but where are the iron arches?—are they tarrying for the tin!"

QUONDAM.

CHAPEL, CHICHESTER CATHEDRAL.

WE have at different times illustrated and described Chichester Cathedral. Quite recently we gave an engraving of the "old belfry," and we now add an interior view of the chapel in the north transept, which is at this time undergoing restoration. Until lately the whole of this transept, the most ancient portion of the building, was occupied as a parochial church for the subdeanery: the modern fittings are now entirely removed. It has been said that the portion embraced in our view (separated from the transept by a good oak screen) was originally the Chapter-house, but there is nothing to support this assertion against it. It is not likely that there was any distinct Chapter-house at Chichester: but the vestry, in the opposite transept, was probably used as a Chapter-house. Be this as it may, the chapel we have illustrated is a very graceful specimen of the transition from Norman to Early English.



CHICHESTER CATHEDRAL.—CHAPEL IN NORTH TRANSEPT.

ON THE POLYCHROMY OF THE MIDDLE AGES.*

WALL surfaces were generally of a blue or red tint; blue, when forming a ground for pictorial compositions, and more commonly red when unbroken: large surfaces of any colour were invariably diapered, and generally in a deeper shade of the same colour; but the diapering is sometimes omitted when figures are introduced:† all enriched work was painted in contrasting colours, the surfaces red or green. Upon the monuments on the north side of the choir of Westminster Abbey, a sort of bistre colour is made use of as a counterchange for red; in the panels round the tomb, in the cornices, and in the series of quatrefoils for the display of arms on Valence and Crouchbacks monuments. On Lord Bourchiere's monument beneath the screen of St. Paul's Chapel, green appears in corresponding situations, with blue introduced for relief in hollows, where the object sought was to give depth. Small column shafts or beads were often painted in a spiral curve, or barber's-pole fashion, white and black, white and red, red and black, or red and blue; small fillets were often white, and all bosses, crockets, finials, and prominent edges gilt, and the whole powdered over with star-like flowers or sprigs, gold or black if on a red ground, and generally gold over all other colours. On King Sebert's monument the faces of the pyramidal canopies are more plainly coloured, and the faces of the intervening pinnacles have their pilaster faces gilt, relieved by green in the panels. The octagonal bases of shafts often had their alternate faces painted of different colours, and the various cap and base mouldings picked out and gilded. Strings usually had their plain surfaces and hollows red or green, the bead often gilt; but the concave parts of cornices, when enriched, were often blue. The very fine effect produced by the use of very few colours may be judged by the screen in Edward the Confessor's Chapel: the faces here have a red ground, the soffits blue, and over these universal tints the gilded lace-work of the tracery must have shown to great advantage. The favourite arrangement seems to have been red, green, and gold; but when the series of mouldings requiring to be distinguished by alternate colours were deep, it was often customary to give greater variety by using different shades of the same colours, and which were often placed adjacent to each other: the same means were resorted to, when the very limited number of positive colours, occasionally in the intricacy of Gothic tracery, brought the faces of two members having the same colour into contact with each other.

Diapers were of several kinds: that most commonly met with extends itself over large surfaces in a running pattern often executed in a deeper shade of the ground colour. There is a variety of this kind of diaper that may perhaps

* See p. 515, *ante*.

† So attached were the Middle Age artists to the use of diaper that even works in metal, especially effigies, are engraved all over in similar forms to those used on coloured surfaces. Nothing exhibits their abhorrence of unbroken tints more forcibly than the minute delicacy of their works in mosaic and enamel.

with more propriety be termed arabesque; such is shown in the groined canopy over the tomb of Aveline, the Countess of Lancaster: here we see an entwining pattern of vine leaves and fruit, the fruit and sprigs red and the leaves green: the ground shows a straw colour, perhaps originally gilded. A second form, perhaps better understood by the word "powdering," scatters over the ground a profusion of small sprigs or flowers, generally black or gold: the diapers of a wall sometimes consist of nothing more than the founder's initials, the monogram I. H. C. or like devices, in red, geometrically arranged upon an uncoloured ground, that is, a ground which has no other colour than the prevailing tint of the building.

The plain faces of buttresses and pinnacles and small running bands are often ornamented with a pattern in two colours, sometimes simple and extending itself over the whole surface; or if that be very much prolonged, repeated throughout its length. The prevailing tint for this ornament is white and black, or white with the prevailing ground: it seems to have been the aim of the Gothic artists to avoid as much as possible creating spaces of a single colour, for the smallest mouldings are generally powdered with red, black, or gold sprigs.

The use of diaper is to supply the place of middle tints, the introduction of which destroys the brilliancy and interferes with the keeping of polychromatic painting: a mass of colour of whatever weight or prominence may be enriched and at the same time toned to almost any limit by a judicious use of diaper.

In pictorial compositions a wider range was allowed, and compound and neutral tints will frequently be met with.

As far as can be ascertained, very similar menstrua were used to liquify the pigments employed, both in the Classic and Middle Ages. Painting on plaster was practised at both periods, but it is exceedingly doubtful whether fresco* (properly so called) was used to any extent in Europe prior to its recorded introduction in Italy.

Wax, with the volatile oils and resin, appears to have been the general medium; and perhaps the paintings executed in wax may so far be called encaustic, as that term applies to bringing out the wax, by means of heat, after the painting is done.† A very considerable portion of the remains of mediæval colouring appears to have been executed with turpentine and resin, more particularly those that exhibit, after the lapse of ages, much of their ancient brilliancy, and adhere with tolerable tenacity to the surface painted on. Wax dissolved in gum-water may also have been employed, as gum was much used for a similar purpose (illuminating MSS.) in the Middle Ages. Ancient paintings executed with honey and wax possess a high degree of durability; and this method was much in favour among the Grecian artists, but its use in the Middle Ages is only conjectural.

In the fifteenth century, however, oil seems to have predominated;‡ and about this time came into general estimation among artists. Although scarcely capable of the same fixity of tints as the older compositions, oil has been found to possess many qualities that render it superior in handling, combining more readily with the various pigments, and flowing freely. The modes of preparing oil for colouring, however, appear to have been different to those now in use. Few ancient specimens will be found that have received more than a single coat of paint; whereas, on the modern system, the work must be painted over several times before an even surface or an equal intensity of tint can be produced. These repeated coats are destructive of all nicety and finish.

When any extent of wall surface was proposed to be painted, it was usual to cover the stonework with a thin coat of plaster or whiting, for the purpose of concealing the joints, and affording a better ground: the ground thus gained was, in works of importance, very carefully prepared with size of thin glue, or of gum-arabic, dissolved in water, with the addition of a little dry white lead, or sheep-skin size, to prevent the too great absorption of colour. No variation appears to have been made in this practice, even when oil was intended to be used. The oil paintings on what is termed King Sebert's Monument, in Westminster Abbey, may be mentioned as executed on a thin coat of plaster, although both the assigned antiquity of these subjects, and the probability of their being the production of a native artist, may be doubted. Merimée gives various recipes of a more modern date, for the preparing of grounds for wall-painting: he appears to recommend saturating the cement that forms the ceruse with drying oil and wax, in preference to boiled oil. For gilding, sizes similar to those now or lately in use were adopted, and laid as a second coat over the previous ground. The gilding of Middle-Age works will generally be found to have been performed in a superior manner, and to have stood well.

In appearance, these paintings most nearly resemble flatted work varnished: the colours have in general more force than is usually attained by modern oil—glossy, yet free from glaze, and possessing considerable body. They are not absorbed by wood or stone, nor do they adhere very tenaciously: though easily separable from the ground, they are not liable to crack.

Distemper paintings are very common, and do not differ materially from the appearance of such work in the present day: in buildings of small importance, simple earths dissolved in water, were often the only colouring media applied, and continued to be used in our village churches down to a very recent date.

I shall but allude on the present occasion to one very leading feature in the polychromatic art, viz. the use of coloured glass, which, after all, important as this art is considered, and justly considered, should be looked upon only as carrying out the polychromatic decoration of a building.

In these days, we have the *power* of producing the finest subjects this art is capable of. From the ability of the artists employed, the practical works on the subject serving as so much experience, in the mechanical means, in the knowledge of chemical combination and burning in of colour, we have infinite advantages over the craftsmen of the Middle Ages; and however much may be said of the lost secrets of the art, we have certainly little to envy the architects in their method of proceeding.

But instead of employing these various talents and advantages, what is it that we shall leave to posterity to perpetuate and immortalise our proficiency in art? Skill, science, refinement, not one attribute is wanting to greatness or originality; but the *adaptive principle* is wanting; that principle which identifies a nation with its deeds, art at any era with its productions. We know not our own power; like the first restorers of literature, we spend our strength in imitations, so true, so beautiful, so comprehensive of the spirit of the original, as makes us grieve for the days of men whose attainments were wasted for so trivial an end. It is but to believe that we can impart to our creations the impress of ourselves, and it is done. We need no new inventions: no mind can *create* a *style in art*: he may acquire a *manner*; but style is the invisible and unconscious work of an age and people: a thousand circumstances go to determine the character and development of art at any particular period: it cannot be separated from the people themselves: the whole turn of their mind, their habits of thinking, their religious impressions, their domestic occupations, their public character and political station, all are reflected in it; and it is this that makes art a more valuable, more trustworthy record than aught else besides. It matters not what it operates upon, stone or glass, marble or canvas, Grecian, Gothic, Indian, or Elizabethan,—from any or all of these national art is capable of rearing itself a monument that shall tell its tale to eternity.

In the present day, however, a decided privation seems to mark our people: conscious of our own want of popular individuality, we endeavour to borrow from other times a lustre that may gild our era, though it be only with a reflected light.

On every hand edifices arise not inferior in cost and labour to the most magnificent edifices of the past: a feverish anxiety characterises every department of industry; and our own age, when it shall come to be recorded in the annals of the world, will be remembered as one, when the people were more wealthy and busy, the channels of successful enterprize more broad and widely ramified, than at any other time, and the whole race of mankind were precipitating each other forward in a race, whose goal none knew, and of whose track no vestige is imprinted on the face of time.*

J. WELCHCOORD, Jun.

PROGRESS OF A MASON AT MELBOURNE.

THE following is a copy of a letter received a few weeks ago from Melbourne, the writer of which left England in July '52, and is well known to many of your readers. He is by trade a stonemason, having been connected with public works nearly all his life. He was principal foreman to one of the largest building contractors in London for several years. D.

I believe you will consider I have let many opportunities pass without redeeming my promise, but really I have not, for even now I steal the time when I ought to be at rest. You will, doubtless, ere this, have heard of my being at the diggings, and of my having returned unsuccessful, inasmuch as I got very little gold, but I got experience, which is sometimes even more valuable. I did not stay long—just enough to spend all my money, and then returned to town fit for any sort of work, the second best state that a man can be in when arriving here. I give the preference to the capitalist, but the workman is next best, and in application of my newly-acquired ability I took a job to work granite at 27s. per day, the first that presented itself. This job served me till I got a few acquaintances and a little knowledge of the place, which did not take me more than three weeks, before I had my first job, and since then I have gone on gradually increasing every week. I have just now two government jobs, small ones, and I do the work of the Melbourne Water Company; I have likewise going on a large stone building for one of our principal timber-merchants, and a few other small ones, and I expect soon to have the order to commence the Melbourne and Hobson's Bay Railway, having obtained the first contract on that line. I said to you before leaving that I was tired of being a foreman. I am glad I arrived at this conclusion. Allow me to observe here that there is no fear of going on upon a false footing in this place, for credit is almost unknown; accounts remain only for a week, when they must be paid in cash—wages the same, so that if a man can get along for that time there is no fear for the future. Our work must be done and paid for before we draw our cash, so that there can be no —— in this town. I find a considerable difficulty in going ahead at present, but as every job leaves a surplus, I hope soon to be without trouble or expediency in business. Our greatest difficulties in business are those unknown in England; that is, to get men and materials. I have been over to a dozen quarry-masters within these last ten days, and pressed them to take my orders at any price they pleased, and they have all refused, saying—"they had far more orders than they knew how to supply." When I did succeed in getting one to take them, these were his prices in the quarry:—Rubble, 13s. per one-horse load—pieces that would rough square 7 in. × 6 in. × 5 in.; for pitch-paving, 25s. per ditto; ashlar in the rough, 3 ft. × 1 ft. × 6 in. 3s. per foot run; jambs, 1 ft. 6 in. × 12 in. × 6 in. 4s. per foot;

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* Fresco is the art of painting in size colour upon a fresh plaster ground; the name is derived from the Italians, who call it *dipengere in fresco*, in contradistinction to the *dipengere in secco*.—*Merrimee.*

† In the south aisle of the choir at Westminster, the walls of the recess known as King Sebert's Monument appear to have been painted in wax

‡ There are instances of the use of oil in the *late* part of the fourteenth century, and most of the monuments in the choir of Westminster Abbey are painted entirely in oil. In those cases, however, where it is possible to ascertain the original tints, they appear inferior in brilliancy, and certainly in surface to the other work of the same date. Oil also was used for the pictorial decoration of St. Stephen's Chapel, Westminster, of which we read that Hugh de St. Albans and John Cotton were employed as principal painters on wages of one shilling per day. (See Britton's "Architectural Antiquities.")

* Read at the meeting of the British Archæological Association at Maidstone previously referred to.

heads or sills, 3 ft. long, 3s. 6d. per foot run; 4 feet long, 4s. 6d. ditto; 5 feet, 5s. 6d.; 6 feet, 7s.; 7 feet, 9s.: And on opening an account with them, you have to advance 30*l.* or 40*l.* before they will begin to send in. Cartage from the quarries 12s. to 15s. per one-horse load, they going four and five times per day. I wish I saw you out here with a lot of horse-harness, &c.; certainly, horse feed is high at present, viz. 22s. per bushel, but our horses are very hardy, and don't get many oats. Bricks this week are 15*l.* per 1,000; countess slates, 28*l.* per 1,000; deals, 3s. 4d. per foot run; castings, 75s. per cwt.; English ash pick-handles, 36s. per dozen—the latter articles will always be high priced;—mason's tools for hard stone, 3s. 6d. per lb. Many other things are equally high, but I have not time to enumerate them; in continuation, when I tell you we have very mildly to press our workmen to come and work for us, you will see the difficulty of being an employer in Melbourne at the present time, and that the workmen are at least in a second-rate position. I have advertised for three days in the *Argus*, and although the best wages are offered, only two men have called.

April 7th, 1853, Melbourne.

A second letter from the same writer (dated June 8th) says, his business has increased astonishingly. He now has a quarry of his own; is entering more generally into the building business; has a C. E. for a clerk; the late station-master at King's-cross, who gave up a good situation to go there, is carting stones for him, the station-master having got two horses and carts; and several other late employers on the Great Northern are mentioned as at work for him: he says "the place is quite like King's-cross, and it is difficult to believe that I am on the other side of the globe."

PROVINCIAL NEWS.

St. Leonard's-on-Sea.—Building operations on a large scale are contemplated on the Eversfield estate, the whole of which, comprising about 400 acres, is about to be laid out, by Mr. William J. Gant, architect, for terraces, detached villas, pleasure-grounds, &c. The ground is to be let on long building leases. This project, taken in connection with another lately alluded to in a note on Hastings, points to the probability of the whole of the high grounds at the back of the present populated district being ultimately (though perhaps at a distant period) more or less covered with houses, till at length the united towns of Hastings and St. Leonard's resemble Brighton for extent.

Penzance.—There is a great want of houses here at present, according to a correspondent of the *Cornish Telegraph*.—Bonuses are even paid on the rent, and there are usually two or three applicants whenever a house is to let. Complaint is made of want of enterprise in the local builders, but we suspect the high prices of labour and materials have something to do with it. There are obstacles, too, in the way of building leases, the proprietors of the ground having their own peculiar notions as to the laying of it out, as in villas and other classes of houses besides those really wanted.

Sutton Coldfield.—The corporation have consulted as to the Birmingham proposal for a crystal palace and railway, but have come to the conclusion that the terms of the Birmingham corporation cannot for a moment be listened to. On the contrary, they have resolved to restrict the use of their park, already granted to the people of Birmingham, who, they say, have abused the privilege by tearing up and destroying the young trees and plants, killing the game, &c.

Lytham.—The coins lately deposited in the foundation stone of the New Schools, in course of erection here, have been found, since our recent warning, to have been abstracted. A reward of five pounds has been offered for the apprehension of the offender.

Leeds.—The foundation stone of the new Town Hall has been laid, amidst the general rejoicing of the inhabitants. The site is in Calverley-street, Park-lane, somewhat removed from the centre of the town, but surrounded with good wide streets and roads. The cost of the building alone will be 41,835*l.* The form of structure is a parallelogram of 250 feet by 200. It stands on an elevated platform, and is surrounded by Corinthian columns and pilasters supporting an entablature and attic, altogether about 65 feet in height. The large hall rises out of the centre of the building to a height of nearly 130 feet from the ground. The south or principal façade differs from the rest by having a deeply recessed portico of ten columns, and a flight of twenty-five steps leading up to the same, 135 feet in length, with large pedestals, at the corners and in the centre, for groups of figures or sculpture. There are, besides the front one, separate entrances to the building at each side, and at the north. The great hall, in the centre of the building, will hold 6,000 persons, without any gallery room, except at one end. Beneath the same roof will be concentrated the municipal, police, and other public offices of the town, and law, assize, and magisterial courts. There will be considerable open space all round the building, and a good-sized square at the front of the south side.

Durham.—The Dean and Chapter have resolved to make considerable additions to their school buildings. Three class-rooms are to be built, in communication with the present school-room, and additional dormitories are to be provided for the head-master's house.

Sunderland.—The exterior works of the docks have been let to Messrs. Brown and Co. contractors. The proposed extension is eleven acres. Owing to the scarcity of elm timber, the contractors for that work at the docks are afraid they will be stopped.

Glasgow.—The indications of an increasing and prosperous manufacturing trade, says a local paper, are appearing, at the east end of the town, in the erection of new factories and the extension of old premises. Messrs W. J. Scott and Co. have put up a large pile of brickwork and masonry, on a line with John-street. A large wing is also added at the north side, and a considerable extension is in progress behind, crossing what would be the continuation of Ann-street, if it were carried through to the green, as proposed. Messrs. Scott's new premises are three stories in height, the front to the street being rough ashlar work, and the whole flat-roofed and covered with asphalte. Immediately east from the back part of these works the walls of a very large cotton factory are rapidly rising. Farther on, in same direction, an extensive purchase of ground has been made for a similar work. On the other side of the river, in Little Govan, dye-work premises on a large scale are being put up.

CHURCH-BUILDING NEWS.

Bagthorpe.—The church here is being rebuilt and restored, under the directions of Mr. W. J. Donthorn, by Mr. Peebles, of Dereham. The style is the early stage of Decorated; and all that could be made available of the old structure has been brought into requisition. The restorations have been set on foot by the Rev. Stephen Reed Cattley, the rector of the parish. The oak standards are prepared by Mr. Rattee, at Cambridge, as well as the communion-table and rails, which are of cedar: the pulpit presented by the rector is carved in six compartments, representing the four Evangelists, and scrolls from ancient carvings. The remainder of the sittings are of old cherry-wood, which, with the cedar, has long been prepared by the rector. The roof will soon be raised.

Beyton.—The rebuilding of the church here is progressing. The concrete foundations have been put in, and the walls are being carried up. The style of the old church will be adhered to, and the Norman doorway will be replaced. The east gable of the nave will be carried through the roof, and coped with stone, having a stool and cross on the apex: the east gable of chancel and gable of porch will also have stone copings with moulded foot and saddle stones. The faces of the buttresses are to be filled in with black flints. By the addition of a north aisle an increase of accommodation will be obtained, to the extent of fifty or sixty sittings, mostly free. It is intended to pew with open benches of uniform design, but, according to the *Bury Post*, the requisite funds are wanting. The chief stone was to be laid on Thursday. The works are being executed by Mr. H. Reed, builder, under the direction of Mr. J. Johnson, of Bury, architect.

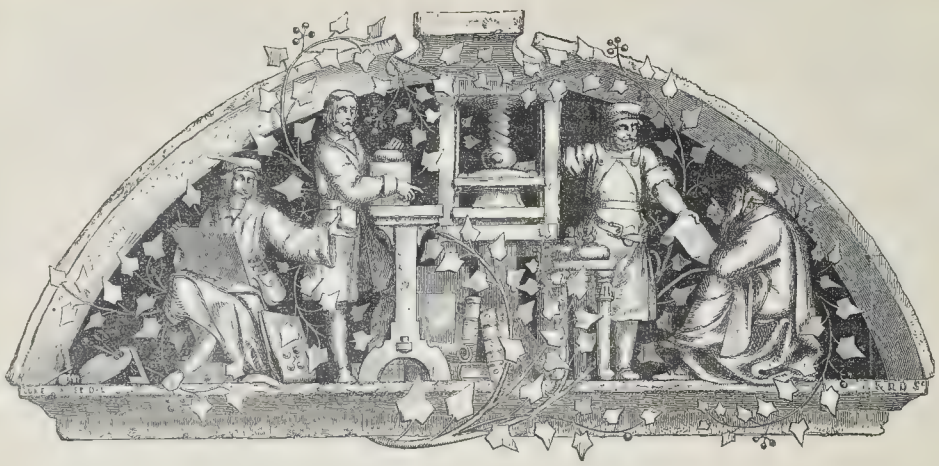
Northwich.—The new Independent Chapel here has just been completed at a total cost of 973*l.* exclusive of the value of old materials (about 300*l.*), but including the boundary-railing, gates, flagging, warming and ventilating, and gas-fittings. The accommodation is for 300 adults and 80 children, with space for galleries which would accommodate 180 adults. The walls are of red brick, with quoins and strings of black brick, and dressings of Runcorn red sandstone. The style is Early Decorated. The building consists of nave and transepts, each transept having two gables, and occupying two bays of the nave. The transepts are of unequal depth, the deeper containing the children's gallery, with vestries, &c. underneath. At one angle of the nave is an octagonal bell-turret, 80 feet in height, crowned with a slated spire and gilt vane. The roofs are open-timbered, ceiled between the rafters, and are of equilateral pitch, the span of the nave roof being 33 feet. The shape and nature of the site presented difficulties: 19 feet of quicksand was found at a depth of 7 feet from the surface; but the architect, instead of sheet piling, commonly used in this locality, has built the walls on a thickness of 4 feet of concrete, bolting them above the footings, and building them throughout with hoop-iron bond, trusting thereby to obtain an equal subsidence of the building, if any takes place: the walls at present show no sign of settlement. Mr. R Brown is the architect, and Mr. Hugh Yates, of Liverpool, the contractor. The joiner's work has been executed by Mr. Edward Hughes, of Liverpool; the staining and glazing by Mr. Cross, of Northwich; the carving by Mr. Rossiter: and the gas-fittings and ironwork by Mr. Skidmore, of Coventry.

Broxted.—A painted window has been erected in Broxted church, in memory of the late wife of the vicar. It consists of three compartments. In the centre is our Saviour knocking at a door: on his right is St. John, with the cup, and on his left the Virgin and Child. The window was executed by Messrs Chance and Co. of Birmingham, and is the third erected during the last few years by the present vicar, Mr. Mason.

East Retford.—The designs, &c. prepared by Mr. Place, architect, for the restoration of the parish church, having been approved of, and tenders advertised for, exertions are being made to collect the money already subscribed, and, if possible, to obtain additional means for the proposed extension of the church.

Cockermouth.—The church is being restored: the tower is completed; and, on Saturday week, the first stone of the spire (which will rise upwards of 90 feet from the tower already constructed), was laid (at the request of the workmen) by Master Robert B. Earée, between six and seven years of age, eldest son of the Rev. W. Earée. The little fellow was wound up on a low square box, about a foot deep, and used for drawing up small stones, and seems to have been totally unconscious of his peril, though rocked to and fro by a pretty strong wind as he rose to the top of the tower, inspecting a jackdaw's nest (it should have been an eagle's *erie*) by the way. We admire the courage of his parents, however, much more than his own.

Edinburgh.—A new garrison chapel, with other buildings, are to be erected on the castle-rock, and to form in fact a component part, and a prominent one, of the castle group, the effect of the whole, it is said, being a main consideration in the design. The present chapel is already being razed for the purpose. The new building will comprise a chaplain's room and a library. Incorporated with it will be the ancient structure recently recovered and restored by aid of the Scottish Society of Antiquaries, and known as St. Margaret's Chapel. The Norman style of architecture has been chosen for the new chapel, and the principal feature of the building externally will be a rectangular tower 65 feet in height—thus rising several feet above the present highest tower in the castle.



FANCY HEAD-PIECE ON DESIGN.

SUGGESTIONS IN DESIGN.*

UNDER the cognomen of "Luke Limner," Mr. John Leighton has already made himself a reputation as a facile and ingenious designer; and in this volume he has put together "nearly 600 hints for workers in metal, wood, ivory, glass, and leather; the potter, the weaver, printer in colours, engraver, decorator, &c." which will afford valuable materials for adaptation and recombination to those who have not the same power, and useful promptings to those who have. The artist wishes it understood that the plates are not copies of existing remains, but rather suggestions in the spirit of the several styles, in which it has been attempted to give the attributes in original designs, avoiding the hackneyed forms so familiar to all. "In the more remote examples, and particularly the Assyrian and ancient Persian, greater freedom has been taken with the remains of Nineveh and Persepolis than the antiquary might approve; but being put forward as memoranda—to aid design more than for servile imitation or direct appropriation,—they suffice their purpose here, serving to represent the type of many rather than the portraits of any."

His Gothic designs are the least successful: not because of the freedom of treatment which, as he says, gives them a German air, but as wanting the true force and character of the style. He finds the origin of Gothic tracery in the interlaced strap-work of the previous styles, but in this he is certainly in error. Gothic tracery grew out of itself, constructionally, and owed nothing to the surface ornamentation of the Saxons or the Normans. The best plates are those of fanciful patterns, floral sprigs—35 and 36, for example,—his borders and his letters. The whole of the designs, with one exception, have been printed from drawings on zinc plates by the artist. The exception is a woodcut, heading the list of plates, which represents "the artist (inventor), engraver (art-workman), printer (producer), and virtuoso (consumer), amid ivy foliage;" and this we give as a specimen of the author's skill.

The book will be found useful by all the classes to whom he addresses it, and will, we hope, prove advantageous to himself.

DRAINAGE OF STEPNEY.—We have some bitter complaints from inhabitants of Stepney of the want of sewers there, and the evil effects which are resulting. They want to know to whom they are to apply for remedy of the evil. We should say to their landlords.

* Including original compositions in all styles, for the use of artists and art-workmen. By Luke Limner. London: David Bogue. 1853.

THE LABOUR MOVEMENT.

THE plasterers in Messrs. Myers's employment at the Wellington Barracks struck work from Saturday last in consequence of their demand of 5s. 6d. a day being refused.

The bricklayers employed by Mr. Jay have obtained the 5s. 6d. for which they struck. At a recent meeting of the workmen, their chairman urged the necessity of carrying on the movement until the other firms gave a similar rate of wages, as a great injustice would be done to Mr. Jay if he had to pay 10 per cent. more in wages than other builders. Thus the men appear to be "pitting" the masters one against another, and playing their own game with them piecemeal.

Mr. Tuffs, at the same meeting, moved a resolution, to the effect that, in order to render permanent the great social benefits which will necessarily arise from an advance of 10 per cent. on their wages, it was expedient to appoint a committee to conduct the movement till a similar advance was secured throughout the metropolis. He said the demand for an advance of their wages, similar to that acceded to by Mr. Jay, would be *next* made on the *five* largest firms, and *then* on others, which he had no doubt would be acceded to, and thus a great social benefit would be secured to them.

The resolution was adopted, and a committee appointed to carry it into effect.

Can the masters afford the 5s. 6d. demanded, or can they not? If they can, why do they resist the just demands of their workmen? If they cannot, do they mean to allow both themselves, their trade, and their workmen, to be permanently injured by a disunion which not only enables the latter to reap an undue immediate advantage, but induces them, and naturally so, to believe what they ask *can* be afforded, and only requires determination to extort what is reluctantly given, and unjustly withheld? The masters ought either to combine at once to accede or to resist, and not, by their supineness and disunion, allow losses, both to men and to masters, to continue to be incurred, such as must be sustained by both in the series of partial strikes now evidently contemplated.

On the subject of strikes, by the way, the *Morning Chronicle* has an article so much in harmony with what we have occasionally said, that we shall here condense a few of its points for behoof of those who think that to succeed in a strike is necessarily "a social benefit."

"It is perfectly reasonable that the operative should share in the increased gains of the capitalist; and there is little danger that, in the long run, wages will fail to bear their ordinary proportion to profits. The silent laws of supply and demand are more equitable than any regulations laid down either by employers or by trades-unions. The labourer is tolerably certain of obtaining whatever his labour is worth in the market; but if he claims more than his due, threatening at the same time to withdraw his services in case of refusal, the capitalist will take the first opportunity of finding some more convenient mode of investment. Many trades have been ruined by the obstinacy of work-people in requiring terms incompatible with the return of a fair profit to the employer. No one disputes the legal right of men to strike for wages, for short hours, or for any other object which they may think convenient or agreeable. But the moral question which arises in such cases is much more complicated, and its solution mainly depends on economical considerations.....In a word, workmen have a right to abstain from their ordinary occupations, but they usually do wrong in exercising it."

On the subject of the rise in price of provisions as a reason for the rise in wages, the writer says: "The experience of the last few years ought to have satisfied the working classes that the implied relation between the rate of wages and the price of necessaries is altogether fallacious. Three years ago, provisions of all kinds were unprecedentedly cheap, and yet wages in the manufacturing districts were rising, rather than falling; and it is somewhat unfair that the workmen should demand an increase of remuneration on the opposite ground to that on which a former advance was based. The dearth of provisions is probably occasioned, in a great degree, by the prosperity of those very classes whom it most immediately affects.....The tariff of prices which has, in some instances, been put forward to justify a demand for increased wages, is irrelevant to the question in dispute; and it is also partial in its statements. If beef and bread are dearer, tea and sugar, and all manufactured commodities, have fallen in price. But it is enough to say that the capitalist never contracted to pay his workmen in a varying currency, made up of the prices of food and other necessaries. The fund from which labour is paid has no tendency to increase with the market price of provisions. And it is to this fund that the working classes must look at last. In a wholesome state of society, they are certain to divide the whole amount amongst themselves; and no strikes, whether peaceable or violent, will procure them any other resource..... The causes which determine the ratio of profits to wages will never be permanently affected by strikes; and empirical attempts to re-adjust the proportion only tend to diminish the aggregate amount, and not to alter the relative shares of the employer and the workman. The fable of the belly and the members will apply to a Stockport cotton-spinner and his factory hands as accurately as it did to the Roman Government and people in the original apologue of Menenius."

THE CRYSTAL PALACE OF 1851.—Mr. F. D. Dighton, the well-known architectural modeller, has just now finished, after great labour, a complete model of the Great Exhibition Building once in Hyde-park. It is made on a scale of 1 inch to 12 feet, and is consequently 12 feet 10 inches long. Nothing is omitted, girders, columns, roofs, gutters, and staircases, and it has all the finish and completeness which characterise Mr. Dighton's works. If not executed for any other purpose, it should be purchased by the Royal Commissioners, and placed in the new Industrial Museum, when formed, as the most perfect record of the building that can be obtained.

PRESERVATION OF WELSH ANTIQUITIES.

I know not if there be an archæological society in Wales, or any other association of men who have a love for and a desire to preserve the crumbling ruins of bygone days which are scattered about in the principality. If there be, or if there be not, I hope the lament of a traveller will be heard by some public-spirited lord of manor or other person, who will put forth a saving arm to stay the wanton destruction that is going on. Constant dropping wears away stone, and constant driving, kicking, and tearing about old walls bring them at last to shapeless ruin.

Being at Llangollen a few days since, I walked round Castel Dinas Bran: when near the ruins I was beset by some idle urchins, whose number at last increased to eight or ten: they followed me about all the while I was there, and amused themselves with clambering about and of course displacing so many stones or breaking away the mortar. If this be done day by day and hour by hour, year after year, as I understand it is done, the old ruin has been, and will continue to be, more rapidly levelled with the ground by mischievous children than by the slow-decaying hand of time.

My proposal, to whomever it may concern, is this,—that the ruins should be enclosed with an open fence, and a person stationed at a gate who shall admit visiters into the *enceinte* on payment of a small sum—say 2d.—each person. This sum would, I think, pay the cost of making and keeping up the enclosure, and give a weekly allowance to some poor person. I by no means suggest there should be a *guide* to Castel Dinas,—a lazy, troublesome, over-paid person, who shall exact sixpence or a shilling from every visiter,—but that there should be a gate-keeper, who shall receive a contribution from visiters for the purpose of preserving it from destruction.

I visited Dolbadern Castle, at Llanberis: no sooner did I appear about that venerable ruin of one of our most ancient round-tower castles than a troop of children beset me, and made a *ruinous scramble* over its walls and *brought down at every step more or less of the materials*. I would suggest that this fine old ruin should be left to the slow destruction of the elements, which will spare it for many centuries to come: let it be railed in and a small charge be made for admission. Carnarvon Castle is thus preserved: every visiter is charged 4d. which may be regarded as a contribution towards the preservation of a piece of antiquity, and not as an extortion made by an idle person.

I hope these few hints will be applied by some intelligent persons, who will take means to prevent the rapid and wanton destruction of these and many other ruins that is now being perpetrated. I. H. E.

GLASS STAINING.

In the series of articles on the condition of the working classes of Edinburgh and Leith, in the *Edinburgh News*, is one on glass staining, which, however, has little relation to the state of trade in Edinburgh, where there is said to be but one establishment, that of Messrs. Ballantine and Allan, who employ about thirty workmen and artists, at wages, to workmen, ranging from one to two guineas a week, and to artists, to as much as five guineas. The article is chiefly devoted to a historical and artistical review of the art of glass staining, for which the editor acknowledges himself indebted to Mr. Ballantine's treatise. We may quote a passage on the mechanical part of the business:—

"The terms *painted* glass and *stained* glass are quite synonymous. A painting on glass—as for example a church window—always consists of a great number of pieces of coloured glass, the different hues of which are made to illuminate an ornamental pattern or a historical subject. These pieces of glass are either symmetrical or irregular: in the case of geometric lines they are symmetrical; in the case of foliage or of the human figure, they are irregular. After being cut to their proper form they are connected to each other by means of small sashes of lead, and are then united into one window by a framework of iron. Two styles of painting on glass deserve our attention. The most ancient style consisted in using no enamel for colouring the glass, but in merely marking the outlines and shadows with a brown opaque pigment upon glass which had been previously coloured in the melting-pot. Notwithstanding its simplicity, this style of painting may produce the most beautiful effects, as the magnificent Gothic windows of our old cathedrals abundantly testify. The second style, in which we are more particularly concerned, belongs to the modern revival. It requires the aid of coloured glass; but it requires at the same time the use of numerous pigments by which the artist may execute on glass a painting analogous to one in oil. The glass-stainer, indeed, has his pallet of vitrifiable pigments—chiefly the oxides of metals—just as the oil-painter has his; but the difference between them is, that the former is dried in a kiln at a temperature nearly sufficient to fuse the glass, and the latter is dried by the rays of the sun at the normal temperature of the atmosphere. In the execution of paintings on glass, particularly Gothic painting, a method of great ingenuity is had recourse to. This mode consists of drawing the outlines on the glass—previously coated with a viscid preparation of oil of turpentine—with oil-colour, and painting over the whole surface with water-colour, which, after it is perfectly dry, has to be removed with a hard paint-brush. Portions of colour of different degrees of thickness are removed by the dexterous use of this brush; and thus we obtain the lights and shadows and the half tints in their proper position. In this way the process of laying on the underground colour of the picture is performed, and after undergoing the firing, it is again retouched or painted over. That kind of glass painting which is executed with coloured pigments fused on its surface is not finished after the first firing. The fusion of the colours gives in general a too feeble tone to the picture. It is thus necessary after the first firing to give additional expression to those parts which are deficient, and to give it a second or even a third firing in the kiln. Sometimes, as in the case of ruby-coloured glass, where the texture is found to be too dense for transmission of the rays of light, the effect is produced by using only a thin stratum of the coloured glass *flashed* to the surface of the denser though more transparent medium. In cases where the ground is of one colour, the glass termed *pot metal*—that is, glass coloured throughout in the pot blue, red, or whatever it may be—is alone necessary. Again, where it is necessary to show a white form through the glass, another kind termed *flashed metal*, or metal thinly coloured in the surface, is adopted. In general a stained window consists of these three great varieties—pot-coloured glass, flashed-coloured glass, and painted or stained glass. The latter has its pigments fused into the mass, as we have seen, by means of heat. We have left ourselves no room to describe the construction of the kiln by which this process is effected; nor can we follow the business into the devious mysteries of its chemical manipulation. The valuable discoveries in chemistry within the present century have placed immense resources at the command of the glass-stainer. The hydro-fluoric acid, for instance, used in biting the surface of glass, would have filled the mind of an ancient artist with wonder and astonishment."

Miscellanea.

Prussian Building Regulations.—A new regulation of the Berlin building police, which came into force here on the 1st of July, forbids any dwelling-room to be built less than 8 feet high, or any subterranean dwelling-room to have its floor less than 1 foot above high-water mark, and the ceiling less than 3 feet above the level of the streets. Rooms in newly-built houses are not to be occupied till nine months after completion of the carcase, and every house is to have a court-yard at least 17 feet square. The president of police has also caused all subterranean dwelling-rooms to be examined by a commission of medical men from the sanitary point of view, and has, according to their reports, forbidden the proprietors of a vast number to let them further for habitation. The medical attests of actual death and its cause, which are here required to be lodged with the police before the undertaker can proceed with a funeral, are now, in addition to the usual statistics with reference to the extent and causes of mortality, being made subservient to investigations into the locality of mortality; the experience of former years in the cholera having shown that certain localities, streets, and even houses, were visited by that scourge in a more virulent and malignant form than others.—*Berlin Correspondent of the Times.*

Stone Tree.—There is in Mexico, says the *Pacific*, a Californian paper, a tree called the *chijol*, a very fine wood, which, according to a writer in the *National Intelligencer* (W. D. Porter), becomes petrified after being cut, in a very few years, whether left in the open air or buried. The wood in a green state is easily worked. It is used in building wharves, forts, &c.

Decimal Currency.—A pamphlet on this subject, by R. R. T. points attention to the circumstance that one of the disadvantages of the present attempt at a decimal coinage is, that it may raise the denomination of part of the currency—a result that would be disastrous to the humble classes of the community. The next step to the introduction of the florin, or one-tenth part of a pound, would probably consist in an adjustment of the copper coinage; and it is difficult, he remarks, in the absence of any explanation or intimation, to see how that could be assimilated to the florin, except by dividing the twenty-four penny pieces now representing the florin, into twenty only—and the practical effect of this would be to raise the price of every article now obtained for a penny by one-fifth; for the selling price of all things of a low value is not only dependent upon the cost, but is to a great extent adapted to the coinage of the country; and "the moment coins of a new value are introduced, prices would be assimilated to them; hence it follows, that what is now obtained for a penny would still require the new or larger coin to purchase; for the difference in actual value would not be sufficient to prevent the new penny becoming, for all practical purposes, the equivalent and representative of the old." There is much practical truth in this, and it is a matter for serious consideration in the change, so desirable in other respects, to a decimal currency. Moreover, is not basing that change on the pound or sovereign somewhat like setting a pyramid on its apex, especially under present circumstances, when the intrinsic value of the sovereign runs so great a risk of change and depreciation? R. R. T. proposes the adoption of the French system, with British names, so far; and he thinks that as the French adopted our penny-postage system, we need not hesitate to adopt a good thing of theirs. He would begin with the cent. about equal to half a farthing, the next being a decime, ten-cent. piece, or penny; the next, a silver Britannia, of ten decimes value; the next, a mark of gold equal to ten Britannias; and finally, a Victoria equal to ten marks. Our new two-shilling pieces would be equal to a quarter mark, and our pound to a quarter Victoria. Thus even our shilling and sixpenny pieces might remain for a time among the rest, and probably our sovereigns and half-sovereigns as well. But is not the proposed system liable to a similar objection with that now being adopted, inasmuch as the ten-cent. piece would then contain ten half-farthings instead of eight, as the penny now does, so that every trifle now sold for a penny to the poorest of all, would then cost two half-farthings more than it now does, since the nominal price of a penny, in the shape of a ten-cent. piece, would probably still be charged. The relation of the penny to the shilling on one hand, and to the Britannia on the other, too, might create temporary confusion. It is very desirable, however, that the British and the continental systems should be assimilated, either as suggested by R. R. T. or otherwise, and that his objection to the present mode of introducing the convenient and excellent decimal system should be well considered. The simple decimal system of counting by tens, we anticipate, would rapidly rise into favour with the people at large, unless there were some unfortunate hitch in its practical working, such as that pointed out.

Archæological Society for Banbury.—An archæological society, with Banbury for its head quarters, is now in course of formation under hopeful auspices.

Woolpit Church, Suffolk.—A lithograph of Woolpit Church, showing the new tower and spire now in progress, from the designs of Mr. R. M. Phipson, architect, has been issued by the rector. The former tower was destroyed by lightning in July 1852. The tower will be 70 feet high and the spire 65 feet, making a total of 135 feet. It is built of rubble, with Bath-stone dressings, the section of the mouldings throughout being of rather an elaborate form. The cost, exclusive of the bells, clock, and lightning-conductor, will be about 1,350*l.* The size of the new tower on plan is precisely similar to the old one, but the height is increased 30 feet. The former spire was of wood covered with lead, and the tower, together with the arch into nave, was (as is the new one) of the Decorated period. In examining the foundations of the old tower, the architect found that they were carried down very little more than a foot from the level of the ground: the new foundations have been laid in concrete nearly 12 feet deep. Before reaching the solid substratum the workmen came to a spring almost in the very centre of the position of the tower. A small cesspool was consequently formed in brickwork, and a 6-inch overflow pipe laid down to a neighbouring brook, to which there is ample fall. The interior of the tower is open to the church, as formerly was the case, the only difference being that the underside of the bell-ringer's floor is now supported by groining instead of being flat, as previously. This church has a highly-enriched south porch, with room above.

RAILWAY MATTERS.—The first sod of the Portsmouth Direct Railway for more rapid communication with the metropolis was laid on Saturday week.——According to "The Shareholders' Key to the London and North-Western Railway," recently published, the total cost of the property of this company has reached the unparalleled sum of 30,303,456*l.* exclusive of 1,556,000*l.* for new branch lines about to be constructed. The statistical tables of cost show an average cost per mile varying from 8,070*l.* for the Aylesbury branch to 63,836*l.* for the Manchester and Birmingham. The London and Birmingham averaged 54,864*l.*, the Liverpool and Manchester, 42,245*l.* Nearly 100 miles of new line are about to be begun, and for which the estimates range in average cost from 8,800*l.* for the Watford and St. Alban's, to 35,300*l.* for the Stourbridge branch.——Four projects of railways in Paris are at this moment submitted to the authorities. One is for a line from the Tuileries to the Barrière de Passy, by the quays; the second is a branch from the Chemin de Ceinture, near Vilette, to the central markets, passing by the Custom-house and the Post-office; the third, for lines on the boulevards, the quays, and the principal streets, for large omnibuses containing between forty and sixty persons, to be drawn by horses; and the last is for a subterranean atmospheric line from the Strasburg Railway station to the Boulevard St. Denis, and thence by the Boulevard de Strasburg, when formed, to the Place du Chatelet. The first project has been already approved in principle. As to the second, it is proposed to establish the railway on arcades and to use locomotives.——The Grand Trunk Railway Company of Canada are said to have made arrangements for the amalgamation of the Grand Trunk Railway, to connect Montreal with Kingston; the Toronto and Guelph; the St. Lawrence and Atlantic; the Grand Trunk of Canada East, to connect Quebec with Trois Pistoles; and the Atlantic and St. Lawrence. Arrangements for incorporating the Richmond and Quebec are also in progress. There will then be under one management—finished, in rapid progress, or about to be begun—no less than 1,112 miles of railway.

ARCHITECTURE IN SYDNEY.—We are pleased to observe, from communications in the *Sydney Herald*, that in the midst of rough utility, a desire for the advantages of beauty begins to manifest itself. A correspondent of the paper just named, under the signature of Viator, has been addressing "the architects of Sydney" on this subject. He points to the picturesque aspect of many of the continental ports, and to some few of our own, as examples of what he would wish Sydney to become. As for London, he remarks, there is no *coup d'œil* such as there is in Paris. "Good architecture," he continues, "tends powerfully to create local attachments. We are in no hurry to fly from the beautiful. They who are constrained to pass their days in Sydney will be more content with their abode, as they who can freely depart will be more likely to remain, should the city hereafter display such glories as those of Naples, than if it should reflect the elegancies of Wapping. In a periodical publication which now lies before me, I find these words:—'We hear on all sides of art manufactures and exhibitions. But in all these things we have begun at the wrong end. It is architecture that has in all times been the nurse of all the other fine arts, and it must be so now. If people are inured to meanness and tawdriness, to deception and falsity, in their greatest works, they are little likely to avoid them in their smallest.' My concurrence in the sentiment thus expressed is the reason of my addressing, gentlemen, to you, the architects of Sydney, this letter. Though you have not the power to plan, lay out, and complete our city, you have yet the ability to educate the public taste. Each of you, when employed professionally to build a church or court-house, or mansion, or the humblest tenement, may suggest ornaments of, perhaps, trifling expense, so that each structure, however isolated at the time of its erection, may form a model for others hereafter to be raised, and constitute at some future time a harmonious portion of a comprehensive whole."

ASPHALTE.—Mr. A. E. L. Bellford, of Holborn, has patented some improvements for rendering bituminous substances applicable to various useful purposes. They are fused in metal cauldrons, and passed through a sieve placed above a pair of rolls, between which the molten substance passes into sheets of any thickness. Two or more sheets may be piled together, and again rolled. They are intended for covering buildings, forming pipes, coating walls, laying pavements, floorings, &c.

SMOKED BRICKS.—In answer to the "new subscriber," who wishes for a preventive for stains in plaster from smoked bricks, I know of nothing more effectual—having often tried it—than to coat the smoked bricks with cowding, simply by mixing it with water, and applying it with a brush, the same as whitewash or colour, one coat being quite sufficient.

J. G.

THE NEW PORTAL OF THE CATHEDRAL OF NOTRE DAME DE PARIS.—Amongst all the beautiful mediæval churches of France, none has, perhaps, suffered more from the ravages of time and the mutilations of men, than the above edifice. The portal was almost completely destroyed. After Messrs. Viollet-le-Duc and others had done their work as able architects, M. Toussaint, the sculptor, had to complete the task. The inferior series of statues, which were entirely wanting, have been replaced, and the empty niches have been filled by the twelve apostles; and in the tympanum, which concludes the ground of the ogival portal, two of those gigantic basso-relievos, of which nothing but the ends remained, were replaced. The first represents the Resurrection of the Dead; the second, the Separation of the Good and the Reproved; the third being the original one, made in the thirteenth century, is nearly in a perfect state. The basso-relievo of the Resurrection, executed by M. Toussaint, possesses that combination of the mediæval and modern art, which is the characteristic of our times. Besides, the two extremities of the old sculptures being extant, M. T. combined them with his new composition.

WAS COLCHESTER CASTLE THE FORTIFIED TEMPLE OF CLAUDIUS?—A lecture on this question was lately delivered by the Rev. Henry Jenkins, B.D. rector of Stanway, Essex, who maintains the affirmative, which has since been controverted by the Rev. E. L. Cutts and others, who adopt the heretofore more orthodox belief that the castle was of Norman foundation. Mr. Jenkins has now published an "Appendix" to his lecture, in which he discusses the arguments of his opponents, and asks one of them to explain how it is that the Normans could possibly build walls at Colchester, on which the Romans laid the stucco. (Did they?) In support of his own views as to its Roman origin, the author adduces those of Fosbroke, Stukeley, and Maj.-gen. Roy. As for the imaginative Stukeley, we suspect the author's argument would have been none the worse for the want of the good old antiquary's support on so doubtful a question. The argument itself is ingenious, and merits something else than mere hard words in meeting it.

READY RECKONERS.—Two little shilling pocket pamphlets, containing tables, one titled "The Timber Merchant's and Builder's Assistant," and the other "The Marble Mason's Assistant," both calculated and prepared by Mr. W. H. Wyeth, who, we believe, is a working man, have been published by Simpkin and Marshall. The former contains "tables showing the proportionate prices timber, battens, and deals, bear to planks, from twelve to forty-nine pounds the 120—12 feet;" the latter, "tables showing the cost per foot superficial of marble slabs, from ½ in. to 6 in. thick, when the price per foot cube is known, calculated from 5s. 6d. to 20s. per foot cube; allowing 3-16ths of an inch for each saw-cut." In the former the Petersburg standard hundred is taken as a leading feature, the goods being sold principally by that standard. The tables appear to be clearly and carefully prepared, and must be useful to all sellers and purchasers of wood or marble. A new edition of Mr. S. Thurlow's "Land Surveyor's Ready Reckoner, or Gentleman's and Farmer's Guide to Land Measure," has also been published by Messrs. Simpkin and Marshall. The price is 2s. and the tables "show at one view the contents of any piece of land from the 80th part of an acre to any number of acres." There are also directions for using Gunter's chain in addition to the means usually employed; and a table of breadths to lengths, and of yards in poles and links.

SANITARY IMPROVEMENT OF DUBLIN.—Mr. John S. Sloane has addressed a letter to the chairman and members of the Sanitary Association, directing attention to a design for markets, lodging-houses, baths, and washhouses, which were exposed by him in the southern gallery of the Great Exhibition building, in the section *partially* appropriated to architectural designs, models, &c. and intended to show what might be done to remove the evil effects which must arise from the congregated impurities existing in the numerous lanes, alleys (with their backyards), ill-constructed markets and slaughter-houses, which at present occupy the space bounded by Great Britain, Henry, Moore, and Denmark streets. "In the first instance," he says, "I propose that the width of that portion of the four boundary streets be increased; that on the site facing Great Britain, Henry, and Moore streets, first-class houses, having spacious shops, be erected; and facing to Denmark-street, model lodging-houses, divided so as to give to each family a sitting-room, two bedrooms, kitchen, scullery, water-closet, &c. on one floor, the different floors to be approached by a common stair. These lodging-houses are calculated to accommodate sixty families. The large circular market-house, capable, with its gallery, of accommodating 100 victuallers, fishmongers, and greengrocers (or nearly double the number at present in the district), is prominently placed, and would form a striking object. Its roof, as designed of iron and glass, would bear on the outer walls and on a great cast-iron column in the centre: into this column all the rain falling on upwards of 30,000 superficial feet could be directed to flush over the floor, which should be formed of some impervious material, with a quick fall from the centre to sewers placed outside the circumference, having a second floor of perforated cast-iron, through the interstices of which the smaller refuse of the market could fall, and be carried off by the rain and a regular flushing of water from a central fountain at certain hours during day and night, to be regulated by a lever from a large public clock, with suitable self-acting machinery. The same description of floor to apply to the *abattoirs* which I have placed on either side of the market-house, and which contain a greater area than the congregated slaughter-houses of the north side of the City." The Dublin markets in every case are surrounded with squalid lanes, and filth reigns where cleanliness should be paramount. To obtain the great desideratum must be a work of time and considerable expense; but by a judicious arrangement of new and improved buildings on the old sites, the increased value of property would amply compensate for the outlay.

SUGGESTIONS FOR A SOUTH-LONDON RAILWAY.—A correspondent, Mr. C. Weetch, proposes the formation of a railway from the Kensington end of the West-London Railway to the Deptford station, through Battersea, Stockwell, Camberwell, Peckham, and New-cross. At Battersea, he remarks, a junction could be made with the South-Western, and at New-cross with the Brighton, while the West-London could be widened so as to connect those places with the Western at Wormwood-scrubs and Harlesdon-green. Such a line, he adds, would give convenient and direct communication between Greenwich and the South, Great, and North-Western Railways; and the local traffic would be very great, if arrangements could be made to convey passengers to and from Paddington, Waterloo-road, and London-bridge, to complete which, he suggests, two branches might be made, one from Earl's-court to the top of Sloane-street, another from Camberwell to Blackfriars or Southwark bridges.

RANSOME'S ARTIFICIAL STONE.—We are requested to say, with reference to an award in a dispute with the district surveyor of Clerkenwell, published lately in our pages (p. 491), that no adverse opinion of the patent stone was expressed by the referees. An inference to the contrary, it is thought, may be drawn by some from the fact of omission of any reference to it in the award, and we are desirous to prevent this, as we believe it to be a very useful material.

TENDERS

For diocesan training-schools, Brighton. Messrs. Habershon, architects:—

Locke and Nesham	£6,404	0	0
Piper	6,056	0	0
Fabian	5,908	0	0
Thompson and Crosswell	5,718	0	0
Cheesman	5,081	0	0
Rowland and Evans	5,044	0	0

For building "The Chalk Farm Tavern," for Messrs. Calvert and Co. Quantities taken out. Mr. E. P'Anson, architect:—

P'Anson	£3,346	0	0
Rider	3,184	0	0
Piper	2,996	0	0
G. Mansfield and Son	2,797	0	0
Wilson	2,697	0	0
Mackenzie	2,370	0	0
G. Young	2,333	0	0

For public baths and washhouses for the borough of Gateshead. Mr. William Hall, engineer.

Contract No. 1, comprising the building of the baths and washhouses generally:—

George Patterson	£2,967	17	3
Edward Spoor	2,980	13	4
Wilson and Gibson	2,773	0	0
John Pearson	2,499	0	0
Thomas Alexander (accepted)	2,376	19	5

Contract No. 2, comprising the supplying, fixing, and erecting of sundry cast-iron pipes, girders, and tanks, wrought-iron roofing, boilers, cocks, taps, &c.:—

Henry Watson (accepted)	£1,316	12	2

Delivered July 30 to the Ware Local Board of Health, for drainage and other works. Mr. Walter Hitch, surveyor to the board:—

Pound and Hudson, London	£2,127	0	0
Abel Dickinson, Ware	1,752	0	0
Samuel Bower, London	1,691	0	0
Coker and Oakes, Swaffham (accepted)	1,596	18	0

For house in Shore-road, Hackney, for Mr. John Cuzner. Mr. T. E. Knightley, architect:—

Coleman	£1,147	0	0
Clever	1,144	10	0
Norris	1,070	0	0
Butler	990	0	0

The Builder.

SATURDAY, SEPTEMBER 3, 1853.

TO show our due appreciation of the continued favour extended to our journal by the public, and at the same time to meet the wants of advertisers, without inconvenience, we intend to give next week a supplement of eight additional pages without charge, and we propose from time to time, as occasion demands, to repeat this step. The number of the classes who expect to be represented and considered in the pages of the *Builder*, the increasing interest, fortunately for themselves, now taken by the public at large in those matters whereof we more especially treat,—such as well-building, fine-building, sanitation, artistical progress, the elevation of the working classes, the provision of decent dwellings for the poor,—and the extensive works now going on all over the country, have at times made the narrowness of our limits felt, and forced us to treat too briefly subjects well entitled to full consideration. We hope now, however, by an occasional supplement, to meet all the demands that may be made upon our space, and otherwise to increase the efficiency of the journal. Without indulging in unseemly self-congratulation, or speaking of higher endeavours, we may take credit for regularly presenting to our readers a mass of condensed information from all parts of the kingdom, which cannot be elsewhere found, and must prove of the greatest service to many.

In our present number we give, in further illustration of the NEW HOUSES OF PARLIAMENT, at Westminster, a view, plan, and section of a portion of that immense building as yet but little known to the public, namely, *St. Stephen's Porch*, with the approach to St. Stephen's Hall, at the end of Westminster Hall, both externally and internally one of the most effective parts of the structure.* The connection with Westminster Hall is marked in the plan. The section shows the window in St. Stephen's Porch as seen from Westminster Hall, looking south: on the right are the steps from the members' private entrance, and on the left a flight of stairs 20 feet wide, leading to St. Stephen's Hall. Ascending the noble flight of steps from Westminster Hall to the Porch, the effect of the lofty arches is exceedingly fine: the height from the pavement of the Porch to the crown of the vault is 65 feet.

The great window, which is about 48 feet high in the centre, and 25 feet wide, will be filled with stained glass before the next meeting of Parliament: the glass is now being executed in the establishment of Mr. Hardman.

Looking externally, it will be seen in our view that the small turrets next the window contain a series of sculptured figures; namely, that on the left hand, and beginning at the top, Edward III. Queen Philippa, St. George, and St. Andrew; and the turret on the right, Henry VII. Elizabeth of York, St. Patrick, and St. Stephen. The four canopied niches forming the termination of the gable contain statues of four monarchs during whose reign this and the adjoining buildings were erected, namely, William Rufus with his face towards Westminster Hall, Edward the Confessor looking towards St. Stephen's Hall and cloisters, William IV. facing west, and Queen Victoria looking to the Victoria Tower. The royal arms, the separate insignia of England, Ireland, and Scotland, badges, and names, form the sculptured adornments of other parts of the façade.

The want of story, by the way, in the sculptured work adorning the Houses of Parliament always seems to us a subject for regret: there is so little to find out. We would have had it present a noble poem in stone which men of all countries could translate.

The Victoria Tower is advancing slowly, but steadily: a height of about 20 feet has been carried up during the present year by Mr. Jay. The top of it is now 180 feet from the ground: and when completed it will be more than 300 feet!

Between this tower and St. Stephen's Porch a range of buildings is being put up to contain offices and committee-rooms for the peers, which will shut out from view the exterior of the House of Lords, now seen in Old Palace-yard, and present a handsome façade to the road, four stories in height, with a clock-tower in the centre 120 feet from the ground. Oriel windows, alternating with windows in recesses, with balconies before them, will give life and variety to this front. It will terminate almost in a point, containing a staircase, next the approach to St. Stephen's Hall (with which it will communicate on the ground-floor), so as not to interfere with the lights.

At the back of this range of buildings, and extending east, will be a large apartment, not yet commenced, 45 feet long and 27 feet wide, to be called the Painted Chamber; for the complete decoration of which, with pictures in fresco, Mr. Herbert, R.A. has received a commission, and he is now, we believe, engaged in preparing for the work.

Hereafter it will be subject of wonder that so vast a building was completed from one plan, and in so short a space of time as the Westminster Palace has occupied. It will, nevertheless, perhaps, be more interesting when a few centuries have played their tricks on it. This impression occurred to us strongly a few days ago, when we happened to find ourselves, at seven o'clock in the morning, thanks to the peculiar arrangement of the Sunday trains on the Great Northern, in the Close at Peterborough, wandering round the majestic old cathedral there, and its interesting accompaniments, where the works of one resolute generation have been added to another—steps in a progress—dissimilar and yet harmonious. To a Norman fabric, massive and grand, of the twelfth century, has been appended the extraordinary western porch, without a precedent, of the thirteenth, with its quaint sculpture and crisp foliage; and under the lofty centre arch of this, the art of two centuries later displays itself in a complete though miniature structure, wholly distinct and yet pleasantly consecutive.

In one part of the Close is seen a Norman gateway; in another, one of the Tudor period, covered with arms and badges; here, in the Cloister Court, is a doorway with a foliaged Semicircular arch beneath the Pointed, the style of one period struggling with the next; and there, terminating the buttresses around the Lady Chapel is a series of large sitting figures, the work of a later date.

In these fine old buildings—the massive handwriting of past generations,—the constructors seem to have worked their earnest hearts and thoughts into the stone to reward the patient search of thoughtful men who come after.

Standing in the cool clear light of the early morning, amidst gardens nicely kept, not a movement in the air, nor a living thing near, the building itself an embodiment of stillness,—the stony stillness of seven centuries,—the effect of the scene was one not easily forgotten, and we thought with Coleridge,—

> "He prayeth best who loveth best."

In the parish church, miserably spoilt inside, there is a large picture by Sir R. K. Porter, and in the market-place there is a quaint little structure of the seventeenth century deserving a glance.

Westminster has led us to Peterborough, but with the clergy it is usually the reverse.

* See pages 562 and 563.

ON FENESTRATION IN ANGLO-CLASSIC ARCHITECTURE.

WINDOWS, whatever their precise or entire object originally, and it is not improbable that it was chiefly the admission of air or wind, are now to let light in, and to look out of,—to lay open to us the beauties of earth and sky, and add to the enchantments of art within what may be culled from the panorama of nature without. Windows may be dispensed with in some buildings, as picture and sculpture galleries, museums, churches, and their place in the walls advantageously supplied by niches, while light is admitted perpendicularly through the ceiling. In places of worship this arrangement, typical of the state of devotion,

> While closed to earth its visible eye,
> Its orb interior fix'd on high,

is peculiarly apposite.

Windows, however, can never be discontinued in domestic buildings. In every order of these, from the palace to the cottage, they are essential to cheerfulness, and to the common and natural enjoyments of life; and in such edifices must always form a primary organ of expression and beauty.

Large windows, like large eyes, are traits of beauty; but the piers which separate them must be large also; and a building, I am persuaded, cannot wear a noble aspect if the pier, in a row of single windows of the usual proportions, be not twice the opening; nor can it with *that* proportion of pier, if, by having the windows narrow, a great number are, notwithstanding, crowded into a limited length; or if the piers be much cut up by wide dressings. The Gothic architecture is under another law in respect of this: in it narrow pierage, or the breaking almost one into another of the windows, is in accordance, or at least does not interfere, with the ruling expression of verticality; but to architecture of antique character and type, broad surface is essential. Fenestral perspective is doubtless as valuable in one style as in another, but in the antique it is thickset arrangement and amplitude of piers rather than of windows that secures richness of effect; and I believe it is utterly impossible to realize a particle of Doric grandeur if the pier be of less proportion than that I have named, and that a much greater would, in buildings intended to realize the utmost of this quality, be necessary. Many an admired building, and some even among the most celebrated of Italy would, I believe, be nobler if the width of pier were increased; and though much depends upon the order employed, or particular expression contemplated, yet I consider that the pier should never, even where Corinthian elegance is aimed at, bear a less proportion to the aperture than that of three to two. In St. Paul's Cathedral the piers, where a series or tier of windows occurs, are to the apertures as five or six to two without any appearance of heaviness.

This being the case, where a great amount of window light is required, some peculiar plan of arrangement must be resorted to, as grouping or concentration; and I think the plan (sometimes adopted) is a good one, to reduce the intermediate piers of such windows to pillars or mullion-piers, with bases and caps, or imposts, and thus leave a greater width of plain wall at the extremities of the building. This treatment gives greater latitude in the placing of the windows, as they need not be considered as one grouped window, but may have their piers of less or greater width, according to the space over which the light is required to be distributed within. The latter being capped and based, and united in composition with the window, may indeed be of almost any width,—sufficiently wide to diffuse the light, or sufficiently narrow to secure substantial masonry as flanking to the whole.

I here speak of the mere bringing together of equal and distinct windows, separated only by pilasters or capped and based piers, instead of common wall, without destroying their separate and independent existence as distinct windows; but a beautiful compound or clustered window, *i.e.* consisting of unequal and subordinate parts, such as the Venetian window or a five-spaced window, will be found to yield more scope for architectural design and the exercise of æsthetic feeling.

Few and wide windows certainly give most repose and dignity, and are not only the best for the exterior, but for the interior also; for whatever amount of light be introduced into a room, the fewer apertures it is conveyed through the better, whether we regard the physical comfort of the occupants or simplicity and beauty of effect. In apartments devoted to business of any kind, as offices, or to mechanical employment, as workrooms, light concentrated as much as possible is generally the best; and it is always the best for reading-rooms and libraries, as well as for the studios of artists and architects. And as to domestic apartments and sitting-rooms, without it, the objections of Lord Bacon to the houses of his day are sure to be felt in our own. We shall be unable to find a comfortable corner in them out of the light and heat in summer, or out of the cold in winter, besides losing the charm of a broad and simple distribution of light in the apartment.

These remarks apply to all kinds of interiors and to all modes of lighting; for wherever there are many openings, breadth of chiaro scuro, the soul of architectural effect, is sacrificed; and all is littleness, confusion, and distraction. How superior would be St. Stephen's, Wallbrook, had its light been admitted entirely through the dome!

And this way of meeting the difficulty has much to recommend it. One noble group of windows gives so much more scope for design—for the legitimate employment of its noblest element, the column, which may be made other use of in windows, and greater use of than hitherto. The column is in its proper place, supporting the lintel of a window, and there is no better division of a large opening into several compartments than a column. The window so treated might be almost any width in proportion to height, and form the background of a complete colonnade in antis, supporting not merely a cornice or water-table, but the superincumbent wall within the plane of which it is placed. For it is not the excessive width of windows that makes them offensive, it is their being undivided on the horizontal line, as proved by the beauty of wide-mullioned Gothic windows. Indeed, so used, the column is analogous to the Gothic mullion; and with the shaft employed in the Norman and Lombardic styles, as well as the Early English and Early Decorated Gothic ere it passed into the mullion, it is *identical;* and, like it, employed under a correct notion of fenestral construction and decoration, it would exhibit a true artistic application, securing indispensable use with much beauty.

With the proportion of window-light contended for by many, and set forth in several late designs as an indispensable requisite, and without some such means as here recommended for its management, there is an end of dignity in architecture. However susceptible of beauty the window may be, plain wall is quite as essential to a noble edifice in the antique style, nay, more so, for, as I remarked before, windows may be dispensed with altogether in some structures. Climate and other circumstances, as the destination of the building, must have influence; but there are principles and laws of proportion which are of universal and unceasing obligation, and without obedience to which noble architecture cannot be had in any climate. The proportion of pier that would fail in dignity in Italy must fail in dignity in England; and therefore if we have more or larger windows, generally speaking, than they have or had there, we must be content with a less noble if not a mean architecture.

But are not the requirements of climate mistaken, I would ask? Is not a moderate proportion of window openings as suitable for a cold climate as for a warm one, although for a different reason? If not, we ought to have double houses, with one-half for summer and the other for winter occupation; because even in hyperborean climates we sometimes have oppressively hot weather of several weeks' continuance. I think the same mode of building which contributes to coolness in Italy contributes also to warmth in England,—certainly to the very desirable appearance of comfort. The quantum of light, too, that would in general cases be insufficient, may be abundant for an apartment that is seldom or never used in the day-time,—in houses where the several rooms have each their specific destination. Less light is surely required for a ball-room than for a breakfast or morning room. Nor is any extraordinary degree of light required for mere drawing-rooms, where conversation is the only employment engaged in. A friend of the writer makes the observation that ladies whose charms show best by candle-light do not care to seat themselves near a window unless it be with their back to it, but rather manœuvre for some more obscure position. Beyond a certain point cheerfulness is not increased in an apartment in proportion to increase of light, and a moderately lighted room may be far more cheerful than one which is the contrary, cheerfulness depending so much upon *ensemble*. I must differ on the subject of fenestration from Mr. Cockerell, when he says that the fronts of houses in narrow streets might be nearly all window. It is in such situations, I consider, that an immoderate proportion of window surface becomes particularly objectionable, because owing to little distance between the houses, the inmates would be fully exposed to the observance of their opposite neighbours; domestic privacy would be broken in upon, and from less obstruction being presented to noise, quiet also.

The rule given by some writers for determining the quantity of window-opening required for well lighting a room is absurd, inasmuch as they take no account of a variety of circumstances that must influence the result,—as, for instance, situation and aspect; whether the window face towards the open country or else a spacious square in town, or towards a comparatively narrow street; and whether the aspect be north or south. Something depends on the position of windows as regards the room, that is, whether they are on the shorter or longer sides of it.

Not only is a certain width of pier necessary, but a certain proportion of space between each tier of windows, crowded fenestration in a vertical direction being as fatal to repose and nobleness, as it is in a horizontal one; and I think if we occupied such space by thickness of floor and ceiling as would prevent transmission of sound from story to story, and serve other necessary purposes, as ventilation, &c. it would go far towards a sufficient separation of the windows in a vertical line. The proportion of these dividing spaces to each other, as well as the relation of window heights, should also be an object of some attention.

And not only superficial quantity of wall is requisite, but thickness of it expressed by depth of reveals, which should be instrumental in giving power or beauty to the composition. The grouping of windows, it should be observed, or otherwise collecting things of a kind into one place, does not of itself produce breadth. Breadth is unity of effect, where no part obtrudes and disturbs, but all is swallowed up in one grand result. One broad equal mass of light on a flat wall, with one broad equal mass of shade, is not breadth either in architecture or painting; it is only emptiness—monotony. If such were all the provision requisite for light and shade, painting, and indeed architecture, could give it by local colour. The power and beauty of light and shade consist in gradation,* to which depth erroneously spoken of by some writers as a distinct quality, mainly contributes, and this depth we are to get by the relative disposition of the necessary planes and masses of a building, by the projection and recession of the parts.

For the means of producing this quality, however, we are not to look alone to depth of window recesses, or to their architrave jambs and cornices, however varied in size and projection: porches, porticoes, and other of the greater projections and recesses should be arranged with an eye to breadth and gradation; and to full power of light and shade such projections are essential. An architectural designer should know the general principles of composition and chiaro-scuro, that he may embody them as far as practicable in architecture. As in a picture so in a building, there should be no two lights or shadows of equal importance; and therefore to make provision for unequal shadows and lights should be an aim of the architect in the distribution of the masses and planes of his edifice.*

S. H.

* The perfection of this quality is only obtained on cylindrical and spherical surfaces. On such forms there is one mass of light and one mass of shade harmoniously blending, and producing light, half light, shadow, and reflection, and yielding the finest possible gradation, and highest beauty of chiaro-scuro. Hence the beauty of the column, and the æsthetic superiority of stylar over astylar or buttressed edifices. On the column this effect is very beautifully developed; but as the cylindrical surface must receive a plane of rays at the same angle, it is inferior in this quality to the spherical, in which it is more concentrated. It is on the dome that breadth of light and shade may be considered as perfectly illustrated. On no other feature are the angles of incidence of the rays so infinitely varied. When the sun is above the horizon, a high light, the highest possible, must always be received on some point of its surface.

THE ANCIENT ARMOUR IN THE TOWER AND PROPOSED NATIONAL GALLERY.

THE Select Committee to inquire into the management of the National Gallery having in their report recommended that the question of combining the various artistic and archæological collections in the British Museum with the National Gallery, be referred to a Royal Commission, and there being great probability that Government will adopt that report, and that such commission will speedily issue,† I beg to recall your attention to my suggestion respecting the removal of the collection of ancient armour in the Tower of London to the building in contemplation.

Having already sufficiently exposed the utter want of judgment, taste, and discretion displayed by the person or persons to whom the conservation and improvement of that valuable collection have been unfortunately entrusted, I will, notwithstanding several other flagrant instances which have recently come to my knowledge, confine myself on this occasion to pointing out, through the medium of your columns, the arrangement which, in my humble opinion, would be most beneficial to art and to archæology, should such removal be decided upon. I should be exceedingly sorry to see the old Tower of London stripped of all relics of the "pride, pomp, and circumstance" of ancient warfare, and therefore suggest,—1. That such removal should not be a wholesale one; but that competent persons should be employed to select from the Tower Armoury the choicest and most instructive specimens of ancient armour and weapons (with the exception of fire-arms) for chronological arrangement, in such portion of the new National Gallery as might be allotted to that class of antiquities, leaving in the Tower all duplicates and inferior or ordinary suits, weapons, and articles of local interest,‡ which would of themselves form an exhibition sufficiently attractive to mere holiday visitors, and characteristically decorative of the walls of that venerable fortress. 2. That as specially connected with the Ordnance Office, an equally choice collection should be made of all the fire-arms and pieces of artillery, from the earliest specimen of the hand-gun, or cannon, to the latest improvement of the rifle or the howitzer; and that such collection, also chronologically arranged, and with a printed description attached to each object, should remain at the Tower, illustrating the progress of the art of gunnery from its first invention to the present day; while in turn the new National Gallery should only receive from the Tower any duplicates of the more ornamental specimens of that particular arm which may at present exist in it. By this "division of the spoil," the general public, the antiquary, the painter, the sculptor, or the student of ancient military costume for any purpose, would find ample and magnificent materials for copy or examination in an accessible and agreeable situation, while the working gunsmith or curious inquirer into the mechanical construction of the old "crakkys of war," having a special object in view, would be amply compensated for the trouble of a journey through the Minories, or a struggle down Thames-street, by the inspection of the most complete series of fire-arms that could be got together in this country. From time to time, as occasion might present itself, the collection at the New National Gallery would of course increase its store of match and wheel locks, and there could be no

* To be continued.

† Vide an excellent article on the subject in the *Times* of Wednesday, Aug. 24, 1853

‡ Such as the heading axes, collar of torture, cravat, thumbscrews, bilboa, &c. &c. Nor would I for worlds interfere with "the equestrian figure of Queen Elizabeth" or "the Norman crusader."

objection to send to the Tower any piece of armour that might hereafter turn up of which the national collection possessed a satisfactory specimen. But the great point which would be obtained by such an arrangement would be the termination of the present capricious and injudicious management by mere *ex officio* guardians of a truly valuable and splendid collection, and the insurance to the public of competent and responsible directors, who would be generally acknowledged as authorities and could be applied to for particular information. A.

SOUTHERN ITALY AND NAPLES.*

THIS long-wished-for book has at length appeared; and now the "grand tour" can be made with "Murray" all the way. Only those who have proceeded beyond Albano can tell how bereaved the traveller has hitherto felt at there parting company with his faithful companion; for southward, till the appearance of this book, all has depended on precarious information and guide-books published in foreign states. The fidelity and intelligence with which the *latter* are compiled, need no comment. Mr. Blewitt in the present work has avoided, with admirable tact and judgment, all irritating topics, both political and religious, and has given to the travelling world exactly what the title indicates. Still we are not without drawing at times some very different pictures to his, although his descriptions are careful and accurate. We think, for instance, that while he describes most of the churches in Naples, with their monuments, the traveller will be disappointed, because he has omitted to say that many of them are placed in the dirty streets of the old town, and are neglected, and that the monuments are in decay. The book commences with a store of information useful to the traveller, including a concise essay on ancient architecture and art; and we are soon *en route*. We cannot but protest, however, against the bit of information on posting, that "the number of persons in the vehicle in every case decides the number of horses;" for in our own, under the plea of there having been some rain, we were plundered fearfully, post after post. It may be true, as Mr. Blewitt says, that their infractions are "punishable by law;" but who can fancy an English traveller waiting at a Neapolitan post station,—Fondi, for instance,—for legal redress! We could not wish our worst enemy so terrible a calamity. By the way, the measurements of distance and the acreage in the description of the Pontine Marshes, do not correspond, and leave a vague notion of their extent on the reader's mind. Arrived at Naples, the "Handbook" omits nothing; but it has, perhaps, a slightly too kind leaning. The Villa Reale is intended to be described with sober integrity; but it is still too favourably mentioned. If we represent it to ourselves as covering about the space of the northern avenue of St. James's-park from the Duke of York's Column to about half way up Constitution-hill, and without its fine timber, we have a fair idea of the extent of this only park or promenade in Naples. At the same time that its fine situation must be admitted, it should be remembered that the trees are but shrubby, close enough for shade, but not very striking in appearance. The higher grounds and places above Naples are indeed charming, and none more so than the church and appurtenances of S. Martino, its marbles, works of art and decorations, and above all, the view from the Belvedere of the cloisters. This latter is never to be forgotten; but, alas! we must say one thing that Mr. Blewitt had not the hard-heartedness to print at the end of his most inviting description; namely, that ladies are not admitted. This should be remembered: it is a toilsome journey up; and for ladies to be left outside to the care of the valet de place and the Swiss soldiers, is not altogether agreeable. The description of St. Gennaro (the St. Januarius of Lady Morgan and the Countess of Blessington) is as complete as the most curious tourist could desire, not even omitting, and with gravity and temper, the periodical "liquefaction." The archæologist and architect would, however, have some remark on the manner in which the noblest monuments of antiquity have been ruthlessly plundered of their rich materials to adorn or build Christian temples; and also a stern rebuke for the ill use made of them. The Hand-book says, "The interior (the cathedral in which the chapel of S. Gennaro is) consists of a nave and two side aisles, separated by pilasters, to which are affixed the ancient columns which were taken from the temples above mentioned: until lately they were incrusted with stucco, with the strange idea of concealing all relics of profane art." The fact is that these columns, stolen from many sources, are of various diameters and lengths, and that they are placed against the pilasters with a total disregard of the rules of art, a thicker column on a thinner, because the length suited, and the eye is coaxed into the deception by a vulgar and coarsely-executed capital and base of soft white marble. It is impossible, however, for any author of a hand-book to comment on all he describes if he desire to keep his itinerary in reasonable limits.

The Campo Santo, with the burial in pits, is freely described in its notorious and disgusting details; but we must, with all their faults, acquit the people of part of what Mr. Blewitt says,—namely, "that the bodies are brought by their relatives, or by the hospital servants." This is not so, as the funeral procession terminates at the church. So far the body is accompanied by friends, and at the termination of the religious service it is left: in the evening it is removed by officials to the cemetery. All this is now passing away, and the French and English systems of burial are prevailing. The Campo Santo Nuovo is fast rivalling Père la Chaise, and our best cemeteries: it is out of the town, and an allotted space is assigned to each parish and *confraternità*, on which are erected a chapel, mausoleums, and sarchopagi, or graves dug, according as caprice or affection may desire. The architectural development on the whole is tolerably satisfactory and pleasing, although, of course, a Cockney taste will here and there prevail. It is to be regretted that such inferior and perishable materials are used in the erections as are seen there. We enter into these details because this pleasing improvement in Naples is rather coldly dismissed in the book before us. The excursions from Naples are well described, and may be safely depended on, so that the tourist now has a familiar friend where hitherto such has been most wanted. Where the wonders of nature display themselves in various and astonishing forms, it is safe to encourage *all* tourists to an effort; but, probably, some will be led to deny what is said of the expedition to Pæstum,—"This interesting excursion is calculated to afford the highest gratification to every class of travellers." To the intellectual, the archæologist, and the lover of ancient history and art, there is no more gratifying expedition; but on the part of the mere pleasure-seeker, we doubt if the expense and troublesomeness of the journey would not lead to unworthy comments on these most interesting ruins.

The account of Pompeii is very full and valuable. A portion of the author's introductory remarks, on *Domestic Architecture* as exemplified there, will interest our readers, and serve as an example of his style:—

"If the eruption which overwhelmed Pompeii had not been preceded by two destructive earthquakes, we should have found it a more perfect example of a Roman city of the third class. But these earthquakes must have effected almost as extensive changes in its external features as those which were produced in the London of the middle ages by the Great Fire. Hence we find in every quarter of the city marks of hasty renovation and repair, generally with the commonest materials. Hence it is that so many of the larger buildings exhibit a monotonous uniformity, that there are so few of an archaic character, and that the decorations retain so much brightness of colour. The private houses, with few exceptions, are small and low, deficient in everything which an Englishman understands by the words *comfort* and *home*; and displaying neither magnificence of outline nor effect in elevation. Only one has been discovered with a portico, and that may be more appropriately described as an ornamental doorway. Even the villa of Diomedes has no better entrance than a mere porch formed by a column on each side. The domestic architecture, in short, is entirely that of a people accustomed to pass the greater portion of their day in the open air. As all the principal houses are on one plan, we shall avoid repetition in our notices of the different buildings, by giving in this place a brief description of the arrangement of an interior, which will serve as a type of the whole. The ground-floor of the larger houses, like that of the modern palaces of Naples, was generally occupied by shops, which are proved by numerous inscriptions to have been an important source of profit to the owner; and we have a curious illustration of the commercial character of the city in the fact that some of the richest mansions had their private shops communicating with the interior, in which the proprietor evidently sold the agricultural produce of his farms. These shops were always open to the streets, like those we see in the older quarters of Italian towns at the present day. Where there were no shops, the external walls of the ground-floor were always blank, stuccoed, and painted, often with the brightest colours. The upper floor alone had windows, and very few houses had a third floor. The internal arrangement varied of course according to the rank and circumstances of the occupant, but, as a general rule, all houses of the first and second class may be said to have been divided into two parts, in accordance with the constitution of ancient Rome and the double life of her citizens,—the first being public, and the second private. 1. The public part, being intended for the reception of the clients of a patrician, comprised several suites of apartments. On the side next the street there was generally an open space called the *area*, surrounded either wholly or in part by a *portico*. Within this portico was the porch, or *prothyrum*, and the *vestibule*, containing one or more rooms used as waiting-rooms or as the porter's lodge. The vestibule opened on the hall, or *atrium*, the principal apartment of this division, where the proprietor gave audience to his clients. It was always a large room, covered with a flat roof open in the centre, and with a cistern called the *impluvium* in the floor to catch the rain which descended through the aperture. The walls and roof were often decorated with great splendour, and the pavement was always of marble or mosaics. Beyond this there was occasionally a small court, or *cavædium*; but as it is frequently wanting, the cavædium and the atrium have been supposed by some to be identical. Open to the atrium was a chamber called the *tablinum*, supposed to have been a depository for family records and public documents, and in some of the larger houses to have served also as a dining-room. At the sides were smaller apartments called *alæ*, and frequently rooms for the reception of strangers, called *hospitia*. 2. The communication between the public part and the private was effected by corridors or passages called *fauces*, and sometimes by the tablinum also. On entering the private division there was a spacious court called the *peristyle*, entirely open to the air in the middle, but surrounded by a covered *colonnade* supported by columns, which answered the double purpose of a passage between the different apartments, and of a sheltered promenade in wet weather. The centre of the floor was usually a garden of shrubs and flowers, decorated with statues and fountains. One of the rooms entered from the peristyle was the dining room, or *triclinium*, so called from the broad seats which projected from the wall and surrounded the table on three sides and enabled the luxurious Romans to recline on couches at their meals. The wealth and magnificence of the owner was generally lavished on the decorations and furniture of this apartment, although it was never very spacious, the largest yet discovered being only 20 feet square. Next were the sitting-rooms, or *œci*, noble saloons supported by columns and frequently opening on the garden. In these the ladies of the Pompeian families passed their time, and therefore we need not add that they were richly decorated. Another large room was the parlour, or *exedra*, supposed to be a reception-room for the visitors of the family. The library, or *bibliotheca*, was generally a small apartment, as little space was required for the papyrus rolls. The picture-gallery, or *pinacotheca*, also opened on the peristyle. The baths were usually in one angle, as was also the *lararium*, or place for the household gods. The bed-rooms, or *cubicula*, which were extremely small and inconvenient, were arranged together in two divisions: the first comprising those for the men, called the *andronitis*, was always separated from that of the females, which was called the *gynæconitis* or *gynæceum*. In some of the larger mansions the andronitis appears to have been situated on one side of the atrium in the public division. In others, as in the house of Sallust, the female apartments occupy a distinct quarter of the mansion, called the *venereum*, and corresponding in many particulars to the harem of the East. It had there its separate court, portico, peristyle, and triclinium, a separate stove, water-closet, and staircase leading to the terrace above, a flower-garden and fountain in the centre of

* "Hand-book for Travellers in Southern Italy," &c. By Octavian Blewitt. London: John Murray. 1853.

the court, and the bed-rooms on one side, protected by a lodge for a slave whose duty it was to prevent intrusion. The second floor appears to have been occupied as store-rooms and as the apartments for servants. Many of these rooms had windows, some of which were evidently glazed. The roof was flat, and was converted into a terrace, planted with vines and flowers, so as to form a shady promenade, or *pergula*. All these upper parts were generally built of wood, which, with the flat roofs, affording a regular lodgment for the heated ashes of the eruption, will at once explain the reason why scarcely any trace of them has been preserved. In the rear of the mansion was an open space or flower-garden, called the *xystus*, which was usually planted with shrubs and flowers, decorated with fountains and statues, and sometimes furnished with a summer-house, containing a stone triclinium, a table, and a fountain, and covered with a trellis for vines or creeping plants. None of the houses have any vestige of a chimney, although coals have been found in apartments both of Pompeii and Herculaneum: we may presume, however, that the stoves were generally heated with wood or charcoal, and were placed in the open spaces of the atria and peristyles. In some houses the arrangement must have been more complicated, for small tubes have been found which were evidently used to carry off the products of combustion. It is unnecessary to describe the arrangement of the smaller houses, since they present the principal features of the larger ones on a smaller scale, and therefore explain themselves. We may remark, however, as a curious fact, that no houses have yet been discovered which we can regard as the dwellings of the poor, and it remains to be proved by future excavations whether the lower orders were located in a separate quarter of the city, or whether Pompeii was really free from any pauper population. Stables and coachhouses are also wanting, even in the larger mansions and villas, the only apartments at all approaching to the character of stables being three or four rooms in the barracks for the troops, and a small chamber in the baker's house in which were found the bones of an ass, which was used, as we know, from a bas-relief, to work his corn-mill. Even the inns form no exception to this remark, for the skeletons of horses which were found in them were lying in the yards, and not in any apartment to which the term stable could be applied. Another deficiency is the absence of anything in the nature of a hospital, although the instruments in the Museum prove that surgery had attained a high degree of perfection in the city: this negative evidence confirms the impression that the sufferings of humanity were little cared for until Christianity had taught mankind that mercy is inseparable from civilization."

We do not hesitate, after a careful examination of the details of this Hand-book, to recommend it to all travellers as a safe and sound guide to the southern part of the Italian peninsula: it is creditable alike to Mr. Blewitt's taste, his learning, and his industry.

ARRANGEMENT OF FIRE-PLACES—CONSUMPTION OF SMOKE.

As the Act of Parliament for the prevention of smoke is being extended to the metropolis, great hopes are entertained that it may be applied to the other large cities of this country, and thereby tend to diminish the nuisance under which they have all laboured, more or less. But as the proportion of furnaces and large fires is small, compared with the fires in daily use in dwellings, it behoves all those who feel interested in the matter, to devise some method by which even the smoke from our house grates may be at least lessened in quantity, if not entirely removed.

My attention was directed a few months since to an octavo pamphlet, consisting of a few pages, printed for private circulation in 1818, entitled, "On the Cause, Cure, and Prevention of smoky Chimneys, in new and old Buildings, Ships, &c.: by J. Gregson, Surveyor;" and as I found that it was devoted to the object comprised in the Act of Parliament above referred to, I made the following extracts, hoping that you will consider them worthy of the attention of your readers, and of fire-grate manufacturers. Perhaps some of your older correspondents and readers could inform us how these grates acted, and perhaps state the reason of their want of success or their failure.

Having lately seen the principle in use for boiler fires, I am inclined (theoretically) to consider it would answer if carried out according to the illustration annexed, which has also been taken from Mr. Gregson's work, and if others should be of a contrary opinion, I am sure that the observations elicited would be of great value towards effecting the objects. When arrived at, the discoverer should follow the noble example set by Dr. Arnott, in making it a free gift to the public.

W. P.

DESCRIPTION.

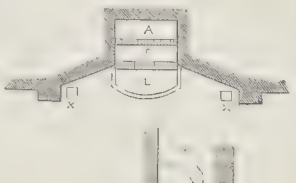
"The fire being made in the grate L, a very strong heat must pass through the aperture at the bottom of D, while the smoke rises and passes over D through the apertures M and N; it then descends through the flue C, where mixing with the heat of the fire, and being inflamed, the united drafts pass into the chimney A through the aperture B.

Two advantages are by these means attained, viz. the *consuming* of smoke and the *saving* of *fuel*; because every particle thrown upon the fire must gradually come into the greatest heat, and there be consumed before it can pass into the ash-hole, whilst the back D always remains cool.

By lowering the sliding plate E, and contracting the aperture R, the register F opens by the action of the lever G; it is then little more than a common grate: this movement may be made to cool the room at pleasure, or at the first lighting of the fire: the register may also be opened to clear the flue if required.

The application of the patent invention to the large fires, &c. of steam-engines, breweries, and wherever a large flaming fire with a regular heat is required, may be seen explained at large in the *Journal of Arts and Sciences* for July 1817, edited at the Royal Institution of Great Britain, wherein the consuming of smoke, and a saving of 25 per cent. in wear and tear and in fuel are fully demonstrated." "Caveat entered for patent chimneys and grates, November 1814."

It is also recommended to place a pipe from the ceiling of the room into the side of the chimney of an upper room, as an efficient means of ventilation;—this in 1818!





REFERENCE.

A. Chimney.
B. The only aperture into it.
C. Descending flue.
D. Back of fire-grate, with an aperture at the bottom, the width of the grate and about 1½ inch deep.
E. A sliding plate or contractor.
F. A common register.
G. A lever attached to E for opening F.
H. A door to take out ashes, dust, &c.
K. A coal-box under the grate L.
L. Fire-grate with solid bottom.
M N. Apertures for the smoke to pass into C.
X. Apertures at side of opening for admission of fresh air.

OMNIBUS RAILWAY.—The Paris *Moniteur* states that the Minister of Public Works has just authorised the trial at Paris of a new system of railway, destined to receive omnibuses drawn by horses. The experiment will be tried between the Place de la Concorde and the Barriere de Passy, by the Cours la Reine and the Quai de Billy. The price of places in these new omnibuses will be 15 centimes inside, and 10 centimes outside. The rails, as in the omnibus tracks at New York and elsewhere in the United States of America, will be formed so as not to interfere with cross traffic.

CHURCH-BUILDING NEWS.

Newton, Isle of Ely.—This church was re-opened for divine service on 19th ult. The nave and south aisle have been re-roofed, and the whole of the old pewing replaced by new, partly open. The south porch has been restored, and a new pulpit and prayer-desk have also been added. The whole of the work has been executed by Mr. R. W. Battenham, under the direction of Mr. Wm. Adams, of Wisbech, architect.

Hastings.—Tenders have been received for the erection of the proposed Fishermen's Church, to be built near the East Wall. The estimate of the surveyor (Mr. W. J. Gant) was 550*l.*; and the following tenders were sent in:—Winter and Son, 749*l.*; James Sinden, 591*l.* 15s.; John Howell, 585*l.* 5s.; Knight and Pattenden, 568*l.*; Charles Young, 534*l.*; Pickerden and G. C. Jones, 529*l.*; James Langridge, 497*l.* The accepted tender was that of Messrs. Pickerden and Jones. The church is to be 53 feet long, 33 feet wide, and 20 feet high to the eaves. It is to be built of Kentish rag (blue stone), in irregular courses, with sandstone dressings, and slated roof. The length of the building will run east and west, and on either side will be four lancet windows, while at each end will be a three-light window, the latter glazed with Hartley's patent ornamented diamond glass. The seats will accommodate about 290. The interior of the roof will be open, with stained timber.

Wells.—The restorations in the interior of the cathedral are drawing to a close, but nothing has been done towards the repair or restoration of the sculptures in the west front and north-west tower. Many of the larger statues are in so insecure a state as to render it extremely dangerous for persons attending the services of the church to pass anywhere near the west front or north-west tower. Three or four years ago, as our readers may remember, one of the largest figures (King Edward the Elder) fell from its niche on the spot where the sheriff's coach had been standing a few minutes before, waiting for her Majesty's judges of assize, who were attending Divine service in the church. This figure has been restored by Mr. Richardson, of London, at the expense of Mr. J. H. Markland, of Bath; and the effect of this restoration has been to make more manifest the mutilations and decay of many of the other statues, as well as to show the possibility of restoring or repairing them.

Worcester.—The Wesleyan chapel in Pump-street has been re-opened, after undergoing considerable repairs and alterations. The seats have been stained and varnished, the walls coloured, the windows frosted, and the pillars supporting the galleries bronzed. The east wall has been decorated, its arcade work, with medallion and scroll mouldings, being coloured and gilt.

Dudley.—Plans have been prepared, we understand, by a London architect, for a new church, two schools, some almshouses, and a hospital, to be erected in this town by Lord Ward. The hospital is much needed.

Chippenham.—A new district church is about to be erected in the immediate neighbourhood of the Chippenham railway station, in the parish of Langley Burrell, and approximating to the town of Chippenham. It is to contain 800 sittings, two-thirds free. The cost of erection is estimated at 4,000*l.* exclusive of site.

Cirencester Church.—One of the unsightly appendages to this ancient fabric, known as the north gallery, is now removed, and the chapel dedicated to the Holy Trinity, built on to and parallel with the north aisle, made part of the body of the church. The light clustered pillars which support the arches that separate the chapel from the aisle are connected by a stone screen, composed of slender shafts and surmounted by Gothic tracery, originally erected to mark the division of the principal and subordinate parts of the edifice. This screen has been latterly obscured by projection of a wooden incumbrance now taken away. The stone floor of the chapel, which is inlaid with some ancient and curious brasses, has been taken up, and the area boarded and filled with carved open sittings.

Forest of Dean.—On 12th ult. the Bishop of Gloucester and Bristol consecrated a chapel of

ease at Tutshill, in the parish of Tidenham. The chapel is built from the designs of Mr. H. Woodyer, of Guildford. The chancel was erected as a memorial to the Rev. H. Scudamore Burr, by his family, and the stained windows in the chancel, executed by Mr. Wailes, were given as memorials by his friends and parishioners.

PROVINCIAL NEWS.

Horsmonden, Kent.—Some schools erected here, in memory of Mrs. Henry Morland, by her nephews, Sir John Jas. Smith, bart. and the Rev. W. M. S. Marriott, under the direction of Mr. W. Milford Teulon, architect, were opened on 30th ult. They are to accommodate 120 children, boys and girls. Messrs. Kemp, of Goodhurst, were the builders.

Hythe.—The Treasury have sanctioned the sale of some corporate land here for raising funds to erect baths, and carry out other sanitary improvements in the town. The Government itself having purchased nearly 200 acres of the corporation land, it is intended to make Hythe the depôt for the Minie rifle ball practice. The necessary buildings are now being erected.

Winchester.—A correspondent of the *Hampshire Advertiser* says, in reference to a recent project,—"Much has been said in the town council concerning a new market-house, of its probable cost, &c.; but the leading feature, the advertising for plans, &c. seems to be forgotten." If, he adds, "we are to have a new market-house, with a town-hall over it, surely the same building might be so constructed as to answer the purpose of a banqueting-room, with modern improvements and conveniences. A premium should therefore be offered for the best and second best plans, to induce architects to furnish them."

Dudley.—The Local Board of Health here is preparing for action. Various committees have been named and an inspector of nuisances has been appointed. In his first report the inspector, Mr. J. Castree, says,—"As a general remark, I may state that the entire portion of the town occupied by the labouring classes is in a most unhealthy condition, and more particularly the dwellings of the Irish poor. Numberless applications have been made to me for the removal of nuisances, which cannot be materially abated until a perfect system of drainage shall be established. These consist of stagnant water in cellars, which refill as rapidly as they are pumped out. Several of these nuisances are in the upper part of Wolverhampton-street, one in Tower-street, and many in the Dock. There are, however, a great number of nuisances—such as piggeries, heaps of filth, ordure, and refuse of every description—accumulated in open courtyards, that are capable of immediate removal, and should be at once attended to. . . . . In almost every instance, the residents expressed an earnest wish to be freed from these impurities, and a willingness to co-operate (as far as their poverty would permit) in their removal. Great difficulty is experienced in procuring parties to take away the soil, ashes, and refuse, from the fact that there are no places provided upon which it can be deposited."

Devonport.—Some extensive Government works have been commenced in this neighbourhood. Within the town itself, on what was formerly the site of Ligurier and Picquet barracks, the contractor, Mr. P. Clift, of Plymouth, has put on a number of men to work in excavating and preparing for the erection of new and extensive barracks. Without the town, on the eastern side, some extensive fortification works have been commenced, immediately behind the main guard, opposite the entrance to the Mount Wise Parade. At the top of Stonehouse-hill a demi-bastion, commanding the approach from Plymouth and Stonehouse, is being formed; and on the other side of the road the limestone rock is being removed for the formation of a crescent-like fortress, commanding Plymouth Sound, Stonehouse, and the roads from Plymouth.

Uttoxeter.—The foundation-stone of a town-hall, "Smithfield," &c. was laid on Thursday in last week. The site is in High-street. The town-hall is to be of brick, with stone dressings. The front presents to the High-street a face of 90 feet 4 inches, and contains on the ground-floor an entrance-hall 20 feet 6 inches by 16 feet 2 inches, approached under a stone portico; a lobby (separated from the entrance-hall by a glass screen), 20 feet 6 inches by 18 feet 4 inches, which leads into the large room or hall, 68 feet 4 inches long, 30 feet wide, and 34 feet high, for the use of the magistrates, and for public meetings, &c. A gallery for the additional accommodation of the audiences runs round the two sides and one end of this hall; and a large music-gallery or orchestra occupies the remaining end. On the same ground-floor is also the staircase to the upper rooms—reading-room for subscribers to the Literary Institution, Savings' Bank, magistrates' consulting-room, and police-office. The last is kept distinct from the other portions of the building. On the first-floor is a large ante-room, from which is approached the galleries around the great hall; ladies' retiring-room, 35 feet 6 inches by 16 feet; library of Literary Institution, 23 feet by 14 feet; honorary members' reading-room, 29 feet 6 inches by 17 feet; female singers' retiring-room; and sitting-room and three bed-rooms of police department. Under the ground-floor are cellaring, already let, and prisoners' cells. The Smithfield lies at the back of the Town-hall, and is approached from Smithfield (or Smithy) lane, on the Stone-road, by three entrances, and covers a site of 1a. 1r. 15p. The stalls and pens will contain 800 head of cattle, 840 sheep, and 225 pigs. The entrance for sheep is in the High-street, to keep them separate from the cattle. The estimate for the erection of the hall is between 3,000*l.* and 4,000*l.* and for the Smithfield, 1,500*l.* The contractor is Mr. Wm. Evans, of Ellastone, who is under an agreement to complete it by July next. Mr. Thomas Fradgley is the architect. The designs are by desire plain and unadorned.

Stafford.—On Thursday, the foundation-stone of the new Guildhall and covered market was to be laid. The contractors are Messrs. Holme, of Liverpool.

Hanley.—A public bath for the working classes has been erected in this neighbourhood by gentlemen resident in the district. The building is situated between Etruria and Burslem. It is 150 feet in length by 60 feet in width, and will be supplied with clear water obtained from natural sources. On the side next the canal a high brick wall, branching out into a covered shed, for the purposes of undressing and dressing, has been built, and on the opposite side a raised turf mound. The water on one side will be 2 feet in depth, gradually increasing to about 7 feet, and a row of posts and ropes, running longitudinally, will partition off a portion for the safety and guidance of those who cannot swim, whilst the bottom will be composed of layers of fine sand and gravel. A lodge has also been erected near the entrance for the accommodation of a bath-keeper. Mr. J. S. Forbes, of Etruria, architect, furnished the designs and superintended the erection. The bath will be available every day in the week, including Sunday mornings up to the hour of divine service, at the charge of 1d. for admission, with the exception, perhaps, of a certain period of the day, when the charge will be 2d.

Bilston.—The baths and washhouses here have been opened. The inauguration took place on Wednesday in last week. The establishment comprises nineteen private baths—thirteen for men and six for women; a plunge bath, and a swimming bath, the whole constructed of Rufford and Finch's patent porcelain. The charges for admission, for annual subscribers, are fixed at from one guinea, for the unrestricted use of all descriptions of baths, to ten shillings for the swimming baths only; single baths, first class, sixpence private warm, threepence cold, sixpence vapour and shower; second class, threepence private warm, one penny cold, threepence plunging bath and shower bath. Swimming bath with the use of towel, twopence; without, one penny. The washing department contains ten washing compartments, each fitted with three troughs, and furnished with an unlimited supply of hot and cold water, also steam water for boiling. There are ten drying closets, and a wringing machine. The architects were Messrs. Ashpitel and Whichcord, the builder Mr. R. C. Hemberrow, of Wolverhampton, and the engineer Mr. J. Potter. The cost of the erection has been 2,300*l.* exclusive of site. Further improvements are projected in the town, and it is expected a town-hall will shortly be commenced.

Liverpool.—On Monday in last week, the foundation-stone of the Roman Catholic schools for the poor, to be erected in connection with St. Francis Xavier's Church, Salisbury-street, was laid. They will extend along Haigh-street, at the back of the church, about 187 feet. The school for boys will be 81 feet by 32, and that for girls of the same dimensions. There will also be an infant school of 20 feet by 34. The establishment will, altogether, be adequate to the education of 1,000 pupils. The schools are to be provided with extensive playgrounds, lavatories, &c. in accordance with the requirements of the Government, who will award the usual educational grant. The style of architecture to be adopted is the Early Decorated of twelfth century. Mr. Spencer is the architect, and the contractors for the building are Messrs. William Baines and Son. The schools are to be completed in nine months.

Sheffield.—St. John's Parsonage-house is in progress. It is situated at the east end of the church, and is in the Old English style, costing about 1,000*l.* The architects are Messrs. Weightman, Hadfield, and Gouldie. On a piece of land adjoining, schools are about to be erected. The site has been given by the Duke of Norfolk.——The New Roman Catholic Schools in White Croft, by the same architects, are now completed. They consist of a girls' schoolroom on the upper floor, 75 feet by 30 feet; a boys' schoolroom, 50 feet by 30 feet; with class-room, 22 feet by 23 feet; also library, separate entrances, &c. The cost is about 1,200*l.* raised by voluntary contributions, with the aid of 500*l.* from the Committee of Council on Education. The adjoining property has been secured, and will form a site for the erection, at some future period, of a new church.

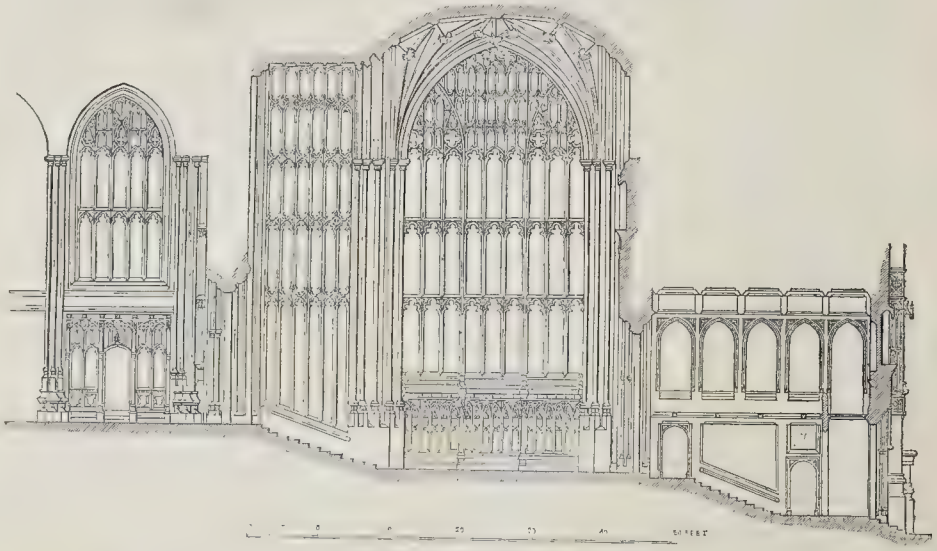
Lincoln.—A scheme for public baths has been prepared by Mr. Joseph Moore, with plans, and a model of the building. The swimming-bath is circular, and the bath-rooms are arranged in a circle within that of the swimming-bath, the centre being occupied by rooms connected with the building. Mr. Moore suggests the old Sheep-square as the most central site available for the erection of the building.

Shields.—The contracts for the erection of baths and washhouses at South Shields have been let; the building contract to Mr. Cail, contractor, Newcastle, and the engineering contract to Mr. Watson, also of Newcastle. There will be twenty baths and fifty washing-stalls. The cost will be 3,000*l.* Mr. Oliver, jun. is the architect.

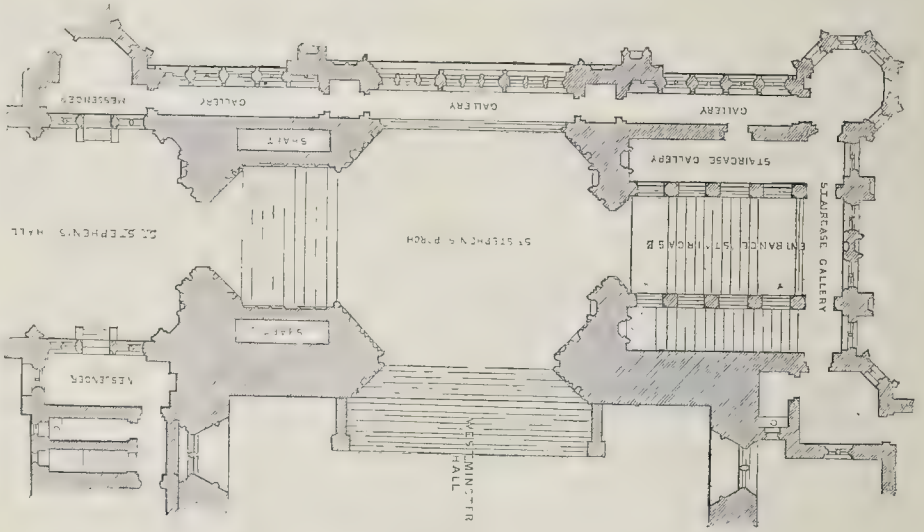
Seaham.—The proceeds of the bazaar held by the Marchioness of Londonderry at Seaham Hall, on behalf of the Literary Institution at Seaham, now in course of erection, amount to 420*l.* The building, which is altogether of stone, consists of a lecture-room, capable of holding from 500 to 600 persons; and on either side a library and news-room. The front will present a façade of about 80 feet, from the centre of which is brought out a bold projecting portico, supported by a row of columns terminated by an ornamental cornice and pediment. The approach to the lecture-room will be through the portico, and, leading from this, distinct entrances are provided for the library and news-room, which thus form wings to the main building. The architecture of the elevations is Grecian Doric. The internal decorations will be Ionic. It will be lighted with gas from the roof, which, it is expected, will facilitate the ventilation. The Marquis of Londonderry has presented the site and a considerable portion of the building materials towards the erection of the institution. Mr. Oliver, jun. is the architect.

Haddington.—Arrangements have been so far completed for the erection of a corn exchange at Haddington, adjoining the County Buildings. The entire cost, including site, will be 2,250*l.* The foundation-stone will be laid in a few weeks by the Marquis of Tweeddale.

ST. STEPHEN'S PORCH, NEW HOUSES OF PARLIAMENT.



SECTION, LOOKING SOUTH.



PLAN.

[See page 557, *ante*.

HER MAJESTY'S VISIT TO IRELAND.

On Monday last, her Majesty and suite arrived from Holyhead in Dublin. The entering was in semi-state. Crowds flocked from all quarters, and the city was literally inundated by strangers.

The procession was not so imposing, nor the enthusiasm so great, as on the last occasion; but we are told that this is owing to the signified wish of her Majesty, that everything should be conducted as privately as possible. The royal suite proceeded from Westland-row, through Clare, Nassau, Grafton, Westmoreland, and Sackville streets (accompanied by the corporation and detachments of military), and thence by the North Circular-road to the Viceregal Lodge, Phœnix Park. The day was fine, and the streets, which were decked in their best, presented an animated appearance. Partial illuminations took place in the evening. In the evening her Majesty, Prince, and suite honoured Mr. Dargan by calling at his villa, near Dundrum. On Tuesday, the day of her Majesty's visit to the Exhibition, a scene, if possible, more stirring presented itself. From an early hour all Dublin was in a state of anxious excitement. The Exhibition building was beset at eight o'clock, and a constant stream of visitors poured in until within a few minutes of her Majesty's arrival, about eleven o'clock.

Heavy showers fell; but returning sunshine added brightness to a scene never surpassed in the Irish metropolis. Arrived at the building, her Majesty entered (under an awning erected over the central door) into a small and tastefully-fitted apartment, specially prepared, while the bands played the National Anthem, and the numbers of congregated spectators shouted and cheered.

A delay of short duration took place, when the doors were thrown open, and her Majesty, Prince Albert, Prince of Wales, and Prince Arthur, entered the nave, amidst the deafening cheers of a dense mass of beings; and thence proceeded to the platform under Telford's great organ, where a series of presentations, addresses, and kissing of hands, took place; after which the Royal party, conducted by the committee and Mr. Dargan, passed through the several aisles of the building, and contemplated the scene evidently with much earnestness and admiration.



ST. STEPHEN'S PORCH, NEW HOUSES OF PARLIAMENT.—Sir Charles Barry, R.A. Architect.

[See page 557, *ante*.

AMERICAN NOTES.

The American Association for the Advancement of Science have held their annual congress at Cleveland, in Ohio. The Earl of Ellesmere, we observe, attended there. Amongst the papers read we notice one "On the Resistance of Vertical Plates of Tubular Bridges," by Hermann Haupt, Sup. Penn. central railroad. At the congress, resolutions were offered reducing the yearly assessment to one dollar, and appointing a committee to revise the constitution of the association.

A new gold-crushing machine has been invented by Mr. Bredan, and a model has been forwarded to Messrs. Nourse and Co. 17, Cornhill. It is analogous to immense mortars with great balls for pestles, and while crushing and pulverising the auriferous quartz, it amalgamates *all* the gold in it by means of heated mercury. We are a little surprised to find that the use of *heat* in amalgamation of this kind is a new discovery, considering the well known influence of even a very little heat in dissolving metals in mercury, and in melting solid amalgams already formed. It is said that while the ordinary gold digger only obtains a fourth part of the gold in the "dirt," and other machines now in use only one-third of it, this machine obtains every particle of it. The pulverised material is washed away, and nothing but the pure amalgam remains, from which the mercury is distilled for use as before, leaving the gold in dust or powder.

The street railways in New York, according te the *Daily Courant*, instead of being, as was feared, a dangerous nuisance, are a great convenience. "They are well managed," says the writer, "and civilly conducted, and for a small sum carry you almost the whole length of the city. They do not interfere with the ordinary travel of the streets, and are not near as much the terror of pedestrians as the omnibuses. The seats are easy and the passage smooth and free from jolts."

Buildings in New York, according to the same writer, "grow more elegant and more expensive as the city increases. Those tenements that were considered thirty years ago as the most elegant, are now third-rate residences; and Bond and Bleecker streets, that were then the *ultima thule* of aristocracy, are now but plebeian streets. The change in Broadway is very great. Many of the old buildings that were once thought very splendid have been torn down, and immense six-story stores, with elegant sandstone fronts, have taken their place. When the stranger remembers how much building he has heretofore seen going on in the street, he involuntarily exclaims, 'When will Broadway be finished?'" "The new churches," he adds, "are mostly in the Pointed Arch style, and present rather too much similarity. Grace Church is perhaps the most elegant in its proportions. It is constructed of white marble; but the blocks were left unpolished, and the rough surfaces have caught the dust and given the appearance, at a distance, of a dirty granite to the building. The transepts of Dr. Hawkes' Church have so many gable ends that the rear view of the building presents an uncouth appearance. The handsomest building of the Pointed Arch style is the parsonage-house of Grace Church." He expatiates on the constant growth of the city "from accretion," as he calls it; but a Londoner has little wonder left him for other cities than his own on such a subject.

Joseph Swift, Charles Henry Fisher, Peirce Butler, and other gentlemen of Philadelphia, have purchased the old Hunting-park course, 44 acres in extent, and are about to present it to the public for a park. This act of noble munificence will, doubtless, lead to others, for an irrepressible disposition for acts of great liberality and philanthropy is eminently characteristic of Americans. In its demonstrations, however, it has too often shown the want of cultivation and elevation; and herein have the superior and the wealthy classes been derelict to the principles of duty.

Building operations seem to be still in an active state at Boston, where the extensive addition to the American House is progressing rapidly, and "magnificent" stores and other buildings are rising in various quarters. The marble building nearly opposite the Adams House is said to be "a splendid structure."

A new plan of accommodating labourers on railway improvements is practised on the Chicago and Mississippi railway, according to the *Illinois Journal*. The entire working force on this road is 100 persons who live in cars fitted up for the purpose of boarding the men, and pushed along as the rails are laid, thus securing the advantage of having the men always near their work. This locomotive boarding-house, or village, comprises fifteen large covered cars, with all the necessary conveniences for cooking, eating, and sleeping. They carry cows, which graze alongside, and are put in the stalls when the locomotive village changes ground.

Amongst the new patents reported in the *Journal of the Pennsylvanian Institute*, for May last, we find the following:—For an *Improvement in Lime-kilns;* Samuel J. Seely, city of New York: antedated November 17, 1852.—*Claim.*—"The process herein described, of calcining limestone in a kiln, by the aid of furnaces, and an artificial draft of air through the furnaces and the kiln, maintained by a mechanical blower, substantially as herein set forth. I also claim the combination of a suction blower at the top of the kiln, and a forcing blower at the bottom thereof, substantially as herein set forth. I also claim the method of regulating the production of steam to generate the power for the engine in proportion to the duty required of it, by setting the steam boiler in the same furnace that supplies the heat for calcining the limestone, substantially as described."—For an *Improvement in Artificial Stone;* Julius Hornig and Ludwig Suess, Union-hill, New Jersey. *Claim.*—"The employment of silex, alumina, and salt, mixed and treated substantially in the manner set forth, and in the proportions designated, in the manufacture of artificial stone."—For an *Improvement in Compositions for a Filter;* Wm. H. Jennison, assignor to Charles Millington (now deceased), and John Jordan, and said Millington's executrix and executor, and said Jordan, assignors to James M. Parker, city of New York. *Claim.*—"The combination of animal charcoal, glass, and starch, or its equivalent, treated in the manner set forth, for a filtering compositon, as specified."

RATEABILITY OF COAL AND IRON MINES AND MINERALS.

The anomaly which has so long existed in respect of the liability of mines to be assessed in contribution toward the relief of the poor has for a considerable period been the occasion of much complaint and yet longer contention. As the case now stands, the only difficulty appears to be the determination of the proper principle upon which the land is to be rated where minerals abound, or through which all mineral products must be approached. So it is with timber. Saleable underwoods, as specified in the Act of Elizabeth, may be rated; but tall timber has been held to be exempt. As saleable underwoods and coal-mines are mentioned, the doctrine of the law has been applied, which says —"*Expressum facit cessare tacitum*,"—hence both tall timber, as well as iron, copper, lead, tin mines, &c. however productive, are uniformly held to be exempt, because coal-mines and saleable underwoods are particularly set forth in the preceding enactment. The produce of iron-mines in the time of Elizabeth was probably nominal, as compared with coal; and from this period to the present the mineral resources of the country have been progressively developed, and thus the letter of the Act has been taken, although utterly at variance, as it must be, with the spirit thereof, the basis of which appears to be, that wherein is the ability to enjoy, or beneficially to occupy, ability to contribute has been uniformly considered to be inseparable therefrom.

Under these circumstances, since your recent notice of the subject, I have taken the liberty of placing at your disposal the following:—

Extract of a Report on Survey of Aberdare.

Of Mines.

The 43rd Eliz. c. 2, specifies, "That the overseers of every parish should raise by taxation of every inhabitant, occupier of lands, houses, coal-mines, &c. as rateable towards the relief of the poor." But I submit that nothing therein is contained which either by indirect reference or direct expression can ever be construed to exempt "minerals," especially those of a petrous character. All quarries are held to be rateable,—the distinction between mine and quarry is substantively not on the difference of the substance raised, but upon the mode of raising it; hence, as far as my judgment leads me, I add that quarries, when wrought for ironstone, are and must be directly rateable. Quarries are sunken workings exposed to the sun, visible from the adjacent boundaries, and having had the original surface destroyed, developing upon their newly-attained or artificial soil or surface a varied stratification. Limestone, freestone, ironstone, as the case may be, nevertheless enjoying and receiving the light of day, "*cujus est solum ejus est usque ad cœlum*," open to the heavens. Limestone, which is the flux of ironstone, and in the process of smelting is worked with it, is rateable. Why not the latter? On the other hand, a mine or mining is a subterranean operation or mode of working, by sinking shafts, driving levels, adits, &c.; as, for instance, the working of the contributing coal-mine, or the exempted iron, copper, lead, or tin mine, wherein the light of day never enters. Such and the like workings must be considered as a mine; nor does, in technical parlance, the general practice of calling ironstone "mine" or ore, to which limestone is the matrix, from mere conventional phraseology, convey any indemnity from assessment. As well might it be contended *cæteris paribus*, that a *granite quarry* should be held as exempt, because that stone, like ironstone, in a greater or less degree, is in fact impregnated with the latter mineral, although not sufficiently so in degree as to render its smelting remunerative.

When the real or original surface or soil has been totally destroyed, and an artificial surface has been obtained, and has thereby been rendered productive, it nevertheless appears to me that the actual beneficial occupation thereby is yet maintained, and is still coexistent; the sunken area has become progressively the present soil or surface, since a restitution or restoration of the original soil or surface has by the process of quarrying been rendered impracticable, nay impossible. Ironstone has now been constituted as much the produce of the acquired surface, or soil, or strata, and has been rendered productive even as though the original soil or surface had never been removed, or even under the most skilful management been brought into the highest state of cultivation, or otherwise. Therefore, having the imparted ability to enjoy, continued with a modified but equally beneficial occupation *pro rata*, is liable to be brought in contribution towards the relief of the poor. Cereal crops growing, impart not a greater value to the soil or surface than the mineral crops, more especially when they themselves are cropping out upon a like soil or surface. In this case either must be the product; and when *ironstone* is *quarried*, from the out-cropping on the soil or surface, where no mine or mining operations could ever have existed or was even practicable, mining itself, in such instances, must be admitted unnecessary, inexpedient, and even impracticable.

By the cropping out of the mineral upon the original soil or surface, the soil itself is rendered productive, and an increased value is thus given to the land, and by the process of quarrying the progressively substituted or acquired surfaces are rendered more so, and a greater value is thus imparted even to common lands.

Quarries, chalk-pits, clay-pits, brick-earth, kilns, &c. are all unexceptionably rateable: nor are minerals themselves, as such, exempt; for the Court of Queen's Bench has ruled, that if from any mine the lord or owner himself receives in kind as rent any portion of the mineral produce either in a raw or manufactured state, when such is raised from the earth, and is upon the land or surface, then the lord or owner is treated as the occupier, and in the way of trade in reference to that portion of the mineral produce so separated is treated as the occupier of the mine. In the generic signification of the term, ironstone is certainly mineral, and as such minerals are not exempted. Lord Denman, in one of his distinguished judgments, has ruled, in reference to occupations, "What is the value of the occupation, from whatever source derived? In neither can the profits in trade, as such, be brought into the rate; but if the ability of carrying on a gainful trade upon the land adds to the value of that land, that value cannot be excluded, because it is referable to trade." And again, in reference to actual occupation, "that the rate is to be on the occupier in respect of the beneficial value of his occupation. The parish officers have to look to the actual state and value of the occupation."

The foregoing report was directed to the board of guardians of the Merthyr Tydfil Union as an accompaniment to the survey of the parish

of Aberdare, and has only an indirect reference to ironstone or ore where raised through pit or shaft; although in the parish of Aberdare it frequently occurs that both coal and ironstone are raised through the same means. In point of productiveness, or rather in relation to intrinsic value, each may be equal. Nevertheless, in real contribution, actual uniformity, in the combined signification of the term, at once ceases to exist.

JOHN D. PAINE.

TERRA-COTTA STATUE, SYDENHAM.

We are informed by Mr. Blashfield, that the statue of "Australia," by Mr. Bell, now placed in the gardens of the Crystal Palace, is of terra-cotta. A plaster mould was made from the model, into which a terra-cotta body, composed of Devon and Dorset clay, ground flint, glass, &c. was pressed, at about the consistency of painters' putty. After the clay, &c. had become sufficiently dry to remove the mould, the statue was finished by an artist, the final touches being given by Mr. Bell. The statue was then placed in a proper situation to dry slowly; and, when dry, was removed into a reverberatory kiln by means of rollers, placed under a false bottom, upon which it was afterwards fired. The firing occupied three weeks, and the heat attained was that at which glass will melt.

The contraction in firing was three quarters of an inch to a foot.

The statue, after burning, weighed about 25 cwt. and is, including its plinth, about 8 feet 6 inches high. It is probably the largest piece of pottery ever fired in an entire piece. Mr. Bell had the commission for the design and model, and Mr. Blashfield for the moulding, pressing, and firing.

THE LABOUR MOVEMENT.

The master builders have had meetings, but they cannot agree to any consistent or uniform line of procedure.

Meantime the workmen are progressing in their pre-determined course, and, so far as we can perceive, are gradually carrying all before them. Mr. Myers has given in, finding that some of the other masters would not support him, and his men now receive the required 5s. 6d. Mr. Jay's submission we have already recorded. Mr. Mackenzie, the contractor for the Victoria-street houses of the Westminster Improvement Commissioners, is said to have acceded. In Messrs. Cubitt's employment all, it is said, who are worth it are to have the advance. Other masters are following these examples, so that the natural conclusion will be that while their inability to agree, unanimously, to *resist* the generald emand implied a consciousness that the demand itself was not unjust,—their unwillingness to agree to give it, on the other hand, would prove that strikes were absolutely requisite to enforce a demand which was just. That workmen have a right to strike we have always held. That success in the immediate object of their strike necessarily implies that they have reaped an advantage, we have always questioned. In the present instance we are at least obliged to admit that strikes are effecting in detail what employers refused as a body to give. In future, therefore, how can workmen be blamed for resorting to strikes, however injurious to both parties, since it seems to be the only and the effectual way to ascertain whether masters *seem* to be able to afford to give what is required? We earnestly hope, for the sake of both parties, that in this case the masters really can afford what they so reluctantly yield on sufficient pressure of demand. They ought to know what their returns actually enable them to give, but it will not be good for either employer or employed if a mere temporary pressure of engagements has induced the former to yield, as only the least temporarily urgent of two positive evils.

Messrs. Locke and Nesham's bricklayers have struck for the ten per cent. or 6d. a day, and so have those of Messrs. Haynes and Eyre. A very large number of hands in the service of small masters have also refused to work unless at an increased rate of wages. The consequence is, that new buildings taken under contract are standing still, at an immense loss to the contractors. At a general meeting of operative bricklayers it has been resolved to support the men on strike, by pecuniary aid, until the advance solicited is secured. The workmen in the employ of Messrs. Holland dined together on Wednesday week at Highbury-barn, to the number of 300. Mr. H. Holland was to have taken the chair, but, on the morning of the day, the bricklayers of the firm waited upon him by deputation, and told him that they would not resume work without an advance of 10 per cent. on their wages. The morning of a festive occasion, to which Messrs. Holland contributed largely, was thus selected for the commencement of the strike.

The masons and others are still agitating for the nine hours' day's work.

In the country there are still a few strikes taking place in the building trades. Thus at Swansea new docks the masons employed by Mr. Pickering, the contractor, have struck. The masons' strike at Glasgow continued until lately, when it was settled. The workmen are to be paid at the rate of 5d. an hour, and to work fifty-seven hours a week; they may, however, work sixty hours if they choose at the same rate for each additional hour. In the event of the employers proposing to reduce wages, or the operatives to raise them, it is distinctly understood that six months' notice is to be given by either party.

In the farther north, as at Arbroath, &c. the wages movement appears to be now spreading.

RAILWAY COMPENSATION.

Meeson v. *Eastern Counties Railway Company.*—An inquiry was held on the 17th ult. at Brentwood, before Mr. Gepp, deputy-sheriff, and a special jury, to assess a claim for alleged damage received by the plaintiff from the Southend and Tilbury Extension of the Eastern Counties Railway. According to the statement of a correspondent, the claimant, Mr. Richard Meeson, of the firm of Meeson, Errington, and Meeson, who carry on the well-known and extensive chalk-pits and lime-works at Grays, sought compensation for 2a. 3r. 39p. of land actually taken by the above railway company, and consequent damage, by severance, to his adjoining estate of 160 acres, and for the permanent injury which he alleged he would sustain in his business. Mr. Wallen, surveyor, Romford, estimated the compensation at 3,165*l.* 3s. exclusive of the cost of the culverts, 860*l.* Mr. George Prickett, of Hornsey, put it at 3,353*l.* exclusive of injury done to the business; and Mr. Robert Driver, of Whitehall, at 4,775*l.* including the culverts. The damages were laid at the latter amount. The jury awarded 650*l.*!

ELECTION OF SURVEYOR FOR THE DISTRICT OF ST. LUKE, &c.

On Thursday, 25th ult. the justices proceeded to elect a surveyor for the district of St. Luke (Old-street) and Glasshouse-yard, under the Metropolitan Buildings Act. The candidates were:—Mr. H. Field, Mr. H. J. Hammon, Mr. F. W. Porter, and Mr. G. B. Williams. The election fell on Mr. Hammon.

IRON BUILDINGS.

Messrs. E. T. Bellhouse and Co. of Manchester, have received orders to prepare an iron custom-house and public store for Payta, in Peru, of very considerable magnitude. The custom-house will be 70 feet square within the walls, and have balconies and verandahs projecting out 6½ feet from each face of the building. The main portion of the structure will be of two lofty stories, and there will be a platform 22½ feet square above the roof, from which will rise a circular tower, with a smaller tower above, surmounted by a cupola and flag-staff: the extreme height from the ground to the top of the flag-staff will be above 100 feet. The whole of the exterior will consist of cast-iron uprights and wrought-iron framing, with sheets of galvanized corrugated iron attached thereto by means of bolts and rivets. Each of the stories will have a main central passage 13 feet wide, from which the various rooms and offices will be entered. The whole of the interior will be floored, lined, and ceiled with wood. The iron store or warehouse will be of a plainer design, consisting of a large building under one roof; the extreme length being 120 feet, and the width 90 feet. The cast-iron uprights of this building will be of the form recently patented by Messrs. Bellhouse. These uprights are in section a hollow column, having side wings cast thereon of such a form that the corrugated sheets will fit in a simple way to the ribs. The main entrance will be at one gable end, and will consist of an arched grated opening, with a gateway, through which a covered area for loading and unloading will be entered, 60 feet long and 30 feet wide. Messrs. Bellhouse have recently sent out to India the iron roof of a church, calculated to obviate the intense heat of tropical climates. Wrought-iron principals extend from wall to wall across the building. Rebated wooden boards 1½ inch thick, are fastened upon them, and over these a layer of thick dry hair felt is nailed, with a final external covering of corrugated sheet-iron. At New York a lodging-house is being prepared for the accommodation of 1,000 persons. Its height will be eight stories, and the outside dimensions 200 feet square, having a courtyard in the centre. The exterior is being made of iron, and the inner walls and partitions of brick, and it will be thoroughly fireproof in every part. The cost, including purchase of land, is expected to amount to 400,000 dollars.

RAILWAY MATTERS.

The costly engine-houses of the old Atmospheric line in Devonshire, are being blasted and demolished. One of them, the Dainton, blown up last week, was 90 feet high, and yielded 500 tons of building materials. By an improved mode of blasting it was demolished by four pounds of powder. The South Devon Company are making a double line from Newton Abbot downwards to Plymouth; and the Messrs. Holmes, who have taken the contract, are proceeding vigorously with the work. ——A congress of directors, from different parts of Germany, is sitting at Berlin to arrange for the rapid communication of all improvements among the members in providing for through trains.——Our readers will recollect of an account in our columns of a machine for tunnelling through the Alps. The central railway of Italy is to be staked out immediately and the tunnel commenced. We have also made mention of a tunnel-boring machine in America. The machine is thus described in the *New York Tribune*. "The great tunnel borer, just built by Messrs. Woodruff and Beach, of Hartford, is the invention of Mr. E. Talbot, a foreman in their factory. Worked into its own machinery, is an engine of sixty-horse power. This drives four piston-rods, horizontally, and these turn four half-circle plates, of stout proportions, on which circular revolving-blades are set. These four plates are turned with exactness about one-fourth of a circle and back, and are all set upon a revolving plate of about ten feet in diameter, and, as thus set, cut a cuticle of 17 feet in diameter. The machine weighs about 80 tons, and is of stout proportions throughout. The motion obtained by this invention is novel—entirely new. By it the revolving knives, each running its quarter circle, cut completely from the centre to the circumference, and they do their work steadily and surely, cutting a round hole as they are turned by the large or centre plate."——The King of Naples has ordered the railway from Naples to Brindisi to be commenced, but he has directed that no Englishman, either directly or indirectly, is to have any connection with its making, or in the manufacture of the *matériel* to be employed.——Mr. P. O'Reilly, of Reading (U.S.), has patented a plan for the construction of rails, which he terms a divided or double-plate rail, being composed of a flanged arch or bridge rail of usual form, but only about half the general thickness and weight, with another of similar external form, thickness, and weight on which it rests. The under sides of the arch of the upper rail forms a groove to fit over and rest upon the arch of the under one, the spike holes corresponding, so that they may be secured firmly together, and to the foundation. A patent for a precisely similar rail has been taken out by Mr. C. E. Smith, of Philadelphia, adding the insertion of a hollow or solid tongue in the lower rail, to give it a bearing on three sills or cross ties, directly adjacent to the joints.——In a New York invention for ventilation of carriages, "the air is taken through an air-tube surrounding the tender, and thence passes through the door of the baggage-car, through the baggage-car into the passenger-car, passing out at the open door of the last car, no matter how long the train may be. The baggage-car is made as tight as possible, so that no dust can get in, nor air escape, except through the door. When the air reaches the last door of the baggage-car, it passes into a sort of 'cubby-house,' made of India rubber. The passengers enter a door in the side of the cubby-house, and thence pass to their seats in the car. There is one continuous saloon, from the forward end of the baggage-car to the extreme end of the passenger-car, and through this saloon all the fresh air taken in around the tender passes. The windows of each car are made tight."——The *Rochester* (U.S.)

Union says:—"We were shown, at the depôt of the New York Central Railroad, two cars with refrigerators attached to them, for the purpose of preserving fresh meats and vegetables for any length of time in as perfect a state as when first prepared for the market. The car is an invention of Mr. Lynan, and a patent has been secured for it."

Miscellanea.

THE NEW EXCAVATIONS AT HERCULANEUM.—"The last days of Pompeii" by Bulwer exhibits but one phase of that immensity of interest in the possibilities and the actualities of those two posthumous cities, Pompeii and Herculaneum, whose "geological remains," as we may truly call them, are now opening on the astonished sight of a generation of men divided by twenty hundreds of years from those whose traces still appear, in their streets and their dwellings,—traces not only of their domestic habits and their every-day acts and employments, but of their vanities, desires, and duties,—nay, of their own very selves. The remains of a true Roman soldier are seen at a postern, where duty kept him as a sentinel till he perished at his post, amid the war of the elements,—a war far more terrible than he had ever before faced. The skeleton of a poor wretch is found loaded with valuables, to retain which would appear to have constituted a stronger desire than that of preserving life itself. A slender skeleton bedecked with rings and bracelets mockingly betrays the "weaker vessel" and its excusable nay pleasant vanities. Every one who contemplates such pictures of the past can readily sketch the outline of a little imaginative romance of his own of the "last days" of Pompeii or of Herculaneum. New sources of suggestion are still turning up. The excavations at Herculaneum have been renewed, and an immense field of interest still remains to be explored. The work, however, proceeds as yet but slowly—at the rate of 4s. 6d. a day! So says a correspondent of the *Athenæum*, from whom we may here quote the following passage in respect to a part of the old arsenal near the *port* of Herculaneum—now, by the way, half a mile from its walls:—"I found myself in a series of small rooms or apartments, with kitchens attached, which had just been laid open: apparently they had been quarters for marines. The roof is vaulted, and very lofty; whilst the partition walls are very low,—showing that one large hall or space had been hastily or rudely arranged with a view to the convenience of numbers. In the first small room, which was a kitchen, still exist the stoves and grates, precisely of the same form as are now to be seen in every part of Magna Græcia. Beneath the stove lay fragments of pottery, which a slovenly cook might have thrown there an hour before, "to put them out of the way;" whilst the bones of the poor cook, it might be, were found mixed up with ashes and the instruments of his trade. In the same place also were found bones and minute fragments of iron plates; indicating, in the opinion of Cavalier Bonucci, that in the awful moment of this city's destruction, some men were surprised and overwhelmed on this very spot. What a melancholy interest have these, especially as connected with history. From the kitchen we passed through a small room and entered another kitchen. On the grate or stove were lying pieces of charcoal: the mark of the smoke was fresh upon the stove. [A fire laid 2,000 years ago, to be lighted, perhaps, "to-morrow!"] Below and by the side of it was a sink for receiving dirty water, and the hole which carried it off was still entire. Beyond this were one or two other small rooms: and then our progress was stopped by a mountain of indurated ash. In this they were mining or burrowing a passage."

EXHIBITION OF INVENTIONS.—A correspondent, "Rovilo," says he earnestly wishes to see established an institution where any individual of any nation or class might publicly exhibit, without expense, fear of piracy, or loss of time, any invention or model, affecting the arts or sciences. It is well known, he remarks, that many important inventions have been *accidentally* rescued from oblivion, in which a want of inexpensive and secure means of making them public had detained them. Some eighteen months since, he adds, an association was started, entitled "The Inventors' Aid Association," but it died at birth, and the poor inventor's horizon is as black as ever. It must be remembered, however, that even poor inventors have now advantages, as respects publicity with safety, which they did not possess prior to the recent changes in the law of patents, and according to which, new inventions may be anywhere exhibited after the preliminary steps have been taken towards securing a patent; so that previous to the expiring of the temporary period of protection, if the invention be worth anything, it may be taken up by a capitalist, and patented. There are still risks, no doubt; but such probably there ever will be, to some extent at least, whatever be the state of the law on the subject.

IRON AND OTHER METALS.—The relief from previous depression in the iron trade, induced by the late reductions in price, still continues, and might ere long restore something like prosperity to the trade, but will it be credited that there is already talk of raising prices again! The stimulus lately given to the American home manufacture, on the other hand, is occasioning serious apprehension that the transatlantic market is closing against the British iron manufacture. Australia, however, may be said to be only now opening to the trade. The disputes with workmen in Wales are not yet settled, and are productive of some anxiety. Coal is still high priced, and threatens to be forced up even higher. The iron of the Cleveland district, in Yorkshire, is likely ere long to come into formidable competition with other districts in the trade. The formation, in the oolite, yields 30 to 40 per cent. of iron, and already several large undertakings have been established, numerous furnaces put in action, and a new branch of industry thus opened up in this extensive district, which is about to be greatly facilitated by new railway communication.——A correspondent of the *New York Tribune* speaks of "a mass of pure copper in the North American mine, thrown down on the 8th of July, and which was 42 feet long, 20 feet high, and 2 feet thick!"——Dr. Owen, of Indiana, who has made a survey of the mineral lands of Iowa and Winconsin, in his report to Congress, calls attention to vast deposits of electric calamine, the carbonate of zinc, associated with the ores of lead in regular veins. The lead miners, not knowing its value, have a special aversion to it, and thousands of tons are laying at surface in the neighbourhood of the mines. Mining operations are undoubtedly rapidly extending in the United States, and these large resources of calamine will enable the American capitalist, when fully made available, to compete with Belgium, whence nearly all the zinc of commerce is supplied.——M. J. C. De Medeiros, of Passy, France, has patented a plan for improvements in the means of preserving metals, by applying mercury to such surfaces as have an affinity, for quicksilver, and where there is no such affinity by means of an intermediate surface of galvanized iron. There is also a claim for the discovery that such amalgams constitute a voltaic pile, repulsive to sea animalculæ—such as barnacles and other shell-fish,—to seaweed, and other marine matters containing animal or vegetable life; also preventing oxidation in excess with copper in the proportion of 1 in 50 in its normal state in sea water, and 1 to 1,000 in atmospheric air.

GENERAL BOARD OF HEALTH.—From returns just printed it appears that the average annual expenditure of the Central Board of Health (after deducting the amount repayable from Local Boards of Health) has been 4,813*l*. The number of boards held have been 1,000; and the number of letters received 27,172, exclusive of letters and returns relating to epidemics. Letters, &c. despatched, 93,580. Representations made to Board for assistance, and complaints as to public nuisances, 2,167; local reports, 720. Petitions from cities and towns for application of Public Health Act, 246. Act applied by confirming Acts to 79 towns, &c. and to 76 other places by Order in Council. Number of deputations from towns, &c. 115. Legal opinions given in answer to questions submitted by Local Boards, 1,430. General reports issued by Board, 20 vols. in print. Average expense of applying Public Health Act, 108*l*. 16s. 8½d. while average expense of local and private Improvement Acts, as taxed by taxing officer of Commons, has been 1,627*l*. 12s. 5d. Loans to Local Boards sanctioned by General Board, upwards of 565,000*l*. for execution of works for water-supply and drainage in fifty-five towns under operation of Act. Average expense of private improvement, works of house drainage and water-supply (including filling up of cesspools, &c.) 1½d. per house per week. Average expense of works for constant supply of water, 1 and 3-16ths of a penny per house per week. Average expense of public drainage works, 1½d. per house per week.

CONSTRUCTION OF PAVEMENTS AND ROADS.—Mr. Hadley, of Birmingham, according to the local *Journal*, has patented an invention, the object of which is to obtain an indestructible pavement, to maintain throughout its duration an equal level and more durable working surface, and also to obviate inequalities and corrugations. The invention consists in forming separate blocks of granite or wood into solid plates or blocks of any size, thickness, or areal section, by the introduction and application of thin cast-iron or other metal plates, frames, or boxes, cast so as to form a section of the road, with a series of thin cast-iron vertical girder division-plates, so that the pavement will consist of a row or line of granite or wooden blocks and a vertical girder division-plate of metal alternately. The plate or boxes will be laid in gravel or concrete. A decrease in noise is expected to be realised by the solidity and evenness of the surface.

NEW MODE OF ILLUMINATION.—The Paris journals report that M. Fould the minister, M. Visconti the imperial architect, and a number of officials, literary men, and artists, assembled the other day in the workshops of M. Alexis Codillot, to experiment on a new mode of public illumination. The principle is that of the multiplication of light by means of innumerable small mirrors arranged in a particular manner in a multitude of frames bound together, and which may take different forms—as, that of a star, &c. This framing in light wood-work, with its mirrors, is placed perpendicularly and made to rotate. In front of its central point is placed a bright burner, the reflection of which illuminates every mirror, multiplying the light as it rotates. If between the burner and the mirrors a coloured glass is interposed, the mirrors reflect the colour. By means of certain arrangements, the interposed glasses are made to produce effects and combinations of tints to which the rotation, it is said, gives a fairy aspect. Where the light is not coloured, the reflecting power is declared to be so great that a man may read by it at a kilometre's distance—about two-thirds of a mile. This mode of lighting, it is added, may be turned to account for other purposes than that of mere street illumination,—for shipwreck signals, lighting great night works, tunnels, &c. for example.

LAMP-POST INDICATORS.—At Salford the following plan is about to be adopted:—At the summit of each public lamp-pillar will be affixed, so as to project over the footpath, one directory banner, 24 inches by 16 inches, having at the top a label 3 inches deep, with carved ends, and of a length necessary to receive on each side the name of the street or thoroughfare. Each board will be divided on each side into two compartments, within which will be recorded the names and purposes of all proximate public buildings, post-offices, churches and chapels, &c. together with the hours of business at public offices, times of despatch at post-offices, and periods of service at religious establishments. The remaining compartments will be devoted to the trading community, in consideration of a very moderate subscription. The trading references will be restricted to a simple indication of name, address, and occupation. These references, and the names of the thoroughfares, will be uniformly published on a purple ground, in gold letters, alternately shaded with vermilion and pale blue; and where indices are applicable they will be introduced, painted in flesh colour and artistically executed, so as to indicate the relative position of each establishment referred to. The mouldings and carved portions of the banners will also be gilded, and the whole completed in the most decorative style, so as to constitute a positive public ornament, as well as a source of useful information.

VALUE OF LAND IN THE CITY OF LONDON.—The estates committee of St. Thomas's Hospital met a fortnight ago to receive tenders for a piece of land belonging to their corporation, and which has reverted to them in the course of the improvements in the neighbourhood of and connected with the new Royal Exchange. The land in question is situated at the north-west corner of Finch-lane, which is to be widened and rounded, and contains only about 400 square yards. It is let on lease for a term of eighty years, and for this small piece of land the enormous rent of 1,300*l*. per annum net has been given by the Australasian Banking Company, with a condition to build upon it a substantial stone building. This letting, if calculated at its freehold value, at the present price of Consols, would represent the extraordinary sum of rather more than 520,000*l*. per acre.

THE UNLUCKY ARCHITECT.—The suspicions of the Roman police are occasionally carried to a ludicrous excess, as recently in the case of a Roman architect, engaged in rebuilding a large house in the Via Frattina, who, as is customary in this city when the roof is put on a new edifice, gave a dinner to his workmen a few days ago. Rejoicing in the exhilarating aspect of the dishes of maccaroni and flagons of wine, the bricklayers drew up in military order, with their tools shouldered, to receive the master of the feast, and merrily paid him the semblance of a military salute, an honour which cost him dear, for the occurrence was related by one of the over-ready corps of spies, exaggerated into the regular drilling of labourers to the use of arms for revolutionary purposes, and the unfortunate architect is at the present moment in prison for the offence.—*Daily News.*

BITUMINOUS MINERALS.—Mr. John Perkins, of Manchester, has patented a method of distilling at a low temperature coal shales and other carbonaceous earths, coal excepted, found in the carboniferous formation, yielding bituminous matter on the application of heat, and in obtaining therefrom paraffine, an oil containing paraffine, and other substances. The apparatus is a common gas retort, built up in brickwork, and heated by fire, and to which is connected a coil of iron pipe, immersed in cold water, to cool and condense the products of distillation.

ELECTRO-MAGNETIC LOCKS.—Mr. F. Whishaw, of 9, John-street, Adelphi, has patented the application of electro-magnetism to locks, whereby, either in addition to the ward system, or independent of it, all the immense force of magnetic adhesion may be brought to bear upon bolts and bars, so as to defy the mere mechanical efforts of lock-pickers. The principle is so obvious that we need not enter into details which can be so much varied: it is the application of electro-magnetic apparatus in general to locks, bolts, or bars, if we understand aright, which Mr. Whishaw has patented, not any peculiar form of lock. In all cases where the principle is to be applied from within, as when indwellers secure the doors and windows of a house, the advantage to be thus derived from electro-magnetic fastenings is evident, but where they are applied from without, so far as we can see, there must be dependance either on concealment of the *key*, if we may so call it, to the apparatus itself, or on the use of warded locks, in aid of which only the apparatus could then be used. Thus a bank safe might be fastened by electro-magnetism, but then the wires must be conducted through some secure course to the spot from which the safe is to be either fastened or unfastened. Mere concealment of this spot could scarcely be trusted to; and if warded locks are to be ultimately trusted, might they not in many cases, just as well be primarily trusted? Where a manager lived in a room or house adjoining, however, the case might be different. But any way, there is a large field for the operation of electro-magnetism, and capitalists would do well to look into the matter.

GAS IN PRINTING-OFFICES.—A correspondent, "H. Howard," would have us again direct attention to the oppressive heat and unhealthful closeness of many printing-offices, especially those of the morning papers, in which night is turned into day; and he asks, can nothing be done for those who suffer from such causes? Much certainly may be done, but chiefly by those who are building or rebuilding offices, and which they should provide with loftier and more spacious work-rooms, properly arranged for ventilation. The quantity of gas required is so great and the heat and carbonic vapours unavoidably evolved so oppressive, that when combined with small and close apartments, the effect is most trying and injurious to health: the writer of this note finds even a few hours' exposure, once only weekly, to such influences, more exhausting than the labours of the busiest and longest day while free from them: that they have, therefore, a deadly power over those who are daily, or rather nightly, exposed to them he cannot doubt. Where rebuilding is not to be thought of, a great mitigation of these evils might be accomplished at small cost by the conduction of the heated air and carbonic vapours away from the burners at once through tubes opening into the outer air under proper arrangements.

THE ART GALLERIES AT EDINBURGH.—The structure on the Mound, intended to accommodate under one roof the National Gallery and the Royal Scottish Academy, is far advanced, the external mason-work being nearly finished, and the roofing now in progress. The design has undergone some alterations. The building appears to suffer from want of elevation. The galleries form an oblong, in the Grecian Ionic style, extending in length 265 feet over the columns, and 150 in breadth. The interior is divided into two suites of apartments, parallel in form and position, which extend north and south. The Royal Scottish Academy are to have the eastern range, consisting of seven apartments; the National Gallery is to occupy the western range, exactly similar in form and extent. Intermediate and communicating with each are two octagons of 22 feet each, for cabinet pictures and miniatures. For the permanent collection, several works of art have already been gathered. Among them are—"Christ teaching Humility," by Mr. R. S. Lauder; "Oberon and Titania," by Mr. Noel Paton; and "Columbus discovering America:" the three pictures costing 1,200*l*. It is intended to exhibit a collection of works by the Dutch and Flemish masters, the property of the late Marquis of Bute.

VALUE OF LAND IN MANCHESTER.—Messrs. John Dugdale and Co. of Piccadilly, have purchased a plot of ground, now partially covered with houses, bounded by Kennedy-street, Cooper-street, and Booth-street, and are about to erect a warehouse upon it. The area is about 1,000 square yards, and the price, we hear, is 10*l*. per square yard, exclusive of a small acknowledgment to be paid yearly, in the nature of a chief rent.

YORKSHIRE GEOLOGICAL AND POLYTECHNIC SOCIETY.—A meeting of this society was held at Doncaster on Wednesday week, when a communication was made by Mr. W. S. Ward on "A new Thermostat for regulating Ventilation;" and papers were read by Mr. H. C. Sorby, of Sheffield, "On the Origin of Slaty Cleavage;" by Mr. G. Broadick, of Hamphall Stubbs, "On the Hydrostatic Machinery at Great Grimsby Docks;" and by Mr. Denny, of Leeds, "On some Hippopotamic remains near Leeds."

DISASTERS.—On Tuesday in last week four men were seriously injured by the breaking down of a scaffold at some new houses in the vicinity of the church, at Notting-hill.——A labourer at Eassie's saw-mills, at Gloucester, last week, had his arm instantaneously sawn off while leaning his elbow to a sawing-table, and sliding it carelessly backwards on a circular saw which was then at work.——The disasters in Wales from late floods were not only extensive but remarkably sudden and unexpected. To replace sixteen bridges destroyed and fourteen materially damaged in the county of Brecon alone, the cost is estimated at 3,500*l*. In one locality in Radnor, near Builth, 1,000*l*. will be required. Great part of the road between Merthyr and Brecon was washed away. ——At the baths and washhouses now erecting at Monkwearmouth, a workman was seriously injured on Saturday week by the fall of a scaffold.——Part of the roof of the station at Edinburgh in course of erection for the North British Railway Company fell on Thursday in week before last.

LOFTY CHIMNEY.—A lofty chimney has just been finished at Heywood, near Manchester, at the mill of Mr. Richard Kay, and last week not fewer than 500 persons risked the safety of their necks by ascending to its summit to view the prospect to be seen from such an elevation. According to the local papers the outside diameter at the base is 23 feet 9 inches, the stalk is 240 feet high, and in that length the outside diameter has been decreased to 7 feet at the top. The inside diameter at the bottom and top is 17 feet 6 inches and 5 feet 6 inches respectively. Nearly half a million of bricks have been consumed in erecting it. The "cap" is of cast-iron, and weighs upwards of 14 tons; the lightning conductor is of copper roping, with a gold-tipped point.

SKETCHING IN CANTERBURY CATHEDRAL.—Sojourning lately at Canterbury, I acquired some knowledge touching the regulations of the cathedral, which, as I am by no means selfish, I communicate to you as the best medium of informing artists and architects at large, who, of course, all study the *Builder*. Expressing a wish to sketch a little in the interior of the cathedral, I was informed by the verger on sentry that to do so you must first apply to that apocryphal personage the dean and chapter, who would most likely grant you permission; then you must proceed to the architect, to whom you must explain what part you wish to sketch, and he will then provide you with an attendant. You must pay him for his time, however, who accompanies you all the while, and takes care you do not stray. So you must draw, if you would do so at Canterbury, with this log tied to your leg like an ass turned to graze on the highway.—P.

THE ORDNANCE OFFICE.—I see that scaffolding is again raised against the Ordnance-office. May I indulge the hope that this is preparatory to elevating the centre to a level with the wings, and thus making the whole a decent and well-proportioned building? Some alteration is, it seems, also contemplated on the lath and plaster (what shall I call them?) offsets in front. If these must remain, at any rate they should be cased with brick and not compo, and thus brought into some harmony with the main building: one was, I believe, erected for the private accommodation of some (probably the late) resident secretary; and having a lion, they were obliged to mount a unicorn to match.—Z. A.

EXPERIMENTS ON DECK-NAILS, BOLTS, &c.—A series of experiments has just been concluded in the chain-testing department at Woolwich Dockyard on deck-nails and bolts, &c. made of iron, and coated and tipped with copper by Messrs. Watt and Burgess's patent process. The object of the patent is to render iron deck-nails, bolts, and other articles, available for use in shipbuilding where copper deck nails, bolts, &c. are at present applied, by coating the iron with copper and brass, and the application of the invention to sheet iron and tubes preserves these articles from corrosion. The experiments are reported to have been successful in showing the advantages of the patent. The first set were made with a view of ascertaining if the iron received any injury by the process, and the next with reference to the possibility of separating the copper from the iron. A box containing specimens of the results was forwarded to Captain Sir Baldwin Walker, Surveyor of the Navy, for submission to the Admiralty.

RESTORATION OF WATFORD MARKET-HOUSE.—The committee appointed to consider the best means for restoring the Watford Market-house, destroyed some months since by fire, reported their proceedings at a public meeting held on Tuesday in last week, when it was resolved that nothing could be done till a communication was made with the Earl of Essex, now in Germany, as to the disposal by his lordship of a piece of ground lately occupied by the old market-house, for the enlargement of the area of the proposed building. The committee stated in their report that the materials required to mature any plan were not yet before them.

THE WELLINGTON MEMORIAL.—The subscriptions to the great Wellington College Testimonial have at length reached 100,000*l*. that sum being the minimum contemplated in Lord Derby's letter of November last. A meeting of subscribers has accordingly been held, under the presidency of Prince Albert. Her Majesty has consented to become visitor of the institution, and will nominate the trustees without delay; but the amount now contributed, large as it is, falls considerably short of the sum required to carry out the scheme in its integrity.

RESTORATION OF CARLISLE CATHEDRAL.—Tenders for the restoration of Carlisle Cathedral were received to 29th July. There were four competitors. Messrs. Dove and Vasey, for 11,631*l*. 7s. 7d. were the successful parties, their offer being 5,000*l*. below the highest. The alterations contemplated are extensive. The groined ceiling of the choir is to be removed, and the ancient circular ceiling restored. This alteration alone will cost about 1,000*l*. The window in the north transept is to be replaced by one in harmony with the style of the building. The present entrance from Castle-street will be closed, and a main doorway made in the south transept, facing the abbey. The removal of houses in front of the large east window will afford space for an ornamental entrance; but this is not included in the specifications. The eastern window is to be taken down and restored, and the flat roof of the transept will be removed. The ground surrounding the cathedral is to be lowered. These alterations are to be completed in three years, the service going on without interruption.

ERDE HOUSES.—A farmer at Culsh, by Tarland, in the North of Scotland, has discovered what appears to be one of those remarkable remains of early antiquity called *erde houses*. It is a subterranean vault, of a form approaching the semi-circular, but elongated at the further end. Its extreme length is 38 feet; its breadth at the entrance a little more than 2 feet, gradually widening towards the middle, where the width is about 6 feet, and continues at about that average. The height is from 5½ to 6 feet. The sides are built with stones, some of those in the bottom very large. The roof is formed of stones 6 or 7 feet long, some of them supposed to weigh above 1½ ton. The floor is formed of the native rock (hornblende), and is very uneven.

LARGE BLOCK OF MARBLE.—There has just been landed at Thames-bank, Pimlico, a block of marble, out of which will be worked the large tazza for the "Alhambra," in the Crystal Palace. The block measures 10 feet by 8 feet 8 inches, and is 2 feet thick. It is said to be the largest block of Sicilian or Ravacione marble ever brought into England. It was imported by Mr. Thompson, from Messrs. Fabbricotti's quarries in Carrara, for Sig. Monti, the sculptor, who has to execute the work.

TENDERS

Delivered at the Guildhall, on the 29th of July, for the first portion of the New Metropolitan Cattle-market, Copenhagen fields. Mr. Bunning, architect:—

Cook	£52,371	0	0
Rigby	46,855	0	0
Jay	45,765	0	0
Smith	43,720	0	0
Willson (accepted)	42,239	0	0
Kelk	40,857	0	0

For the Royal Hotel, Sydenham. Mr. F. Pouget, architect; and the quantities supplied by Mr. R. Curtis:—

Myers	£12,743	0	0
Ashby and Sons	11,646	0	0
Mansfield and Son	11,568	0	0

For building two semi-detached villas for Mr. Thomas Colley, at St. John's Wood. Mr. John Burges Watson, architect:—

Longmire	£3,178	0	0
Higgs and Cullingford	2,915	0	0
Wilkinson	2,885	0	0
Carr	2,880	0	0

For house at Harrow for E. P. Hathaway, Esq. Messrs. Habershon, architects:—

Haynes and Eyre	£2,420	0	0
Lawrence	2,213	0	0
Cooper	2,193	0	0
Carter	2,177	0	0
Rowland and Evans	2,120	0	0
Parker	2,120	0	0

For chapel and house at Walworth. Messrs. Habershon, architects:—

Rowland and Evans	£3,167	0	0
Carter	3,164	0	0
Cooper and Bottomly	2,997	0	0
Thompson and Crosswell	2,950	0	0
Cooper, Borough	2,940	0	0
Cooper, Regent-square	2,627	0	0

For a pair of semi-detached villas, delivered and opened last Saturday. Mr. Edwards, architect:—

Hopkins and Roberts	£1,860	0	0
Baughan	1,715	12	0
Wheeler	1,691	0	0
Marshall (accepted)	1,518	13	4

The Builder.

SATURDAY, SEPTEMBER 10, 1853.

HAVING had occasion professionally to examine Mr. Wilson's quarries of Ancaster Stone, and to look into evidences as to the durability or otherwise of that material, we think it may be useful to place before our readers some particulars which we collected, and the opinion we arrived at. This stone has been used for centuries in the neighbourhood, and was very favourably referred to by the commissioners for selecting stone for the New Houses of Parliament, who say in their report (1839), "Many buildings constructed of a material similar to the oolite of Ancaster, such as Newark and Grantham churches, and other edifices in various parts of Lincolnshire, have scarcely yielded to the effects of atmospheric influences;" and afterwards, in the table of quarries brought under their consideration, they mention as amongst the buildings in which Ancaster stone is used, Wollaton Hall, Belvoir Castle, and Belton House. Still it has never reached the London market, and we are not aware that there is any one building in the metropolis constructed of it. Before the completion of the Great Northern Railway to Grantham the cost of carriage rendered its introduction unlikely, but this objection is now very greatly lessened, and soon will be still more so. The price per foot cube at the quarry for small quantities is 8d. but if in large quantities, 6½d. It can be delivered in London, at King's Cross Railway Station, for 1s. 5d. per foot; and when the Sleaford branch is completed the cost will be less. At present the stone is carted to Grantham, and is then taken by the Great Northern to London for ¾d. per ton per mile.

In a paper read by Mr. C. H. Smith, at the Royal Institute of Architects, in May last, and published in our journal (p. 386), wherein that very competent authority expresses a highly favourable opinion of the Ancaster stone, its mineral characteristics are fully described. It is one of the oolitic series, and the principal constituent, as in the other oolites, Bath, Portland, Ketton, &c. is carbonate of lime. An analysis of two specimens from the quarries now open, and of a piece of old Ancaster stone from Sleaford Church, will be found in the paper referred to; and to this we will add the analysis, &c. of four oolites, as given in the Parliamentary report of 1839.*

Mr. Wilson's quarries are about six miles from Grantham, and on our road to these we passed a considerable number of buildings wherein the stone is used,—Manthorpe church and parsonage, built in 1847; the post-office, at Belton, 1838; the inn, 1839; the school here, about twenty years old; additions to Belton Church, in a shape of pinnacles, &c. put up about thirty years ago; and Syston Hall, of the same age; in none of which did we observe the least evidence of decay. At the parsonage the plinth is of Mansfield stone; those who know the Ancaster stone best, advising that it is safer to keep it off the ground.

We must here interpose a paragraph to admire the general effect of the buildings put up on this property of Lord Brownlow's—Belton. The Late Tudor and the Elizabethan characters prevail throughout, and some of the structures are individually very satisfactory. Others suggest what we afterwards found was the case, namely, that the architect had been superseded by a steward or a clerk of the works,—a regretful step which has been taken lately in several parts of the county. Most of the buildings are dated, a useful ornament, and some have inscriptions: thus on one, where a few old ladies are living, we see "*Piæ Senectæ domus;*" and on a gardener's lodge over a dial, "*Non numero horas nisi serenas.*"

In the front of the inn an old stone oriel from Grantham, dated 1470, has been introduced: the material of this is similar to Ancaster, and has stood well. Barkstone Church, partly Norman and partly Early English, with a later spire crocketed, is for the most part in a good state. Ancaster Church, partly Norman, but mainly of the fourteenth century, is very sound on the face.

The Commissioners of 1839 for selecting stone for the new Houses of Parliament, referred in their report to a point which ought, perhaps, to be kept in view when comparing buildings—namely, an advantage which buildings in the country appear to possess over those in populous and smoky towns, owing to the *lichens* with which they become covered in such situations, and which, when firmly established over their entire surface, seem to exercise a protective influence against the causes of decomposition. As an instance of the difference in degree of durability in the same material subjected to the effects of the atmosphere in town and country, they point to the frusta of columns and other blocks of stone quarried at the time of the erection of St. Paul's Cathedral, and now lying in the island of Portland. These are covered with lichens, and though they have been exposed to all the vicissitudes of a marine atmosphere for more than 150 years, exhibit their original form even to the marks of the chisel; "while the stone which was taken from the same quarries, (selected, no doubt, with equal, if not greater, care than the blocks alluded to), and placed in the cathedral itself, is, in those parts which are exposed to the south and south-west winds, found in some instances to be fast mouldering away." This, perhaps, was not altogether to be expected; because, it might have been argued, that as the lichens were calculated to retain a certain amount of moisture on the surface of the stone, a contrary effect would result from their presence.

Apart from the absence of this protective covering,—a vegetable epidermis, as it were,—the atmosphere of smoky and populous towns produces a different chemical action on stone to that of the country, and renders the stone liable to be more easily affected by agents acting mechanically, such as wind, rain, and frost. There seems no reason, however, for believing that Ancaster stone would suffer to a greater extent in proportion than any other so employed. It has been used very extensively in Nottingham, where it is exposed to such influences, and has stood well; here, moreover, its introduction has led to a better sort of architecture than before prevailed there. Mr. T. C. Hine, one of the principal architects in Nottingham, says that a fifteen years' trial has satisfied him that the stone may be safely recommended for general building purposes, staircases and pavements of course excepted. He says,—"I believe it to be a durable stone, and well adapted for all external purposes above the plinth; but as a general rule I would not recommend it to be used there, although I have found when laid on its natural bed that it stands better than many other stones even in this position." He has used it in columns supporting a wall some 40 feet high, but in such cases properly suggests that the joints should be truly worked and laid in mortar, not on lead pads. The stone is delivered in Nottingham at 1s. 3d. per foot cube.

Let us now look into Mr. Wilson's quarries. The stone lies under about 10 feet of clay and 3 or 4 feet of rag, which latter is removed by blasting; and then comes a depth of about 20 feet of good stone: below this it is too hard for use, and, according to the quarrymen's opinion, less to be depended on. It lies in beds varying from 6 inches to 20 inches in thickness, but chiefly about 12 inches thick. The joints vary very much in extent and direction, and the men cut the stone to meet these with a thin double pick, getting out blocks about 6 feet wide or more, of the lengths that may be required. One recently sent out was 14 feet long. Two openings, each 40 feet wide, and the whole depth of the stone, are now in work by "travellers," which raise the stone and load the carts with great ease and simplicity. Mr. Wilson is about to put up a third "traveller:" he will thus have 120 feet of face in work, and there appears to be every facility for further increasing the supply, should the demand increase. This, of course, is a matter of much importance to any one who might contemplate using it largely.

When first taken out of the quarry the stone is very soft, and the men axe the face easily. It is sawn dry at a cost of ¼d. or at most ¾d. per per foot, and, as may be seen therefore, is very cheaply worked,—at about the same cost, probably, as Bath, and about one-third than Portland. When in its place it hardens so rapidly that, according to some of the masons of whom we inquired, the cost of "cleaning down" a building faced with this stone is increased 25 per cent. if delayed twelve months. When in its place the stone should be laid on its natural bed; and if left in blocks during the winter, should be kept off the ground and covered, as indeed all the soft stones should be. As further materials for judging of its cost by our technical readers, we may mention, that in the locality the charge for "plain work" to it, including bed, is 7d. per foot superficial; for "sunk work," 9d.; and "moulded work," 1s. As to its weight, 14 feet cube are considered to be a ton at the quarry.

Amongst the buildings wherein this stone is used, erected within the last seven or eight years, may be mentioned a mansion for Mr. J. Banks Stanhope, M.P. near Boston, under Mr. W. Burn, architect, and another for Mr. Packe, in Leicestershire. The most extensive application of it, however, is at Harlaxton Manor, the seat of Mr. Gregory, where very extensive works have been going on during the last fourteen years. We were unable to see this building, but it is described to us as a very remarkable pile in the mixed style of James's reign, on which more than 100,000*l.* has been spent, and where, we are assured, the stone used on the earliest part, under the direction of Mr. Salvin, is as sound as that which they are putting in now. The savings' bank, built in 1841, by Mr. Collingwood, of Grantham, under Mr. Salvin, stands remarkably well; indeed, we could find no evidence of decay about it anywhere. It has a clever little front in the character which prevailed at the end of the sixteenth and beginning of the seventeenth century.

The ancient parish church at Grantham, the west front of which, including the tower and crocketed spire of surprising loftiness, is amongst the glories of mediæval art in England, is built of a similar stone, and is in a fair state. The large window on the south side of the tower was put up by Mr. Wilson, fifteen or twenty years ago, of Ancaster stone, and is now as sound and sharp as it was at first. The stone is being used

* OOLITES.

	Ancaster	Bathford	Portland	Ketton
Carbonate of Lime	96.0	91.52	98.20	96.57
Carbonate of Magnesia	2.80	3.59	1.20	1.10
Iron, Alumina	0.80	1.20	0.40	0.80
Water and Loss	0.71	1.78	1.20	1.83
Bitumen	A Trace	A Trace.	A Trace.	A Trace
Specific Gravities.				
Gritty Masses	2.182	1.839	2.145	2.045
Clay Particles	2.687	2.675	2.702	2.702
Absorbent Powers when saturated under the exhausted Receiver of an Air-pump.	0.180	0.322	0.208	0.244
Disintegration.				
Quantity of Matter disintegrated	Grs. 7.1	Grs. 14.0	Grs. 2.7	Grs. 3.3
Cohesive Powers.				
	33	21	30	36

to a very considerable extent at Mentmore, in extensive works now going on for Baron Rothschild.

We need not, however, further multiply instances of the successful use of this stone. It will doubtless be gathered from what we have already said that we have formed a very good opinion of Ancaster stone. It seems to us, indeed, one of the best of the soft stones, and we are disposed to hope that it will now be brought into the metropolis, and its use otherwise largely extended.

SCRATCHES ON THE ROAD TO AND IN VENICE.

My dear Builder,—When, in the language of one of the Gentlemen of Verona, I told you I was going

> "To see the wonders of the world abroad,"

you, in reply, emulating the wish of the other gentleman,

> "When thou, haply, seest
> Some rare noteworthy object in thy travel,"

requested me to communicate with you. But I am afraid I shall be unable to portray the mingled feelings of suspense, pleasure, and admiration that I have experienced. "It contributes," says Hawthorn, "greatly towards a man's moral and intellectual health to be brought into habits of companionship with individuals unlike himself, who care little for his pursuits, and whose sphere and abilities he must go out of himself to appreciate." And, indeed, from my experience, there is nothing like foreign travel to illustrate this principle, and fully to develope self-knowledge; more especially if the traveller should not be quite *au fait* with the language of the country he is in. Whether he be the first of his village or the hero of his circle, he will then, if at no other time, learn equality, and find how little partial fame or local greatness avails us in the wide world away from our own immediate influence. I think much of the annoyance that people suffer, and of which many so loudly complain, arises from the fact of their *amour propre* being offended by their being unable to wield that influence which is at home all paramount. In my journey to Paris I had an illustration. When the train stopped at Clermont, the occupants of the compartment in which I was were much amused to hear an American glorifying himself and his nation, as only his countrymen can do, and in so loud a voice that we could hear every word distinctly. When we arrived at Paris what a change in the man! He had the name of the hotel he wished to go to written on a piece of paper, that he might not make a mistake; not a word of French could he speak, and he was at the mercy of the bystanders for assistance. He got into the omnibus in which I was, and so great was his perturbation, that he gave the porter a piece of gold, which a lady sitting near the door observing, caused to be rectified. Another American then entered, and he exclaimed: "If it had not been for that lady I should have lost a two-and-a-*ha-af*." "What?" said the other. "Why, I gave the help a two-and-a-*ha-af* dollar piece, not knowing it." When we reached his hotel, we found it was full, and then he was in a fix. He ultimately got a bed at the Hôtel de Paris, where we will leave him. Before he gets back he will learn many lessons. But, *en route*, the next morning I started for Strasburg, and, in spite of Mr. Ruskin, was much charmed with the station. I am unromantic enough to prefer railway travelling to that of the diligence; and I could not, in spite of all that gentleman's rhapsodies, help feeling much more comfortable in the elegantly-finished *salle* than I did in the dirty hole in the Rue St Honoré, from which I started the last time I went the same road, and when the journey, which now is done in ten hours and three-quarters, occupied three nights and two days. It is true the capitals from which spring "the iron girders," are not truly classical, but are carved with ears of corn-grapes and other symbols of the country through which the line passes: but then we were not molested by a wretched set of beings who trade on the benevolent by the exposure of their squalor and deformities. As for "seeing the country," I am sure that, in a railway carriage, you have an advantage over the diligence, for if you found, by some miracle, when you took your place that you did not get the reply, "*Tous les coins sont retenus*," you would get so blinded with dust, that a view was quite impossible. With these feelings I arrive at Meaux, where, in a yard just by the station, was an old diligence falling to decay, and I could not restrain the feelings of pleasure with which I contemplated the triumph of the present over the past. But this was somewhat checked when I thought whose throne this place had been, and I wondered whether if Bossuet were alive now, his funeral sermon that he was called on so frequently to repeat would attract the concourse of persons that were wont to flock to hear him. Popular preaching is not on the decay in England, but how is it in France? But I do not intend to be speculative in my fancies, and so I shall here introduce a little bit of the practical. I observe that the locomotives on this line have very little brass about them. Now, is this done for economy, either of cost or time in keeping them in order? Some of your readers may be able to give a satisfactory explanation of this; but it strikes me that some of the shareholders in many of our impoverished railways would not care so much about appearance if they could get a small return for their enterprise. I took up a small guide that was in the carriage, and I read, as we passed Damery, near Epernay, that it was the place at which, in 1670, was born Adrienne Lecouvreur. Rachel's splendid delineation of that character is vividly impressed on my memory; and I could not help applying the remark that I found had been made on the former,—"*J'ai vu une reine parmi des comédiens.*" In the evening, at Strasburg, I took a walk round the town, and at the corner of the *Rue Marché au Vin* there had been what must be a great novelty in this place—a new house built. From every window was suspended a tricolor flag, and in that at the angle was a transparency bearing the following inscription:—

> Honneur à nos maîtres,
> Maugold et Oberholtz.
> Gloire au propriétaire, F. Klipfil.

Under this was a representation of the arms of Strasburg, argent a chevron rouge, surrounded by the square, the compass, and other masonic emblems. In an adjoining tavern there had been a supper given to the men and their wives, and when I passed they were joining in the mazy dance with that vigour—I will not say grace—that usually characterizes the French mechanic. With us a new house is not such a source of rejoicing, and our ceremony of "potting" rarely extends beyond a supply of beer and a few hurras from the roof.

I must confess that the effect produced on me by the exterior of the cathedral was not so great as when I saw it some few years since. I think the stairs, carried up at the four angles of the spire, take away much from its lightness. I think the finest view is obtained from the north-east, and this I had when the sun was setting, which produced an effect on the stone similar in effect to bronze. With the interior I was as much impressed as ever; but I do wish they would get another east window: every other one is filled with glass, but this is plain. The effect is very fine and artistic, making the principal light come from above the altar; but I should like it so much better if it was done with something besides small panes in common sashes. The sculptures that were destroyed at the time of the revolution have been replaced by others of great merit. Those of the old ones that remain possess such beauty that I should be glad to hear Professor Cockerell on this subject. The *commissionaire* who went over the cathedral with me was a type of his class: his principal statistics consisted in the number of women who had killed themselves by precipitating themselves from different parts of the edifice; hearing so much of this, I exclaimed, "They should have come to the church for life, and not for death." But his knowledge of English was, I doubt, too little to understand this, although he looked very wise. My enthusiasm was first really aroused at Basle, where I went to see the sketches of Holbein; all honour to "Murray" for pointing them out. They are exquisitely beautiful, and give one quite a different idea of his power and grace to what we receive from the pictures that sometimes we see in England, called, forsooth, Holbeins. I think many prejudices are perpetuated by opinions being formed of the old masters from copies perpetrated in Wardour-street, and which would not obtain for an instant on inspection of an authenticated original. At the cathedral here, the principle of restoration is active, and there are a great number of men at work in the interior, who have removed the seats that disfigured it, and others are to replace them more in accordance with the building. They continue to colour the interior a dirty red, to make the new work like the old, but I think the effect is not good. They have put new tiles on the roof in exact representation of the old, but they are "not pleasant to look on;" for being of bright colours put down in diamond patterns, it looks as if the church was covered with a glaring oil-cloth.

My journey to St. Gothard presented nothing of novelty; I could only again rejoice to see the vigour exhibited by my countrymen, and the cheerful and graceful determination displayed by my countrywomen in surmounting the difficulties and inconveniences attendant on the beauties and grandeur of Switzerland.

I would here make one remark in connection with a subject that sometimes occupies your columns,—that of church bells. There is one at Lucerne, the tone of which is exactly like that of St. Paul's. I was led to this by it having induced a dream of home, and when I awoke it was still tolling, and the illusion was very striking.

So much has been written about the pass of St. Gothard, that I pass on till we come to the *Lago Maggiore*. I embarked at Maggadino, and proceeded to the Isola Bella; upon which is a residence and a garden belonging to the Count Borromeo. It is very curious; and that is all that can be said about it. Having seen Chatsworth, I am spoiled for everything in this shape. On the Isola Madre there are many trees and shrubs of great interest; there is an aruncaria, the stem of which, I should think, is upwards of a foot in diameter. At this spot one has an impression of being in Italy, to which I must hurry away. Priests and monks begin to abound. On the lake I was struck with the costume of the former. Croaker, in "The Good-natured Man," says, "that life consists in nothing but buttoning and unbuttoning;" and I suppose they wish to impress upon themselves the force of this axiom, for on one of their robes I counted forty-five buttons down the front, with a corresponding number of button-holes. The monks have no buttons, which, I infer, is to show that they have no connection with this world. I expected, where I entered the Austrian territory, to find great difficulty; but such was not the case: the police-officer on board the steamboat *viséd* my passport; and at the custom-house there was very little search: they took away several of my books to submit to the censor; but they soon returned them, and I was allowed to proceed to Milan. The examination was very different at Venice; but this I shall describe hereafter.

How grand is the entrance to Milan by this road! What a glorious structure is the Arco della Pace! What a fine effect is produced by the broad open space of the Piazzi d'Armi! But, alas! the spirit that reigns within! We were detained at the gate some time, and our passports taken from us; and in lieu a receipt given us, which was printed in four languages—a notice that we must present ourselves within twenty-four hours at the police-office, or hold ourselves responsible for the consequences. I was much delighted with Milan; but this feeling was mingled with great depression, for I seemed as though I were visiting at some great and distinguished palace, upon which trouble had fallen; that amidst the friendships of art there was a secret sorrow at the core. If ever it has been your lot to visit a house upon which sorrow has alighted, and inste d of the cordial welcome of the host you have been met with the scowl of "the man in possession," you will understand my impression on surveying the monuments of Italy's genius, under the protection of the *paternal* Austrian rule. Soldiers, soldiers, cut-throat-looking soldiers!

erywhere. Of course, the first object of my dmiration was the cathedral. It would not ecome me to enter into a detailed description f it. But no one who has never left England n understand what the effect of architecture , seen under a southern sky. Here every innacle, every incision, every point of decora- on and ornament is so clearly visible, that hile the effect of grandeur remains the same, very point of detached beauty is clearly ap- arent. There is not a niche or a sanctuary hat does not possess a statue that, taken by iself, would deserve an essay as illustrating the eautiful: take, for instance, Canova's small tatue of Rebecca; and when you take into onsideration that there are upwards of 3,000 f these, you will perhaps be able to form some otion of its riches. That which produces the ost fairy like effect is the roof, which, being of hite marble, in very large slabs, like the rest of he church, makes the whole very harmonious: ut I am sorry to say that the result is arrived t by a sacrifice to the interior, as it is found difficult to make it impervious to the wet, and he nave and north aisle have much suffered rom the percolation. Many statues are by modern artists, Marachesi Monti, of Ravenna, nd Raffaelle Monti, who produced the veiled figures in the Exhibition. Although this novelty, as it was then considered, was introduced by him, there are many samples of the same thing long before his time. There is a corbel of a female head thus represented on the west end of the cathedral; and at the *Manfrini* Palace at Venice, there is a statue with the same addition by Antonio Coradini. It may be as well, perhaps, to inform such of your readers who, regardless of the canons of high art, were in rapture with these statues, that the effect is produced by putting a wet handkerchief or cloth over the model, and then copying the folds.

The Brera or picture-gallery occupied a considerable share of my time. It is here that Luini's frescoes are to be seen, and cannot but be seen with pleasure. Here is also Raffaelle's great picture of the "Marriage of the Virgin," full of grace and gentleness. Its popularity may be inferred from the numbers of copies that are made, and for sale, but these are very judiciously placed in rooms away from the original. The Ambrosian library is overflowing with riches, among which I was delighted with the sketches of Raffaelle, Albert Durer, and Leonardo da Vinci: there is the famous book of the latter containing his mechanical drawings, but only one page is visible, it being under a glass case. Surely for the student there is more in the illustrations than the book, and would it not be better to have them taken out and framed so that all could be seen? The churches possess an endless source of interest from their antiquity, their variety, and their illustration. Of Leonardo's "Last Supper," I will only say that I saw it, which will not be in the power of every one to say in a few years. I obtained permission from the Police to visit Como, and return to Milan. It is an easy journey, by railway, of thirty miles, and going and returning I had to show my passport six times. Here is a monument erected to Volta, but my fanciful nature saw a much greater tribute raised to him in 1853—viz. poles and wires, by the aid of which his discovery is made to aid thought with the lightning's speed. From Milan, having obtained permission, I proceeded to Verona, which has more the impress of hoar antiquity than Milan.

The railway from Treviglio to Verona is not yet complete, so this portion has still to be performed by diligence. Why the delay is I cannot comprehend, as there is not the slightest difficulty except near the *Lago di Garda*, where they have had to build a viaduct. It is of brick, with granite dressings, and composed of pointed arches, with circular openings in the spandrils: the effect is very good. The bricks in Italy, both ancient and modern, are very thin: is there any practical reason for this? While on this subject, I think I have made a discovery which will relieve me of much anxiety: it is a chimney that will, I hope, prevent those unsightly, long, crooked, angular, cowled additions to our roofs that destroy all our domestic architecture. By the way, there is one of these outrageous additions just inserted in the roof of the Houses of Parliament, just under the clock-tower. I got the idea at the Duke of Melzi's palace on the Lake of Como; it consists of a small circular chimney built of moulded bricks, surmounted with a gracefully-formed crest above the openings for the emission of the smoke. As these can be built in any direction, carried up any height, to meet all requirements, I see no reason why it should not be adopted in England, where *villa* residences are so numerous; since then, I have seen so many, variously decorated, especially at Murano, that I wonder it has not attracted more attention. At Verona I stayed a long time in the Arena, rejoicing to see how well it had been preserved. Here also the churches are of absorbing interest; I was much struck with St. Zerone, evidently that which gave the idea for the church at Wilton, near Salisbury. The gardens here contain some very extraordinary Cyprus-trees: they show one which is 126 feet high, and which they say is 1215 years old, from records preserved of it.

My next halting-place was Padua; and here my enthusiasm was excited by Giotto's frescoes. Now don't suppose that I am going to rush into a state of P. R. B rapture; but I cannot conceal my intense admiration of these. They consist of the Life of the Virgin Mary, and that of our Lord, and I never saw the head of the latter drawn with greater grandeur, dignity, and gentleness combined. I think, with frescoes as with sketches, there is often more force than in the most elaborate paintings of the same hand. I have observed in the Manfrini gallery there is a picture by Giotto, which is not nearly so effective. Perhaps something is due to "restorers and cleaners" for this diminution of power. I think there is something exceedingly romantic about the story of Giotto: born in 1276, of poor parents, in progress of time he became a shepherd, and when in the fields he used to amuse himself by drawing his sheep. Cimabue lent him his aid, and Dante fostered his truly divine genius. In those days there were no academies, and every aspirant had to make the road to fame for himself, and this Giotto did in a way that, after 500 years, numbers, far more able judges than myself, unite in admiration of that genius the productions of which are happily preserved to us. His life would make a worthy subject for the poet or the painter.

I now make my entry into Venice. From the railway train I was ushered into the bureau of the police, where my passport was taken, and I had to reply to such questions as—where I was born, by what route I had come, my motive for being there, how long I was going to stay, whether my first visit. Having answered these questions satisfactorily, I was passed into the luggage department, where every niche and corner of my portmanteau were inspected: as I was perfectly conscious of having nothing either contraband or revolutionary, I did not care about this. There were two officers and a soldier to perform this operation. The first thing they did was to seize all the books; they seem to have as great a horror of these as a *cafet de place* has of "Murray," I suppose because they expect, for the same reason, that a great circulation will cause "their occupation to be gone." The second officer took up a small book that I did not know I had left in my bag, and referring to his superior, said, with an inquiring look—"*Ti say tabblay.*" Now this was a small brochure published by the South-eastern Railway Company, price one penny. No, said the first officer, "*Tim tabblay*;" and it was allowed to pass. I had a foreign "Bradshaw," which had lost its covers in the transit: it was opened and looked at with a wondering gaze, and passed in silence. Every book went through the same scrutiny: a small work on Gothic Architecture excited some doubt, as I question whether they did not take some of the engravings for drawings of implements of war and revolution. My writing-case was opened, and every paper scrutinized; fortunately I had no tender epistle there, -but I should not say this, as they would not have understood so alien a sentiment. My letter of credit seemed to awaken in them feelings of wondrous envy, and was put back with feelings of some hesitancy. While this was proceeding, the soldier was investigating every article of apparel. His face beamed with satisfaction when he clutched a small packet, which he ruthlessly tore open; but I never saw such a revulsion of feeling in any one's countenance, and he put it back, shrinking from it with evident disgust: it was soap! When this was over, the first officer said something, to which I replied "*Non capisco*;" which was the fact. Whether he meant to tell me that all this might have been avoided by the payment of a few zwanzigers, I know not, but we both took off our hats and bowed, and I left him with the proud consciousness of having done his duty, and consoled myself with the calm satisfaction that I had not attempted, by a vile bribe, to suborn what Schwarzenberg called Haynau—"An old and faithful servant of his Majesty." I had to go to the police the next day to procure a *carta di permanenza*, which is necessary if you stop more than three days, and for this permission you have to pay at the rate of six zwanzigers a week; but I paid this sum cheerfully, glad to throw my mite into the treasury, as some of my friends hold Austrian bonds, and the prospect of improvement in the revenue seems very slight in a country where there are 100,000 soldiers to keep the people in a state of abject indolence.

I must confess that my first impression of Venice was that of disappointment: I ought to have known better, as he who has described it so well, has said—

"Her palaces are crumbling to the shore."

But I, like many others, had always entertained such a romantic notion about Venice, that when I saw, instead of white marble shining in the sun, buildings darkened by age and dilapidated by time, it was not what I had anticipated. Gondoliers, like cabmen, will take "short cuts;" and when I was taken down some of the small canals teeming with all the refuse of the houses, which everywhere displayed proof of their decay by the stucco peeling off, and the carious bricks, I was fairly disenchanted. But I have repented of this since I have become acquainted with the wealth and beauty of art that the city contains. St. Mark's is truly and gorgeously described by Mr. Ruskin; I have read it here several times, and have lent it to several of my countrymen, who willingly bear tribute to its fidelity, and I am glad to offer this testimony to his power, although in so many points I disagree with him, for instance, in Murano. Although I was not disappointed at Torcello, I cannot assent to all his propositions.

Every day that I have spent here has increased my admiration; every new church, every palace, has made me acquainted with new beauties; every hour of the day has shown me how the sun can vary the picturesque splendour of the city; so has man taken advantage of the sun's power to render permanent, by *his* pictures, such as I have never seen elsewhere, all that is historically or artistically interesting or treasureable for its beauty.

There is a novelty in Venice this year, and that is, the monument that has been raised to Titian in the church of Sta Maria Gloriosa de Fiori, where he was buried. It was erected at the expense of Ferdinand, and is the joint production of Luigi Zandomenichi and Pietro Zandomenichi, his son. It occupies the entire breadth of the aisle on the south, immediately opposite the monument of Canova; it rises from the nave with three steps. It consists of a high double plinth, four columns on pedestals, entablature, and attic. The centre intercolumniation is arched, and within this is seated Titian, having on one side a figure representing Genius, and on the other Strength. Immediately behind him, on the backing of the monument, is a bassorilievo, exceedingly well executed, of his great picture of the "Assumption of the Virgin," which is in the Academy here. To the right of this is another of the "Martyrdom of St. Lawrence," which is in the Jesuits' Church; to the left another of that magnificent picture of Peter Martyr, in the church of San Giovanni e Paolo; above are two other bassi-rilievi,—that on the right representing his first work, the "Visitation of St. Elizabeth," which is now at Dresden, and on the left, his last picture, the "Descent from the Cross," which is in the Academy. On each side of Titian are two female figures represent-

ing Design, Painting, Architecture, and Sculpture. In the upper part are two winged figures holding a tablet, with the inscription —"*Titiano. Ferdinandus I.* 1852." On the corner of the plinth to the lett is an aged figure holding a tablet upon which is the following legend –"*Eques et Comes Titianus sit. Carolus V. MDLIII.*:" and on the left a younger figure, upon whose tablet, there is, "*Titiano monumentum erectum sit. Ferdinandus I. MDCCCXXXIX.*" The whole is surmounted by the Venetian lion holding a scutcheon with the arms of Ferdinand It is said to have cost that monarch 200,000 florins: but you see he has taken great care to "mark the marble with his name." It is composed entirely of marble; but the figures are of that sort called statuary, which, from its whiteness, produces a striking effect from the contrast with the other, besides, it leaves the bassi-rilievi unconfused. The figure of Titian is very good, the head full of genius and dignity. I do not so well like the figures of the Sister Arts, as they are not sufficiently exalted in expression to illustrate the divine afflatus which inspires them. On the whole it is a fine production, and a good illustration of the power of modern art. I have procured the enclosed drawing, which will give you an exact representation. To-morrow I leave for Vienna; and if you think I have not said enough about this place, it is because already so much has been so much better said; but the impression made on me is deep and lasting; and if I compare home with what I have seen here, I am not desponding. You have recently said that "England is still a young country," and this I firmly believe. If here they began with the exaltation of art, they have ended in the degradation of humanity. With us we have begun by consolidating our independence, and art will well develop with us in adorning our freedom; and if we cannot produce such monuments of genius as here one meets at every step, we can at least point to our progress as thinking beings, and we can proudly refer to our position in the family of nations, as illustrating the fact, that our mission in the world has not been neglected or rendered futile.

F. S. A.

ON FENESTRATION IN ANGLO-CLASSIC ARCHITECTURE.*

With regard to form† and design, our windows have been too monotonously treated. While there is scope for almost infinite variety, we see the same compositions applied to buildings that have scarce anything else in common.

The form of window-case used in Rome or Florence, though it has claims upon our reverence, bearing as it does the marks of classic and Italian genius, is not our model: it is but a method, and we must, however instructed by it, have our own method, founded in reason, and adapted to, or formed upon, circumstances; remembering always that originality is not to be sought for its own sake; that a thing may be very original and very ugly. Originality will naturally follow the free exercise of our powers, which besides having ever-varying circumstances to work upon, have a principle of growth in themselves. With our motives and the elements at our command, we need not be indebted to Italy for a window-frame: we have ample scope for the production of new and beautiful forms, and wide field for expressive decoration.

I believe with jambs, lintels, arches, architraves, cornices, pediments, of different forms and proportions, balconies, and what may be derived from the resources of rustication, the Anglo-classic window is susceptible of endless novelty and growth in beauty. Some of these elements have been as yet but little developed here. The arch and archivolt, for example, are capable of more varied modes of construction and ornamentation than hitherto exhibited, and of the reception of new life and beauty and significance from the further application of the beautiful classic elements, modillions, dentils, &c. to their embellishment. In the balcony alone, often a useful feature, and but little developed in this country, we have an object on which design may be endlessly exercised; a feature, whether executed in iron or stone, susceptible of the most exquisite grace and variety of outline, as well as of richness of decoration.

But what should most characterise our architecture externally, is the increased and full development of the protective members as cornice and pediment –the evidence of the utmost shelter from weather consistent with non-obstruction of light.

This reference to weather must ever distinguish our architecture of whatever style. To meet it our cornices should not only be kept broad, but placed near to the soffit or window-head. The cornice may very properly rest upon the architrave without the intervention of frieze; for which arrangement, were it needful, there is ancient authority. The architrave is there another name for lintel, and is used as such, but the frieze has no meaning, and may therefore be dispensed with. This arrangement, with increased projection of cornice, not only gives due expression of protection, but the increased projection of cornice yields bolder shadows, and more fully developes the truss or console. The console, a beautiful feature in itself, only requires to be engaged in a real indispensable office—to support a feature that needs and is worthy of its support, to render it captivating to all eyes; such treatment would call it into new life and beauty, and procure it a different reception to what it now receives, coming as it does from the hands of men who merely use it as an ornament because it has been used before, ignorant of its right use, and untouched by its beauty.

A point too little regarded generally in Classic and Italian windows is the reveals. In reveals there is almost entire absence of unity and harmony between the sash, of whatever kind, and its case or frame That perfect unity is attainable in this matter we have only to look at the Gothic window to be convinced. There, the decorations of the jamb being all confined to the reveals, and placed within the outer plane of the wall, secure the most intimate union between it (the jamb) and the window proper And while the shafts or curvilinear forms produce a beautiful alternation of light and shade, the general splay admits the greatest quantity of light, of which light-admitting purpose it is unmistakeably expressive.

The tendency of the present Classic and Italian treatment generally is to make the window a sudden gap or void—an abrupt interruption to the mural expanse; that of the Gothic to make it, by the general splay of the jambs, a traceried and glazed niche—an ornamented cavity in the wall. Than the Gothic window when not interrupted or visually mutilated by wall buttresses, nothing is better calculated for the production of breadth and repose. The Gothic window is *mural*; the wall is not interrupted or cut away, but is itself wove, as it were, into fenestration. I do not see why this principle, though not recognized in Italian architecture, cannot be kept in view in Anglo-classic.

Need it be said that a shop-window requires just the same features as any other window. Jambs, and lintels, and cornice for protection from the weather; all its beauty must arise from the decoration, the artistic refinement, and elevation of these necessary features. The only difference is that its width, seldom taken advantage of, gives more than usual opportunity for elegant columnar and geometrical division and ornamentation.

I have in a former paper* on Fenestration dwelt on the importance, in window decoration, of the truthful correspondence between the exterior and interior of a building. This is a point frequently neglected; for how often is the p cipal front of an edifice, which indicates ex nally, by the character of its windows, a suit reception-rooms for company, cut up wit into small secondary ones! Such things, w discovered, are really disagreeable to the righ constructed mind, productive of feelings a logous to those we experience upon the det tion of hypocrisy in some venerated frie The window is the eye of the building, throu which much of its interior character and bea should look out; and a building should be planned that the windows could be decora artistically (or with propriety as regards general composition of the façade) in accorda with their actual place and importance in building. And in the decoration of windows the same internal rank there should be no su unmeaning favouritism as dressing alterna ones only in the same floor. Neither shou the practice be resorted to of highly decorati the windows of a principal floor, and leaving t others entirely naked, like hanging up fram and unframed pictures on the same wall.

Dressings of some kind to all the windows a building I consider essential to true architec tural character.* Yet it is astonishing ho many buildings, where architectural characte has evidently been aimed at, are without windo dressings; and the astonishment becom greater when we consider the comparati smallness of expense that would, in most i stances, have redeemed them. In many a cost brick town house or villa, where perhaps o window over the entrance-door is appropriate dressed, how small compared with the increas of beauty and consequent value of the buildin would have been the additional outlay fo architrave-jambs round all.

But the greatest mistake in reference to th window, and one on which I dwelt at som length in the Paper before alluded to, is th non-decoration even in the most costly build ings, and where the richest dressings ar employed, of the sash or window proper itself Artistic genius has hovered around, but neve alighted on the actual window. While th Gothic window, in its brighter forms, is a mesh from the most beautiful web-work of art—th prime, if not the sole object of decoration where imagination and feeling have spent thei fires, within the Classic jambs the beautiful i altogether unrecognised. The modern Italian and Anglo-classic window is an artistic nonentity barbarism, deformity itself; and the rich antiqu dressings are employed to embellish or enclose a hole. Who can look on these so different "pictures" without mourning the beauty that might have been attracted to the sphere of classical design in its course of modern develop ment? What renders this the more to be re gretted, is the fact that the window belongs both to inside and outside; that it is a feature of the drawing-room and banquet-hall, as well as of the exterior façade, and the natural link uniting the exterior to the interior beauty, of which latter it is the index. And as to the in terior itself, what avails mural and ceiling deco ration, if the graceful and symmetrical are con temned, and deformity is suffered to run riot in the window?

It is impossible that a window with two or three straight divisions—mere rods or threads drawn across the void—can harmonise with the surfaces and masses of the circumjacent masonry; nor is it much better when there are no divisions at all, but one piece of glass: a window so formed must look simply like a hole—a polished nonentity. Plate-glass has increased but little the beauty of our architecture: it is a beautiful material in itself, but it has been misapplied; we have not yet learned its right use. Whatever glass we employ, we must have broad vertical and horizontal divisions to unite the window in composition with the jambs as recipients of light and shadow. This in important buildings would be as admissible as in the Gothic. It is of no use to object to it on the ground of its lessening the light, for this could be provided against by making the opening larger. It would be a vehicle of new beauty—a field, and a fruitful

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* See p. 537, *ante*.

† Curvature has very properly gained extended use in fenestration; but there is now danger of the straight head losing its rightful ground, so much indiscriminate abuse has been heaped on it. The adoption of straight coverings to arch ires since the invention of the arch has been denounced as barbarous. Now if we must be granted we do wrong. But surely we are not wrong in using the lintel because we know of the arch. Our having ability to produce a curve lintel, for it is a lintel after all of a new form, is no reason why we should banish the straight one. The arch may not always suit our purpose. Earl even times may some times lead us to use the square, which is expressive of greater power and grandeur. We are under obligations to the inventors of the arch, but a lintel is still a useful thing, and in many cases prefer able. Neither do I see why, in a vaulted building, lintels should be dispensed with, and ar hes adopted merely for the sake of constructive unity A new invention, is not always to be applied to the entire superseding of old methods. Much outcry has been made of late against the straight-headed openings to windows and doors in the ground of their insecurity. To this I would only say that architecture as the art and science of building, must have sunk low indeed if with abundance of wood and iron and stone at its command it cannot securely lintel an opening of 3 or 4 feet wide.

* Vide *Builder*, vol. viii. page 470.

* It is demanded by a natural instinct, if we may so interpret a practice in some parts of this island, where, in the absence of real ones, the peasantry please themselves with *painted* jambs or arches round their windows.

le for design, the occupation of which would nder the window capable of harmonious union th Classic features generally; for it is the ck of moulded divisions to produce light and ade, and break up the general gap or opening, at is the cause of its being objected to in e background of a colonnade, or other situa- ns associated with Classic elements.*

Let it not be thought that I am claiming too uch importance for my subject: the window ars striking analogy to the eye in animals, and is as important to beauty in a building as that ature in the human countenance through hich the soul most vividly beams forth;—herein we read the noble and cultivated under- anding and the heart of sensibility, and which ndles up the face divine into light and life. ike the eye, it is the only part capable of a rying expression: the rest of the façade, like e form of the face is *fixed;* but the window ceives from the sky and atmosphere effects nalogous to the revealings of emotion in the uman eye, and thus, as it were, spiritualizes e aspect of the building. The most rapid anges of an April heaven are reflected in the indow, the cornice or water-table of which, ith its ever-varying shadow, so assistant to the xpression, may be compared to the eyebrow.

To the window we have not only the means of ving beauty of form, we have resources in olour. On this head, however, I shall content yself with remarking that geometrical form, hich admits of every conceivable arrangement compliance with the laws of colour, is all that hould be applied in the painting of windows. he proper object of glass painting, as I re- arked in a former paper on the Decoration of t. Paul's Cathedral,† is the embodiment of the ories and harmonies of colour,—the admission f the light as through pearls and gems of all ues, not through the opaque body of humanity. o employ this rich co-mingling of light and colour n the representation of human or any other living rms is absurd. But restricted to its legitimate bject, glass painting is sufficient for inconceiv- ble and inexhaustible beauty, and with other ources not yet drawn upon, awaits the invoca- on of genius in behalf of the Anglo-classic win- ow, a feature which yet slumbers in embryo, a erm of beauty to be called by art into the ful- ess of life.

Neither the forms nor the colours which ompose our windows, nor any others of the tyle need be dead, nor inconsistent, nor mean- ngless—epithets which Mr. Ruskin most un- arrantably and presumptuously applies to our rchitectural elements of Classic derivation. The reek and Roman styles I consider as capable f adopting new ideas, and forming themselves pon new and changing purposes and require- ents, as the style he so passionately and un- easoningly advocates. There is scarcely a prin- iple of beauty that guided the Byzantine and othic builders which these styles also are not apable of embodying. That sense of proportion nd gradation, for instance, which arranged the asses and centralized the ornamentation of the açades of the earlier palaces of Venice, what is here to prevent its being exercised on those of he Classic, if desirable?

Nor need the professors of the latter style est in the conventional foliage of the Greek and Roman ornaments; they may put living and true ature into it, and exercise as much play of ancy in the artistic rendering of the forest eaves and grass and flowers of the field as in the othic itself.

In short, it awaits but an infusion into our rchitects of the spirit, at once artistic and free, he fire and the energy that animated the Gothic uilders, their "healthy love of change," to use is own words, to make it vie with that style n life, and a freshness and grace, and the entire anifestation of the profoundest sympathy with he beauty and fulness of the material creation.

The window being a feature of the interior as well as of the exterior, the subject of drapery laims a passing notice. Draperies should be so disposed as to hang within the embrasure or general recess of the window, thereby leaving the architectural dressings to show themselves at all times, unhidden by a shapeless curtain cornice, the design of the upholsterer. The cornice crowning the drapery should be that of the window dressings; and where the necessity for an internal shutter renders this impossible, I should think it best to dispense with drapery, and be content with blinds, which may be finished with an ornamental valence. Drapery, as an inferior element of decoration, must give place to architectural forms, and never be suffered to obscure or mar their beauty.

The mention of the internal shutters reminds me of the almost universally-banished external one. The exterior shutter, so really useful in exposed aspects, as protection from storm, and so expressive of nightly security, particularly in rural situations, I consider no less deserving of recognition as an architectural feature than the door or chimney. Certainly it merits treatment different to what it now receives. It is deemed, I am aware, an eyesore, but need it be such?

Samuel Huggins.

* Nor is there any reason arising out of the nature or purpose of the window why these divisions may not, where economy is called for, be of wood or iron; materials which may be wrought into severe architecture as well as stone. There is a unity and beauty in carrying the material of the wall or jamb into the construction of the window, as in using stone is the case; but stone is not essential to true architecture, which is not confined to one building material, or class of building materials.

† Vide *Builder*, p. 18, *ante*.

LOOSES OF LONDON.

LEICESTER-SQUARE.

In the ancient city, with its narrow defiles and compacted population, citizens were tolerably well off for open spaces: the half million of Charles's day had their Temple-gardens, *intra muros;* a little beyond, Lincoln's-inn-fields; the Green-park, with its mall; and other sundry places of sylvan reunion, then within easy walk: those suburbs which are now densely covered with streets, the village of Charing and St. Martin-in-the-fields, Hackney, and Brompton were more rural than Willesden, Hornsey, or Epping are now, and the toiling mechanic or plodding shopkeeper could avail himself of exercise and pure air on a summer evening, when business commenced and ended at rational hours, even before the early closing system was thought of.

The Green-park still wears its verdant aspect; the Temple-gardens yet harbour a few elms and limes, with dingy foliage; a misguided thrush may sometimes attempt a faint warble in Bloomsbury-square; but alas! for the smoke, all sensation of enlargement is impossible, for towering piles of brick and plaster circumscribe the view; and to enjoy "the wild bliss of nature," we must not hire a hackney-coach, but take the train, and bolt fairly on to Reigate or Dorking, for palpable enlargement and the breath of heaven. Perhaps there are other elevations less distant which are beautiful. Yes, Hampstead is beautiful; the walk thence (from the Spaniards) to Highgate is still lovely, in spite of modern innovations. Epping, Hainhault, Chiselhurst, Harrow, these heights are not altogether Gothicized by civic taste in architecture. Sydenham, in spite of it, may survive a little while; and Richmond-park is, as it always has been, without a rival for fascinating loveliness in landscape; but to inhale the heathery breeze we must go at least to Box-hill or Ranmer-downs—those gates of the Chilterns; or yet a little farther, to Leith-hill; there both "heaven and earth are telling;" and the prospect offers a perfect panorama, discovering on the north, St. Paul's, Epping, and Shooter's-hill; on the south, Beachy Head, the Needles, and Portsdown, with a vista of ocean through Shoreham Gap; and on the west, it dissolves amongst the many-tinted hills of Berks and Hants. This is the only panorama of great extent within forty miles of Charing-cross, and yet in certain conditions of the atmosphere, the universal volume of London smoke rolls on, and lingers over its centre—for the London particular article is here unmistakeable—you may taste it, it smacks of the Poultry and the New Cut. At the same time, the suburban quarters, *from* which the wind blows, are always tolerably clear at a circuit of about four miles from the Temple gate; then the mantle of fog invests the ranges *to leeward*, while the fresh country breeze again revives the stricken parterres and soot-begrimed trees with a fitful ventilation.

Under such contingencies it is imperatively necessary to reserve open spaces in all new quarters of the town. In this respect Belgravia is well laid out, and the rising district of Brompton has the certitude of great immunities from the proposed National Gardens and Exhibitions—the latter has the especial advantage of fine shrubs and noble trees, which both freshen and beautify that locality—but it is of no less importance to preserve and scrupulously guard the old squares, places, and houses of London.

How painful is it to look upon the neglected state of Red Lion-square? and there are other iron-bound, and desert, though central gardens, which reflect no more credit on the surrounding occupants. In the very midst of the congested metropolis, Leicester-square has been spoliated and delivered over to speculative thrift! An exhibition has blotted out the site "where once a garden smiled," and now a new project is set on foot to extinguish for ever this small air-cell, which may be thought to have some communicating duct (subterraneous or other—some descending flue) in connection with Lincoln's-inn-fields, and Smithfield—the auricle and ventricle of London's lungs! It is proposed gravely to purchase Leicester-square, to found upon it a second Colosseum! A giant structure, to be called the *Cosmos Institute*, a metropolitan university for newspaper reading and geographical lecture; a congregational theatre for the transfusion of arts, sciences, polemics, and politics; and this scheme is uttered in serious form, dressed for the market, and offered to gaping adventurers by the advertising prints of the day. Truly there must be a dearth of industrial resources whereupon to employ capital. But of course the Atlantean Cosmos will be built tier upon tier; each story to cover the square (or rhomboid, or whatever it may be), each story to tell upon and afford room for a whole class of the population, and the attic or upper one to overtop the very spacious and pleasing Saracenic building lately raised on the legitimate foundation of the street line, and to nod a response to the National Crystal Palace at Sydenham!

The recent experiment of turning the world outside in has stood for a time, much to the annoyance of vicinal householders. Will the residents suffer their square to be turned inside out, their daylight to be obscured, their atmosphere vitiated, and their causeway impeded by the realisation of a conceit which can bring credit to no one, and profit only to the stock-brokers?

The illustrious Dargan, "the man whom the Queen delighteth to honour," will now have imitators—humble imitators, and at a long distance. Let them raise athenæums, gymnasiums, or forums, if they prefer it, by *public companies*, but let them take a hint from the royal founder of the National Institution, proposed at Kensington Gore, so that no more obstacles shall be obtruded upon our already too crowded metropolis.

Quondam.

CAST-IRON LIGHTHOUSE FOR THE FALKLAND ISLANDS.

On Friday in last week, the Messrs. Grissell, on their premises, the Regent's Canal Iron Works, exhibited in operation a lighthouse they have just completed by order of the Admiralty Commissioners, prior to removal to its place of destination. The shell of the tower, constructed of 1in. concentric plates with 4 in. flanges drilled at 6 in. intervals to admit 7-8th in. bolts, is in form a frustrum of a cone 47 ft. in height to the balcony floor, with a diameter at the base of 14 ft., at the top 9 ft. Up the centre of the tower an iron column is fixed to take the weight of the lightning apparatus—a catoptric system of the second class, the manufacture of Messrs. Wilkins, of Long Acre—and on this column are cast pockets to receive the T iron joists, supporting the two wrought floors; the third and topmost floor, secured by the same means, with the additional assistance of cast ornamental brackets, being allowed to project some 3 ft. beyond the outer edge of the structure, with a 4 in. flange, forms a circular abacus 15 ft. in diameter as a capital to the tower, and on this rests the octagonal lantern, ventilation being by means of the vane. The total height of the erection is about 67 ft. The weight of tower and lantern is nearly 50 tons.



CHILTHORN DORMER CHURCH.



PEWING.



PISCINA.

THE CHURCH AT CHILTHORN DORMER.

The accompanying view represents the church at Chilthorn Dormer, in Somersetshire: below we give the pewing with which the church is seated and a curious piscina projecting from the splayed western angle of north pier of chancel arch. The incision in the piscina shows where the stone roodscreen used to be, portions of which are still remaining. In the north wall of chancel, in a low recess, is an effigy of a Crusader.

At the neighbouring church of Brympton, there is a bell-turret exactly the same, even to the details, as that shown in the engraving. The church consists of chancel, nave, north and south transepts, chapel, and south porch. Restorations have been going on here for some time past, under Mr. Shout, architect, of Yeovil. Besides other works, the stone roodscreen has been restored: new seats throughout, of oak, have been put up, and a stained glass window at east end of chancel. The ancient carved figures, including a Crusader and his lady, should no longer be allowed to spoil in the churchyard, but should be again taken into the church, whence they came.

PROGRESS OF THE BUILDING OF COLOGNE CATHEDRAL.

At the annual meeting of the building-committee the president reported the progress of this undertaking. "The north and south portals are now arched over, and the walls of the longitudinal and transversal nave nearly completed up to the cornice. Yet another year, and the roof will project over the high nave, the inner temporary partition wall at the entrance of the high choir will disappear, and the cathedral will be *completed* outwardly, with the exception of the steeple and the flying buttresses, the interior, with the exception of the vaulting of

the high nave." The architect, M. *Zwirner*, completed this statement in the following way:—"The progress of the building in 1852 has been more apparent than that of any other previous year, as the many rather hidden parts between the high choir and the steeple required great labour, and could not but successively be raised to that height, which admitted of their being combined. These we see now—mighty spanning buttresses (*Gurtbogen*) brought over the rich and delicately worked windows, of pointed arch form, of the longitudinal nave—and in a few months more the spans above them up to the cornice, on which the roof has to rest, will be completed. In the two lateral wings, however, the progress could not keep pace with that made with the longitudinal nave. On the south side, it was not financial causes which prevented this, as here nothing was required but to build up the stones for the windows and arches already dressed: it was technical considerations which lay in the way. The east side of the transversal nave is partly formed by the old walls at both sides of the high choir, which hitherto stood quite isolated, and were so much exposed to the influence of the atmosphere, that so long since as the years 1790 and 1792 additional structures were erected for their support. At that time, however, the reconstruction of the damaged parts was not thought of, on the contrary, they were rudely broken away and replaced by coarse courses of brick, which, on the north side, were visible so late as even the last year. On the south side they had been already removed, in 1829, at the restoring of the high choir, and the two new window-casements have been erected, by which the solidity of the very high lateral wall became somewhat secured. But, as at that time the hope of a complete restoration was not yet entertained, the laying of the foundation of the vaults had been omitted, which had now to be added at the expense of much labour and trouble. On the west side of the cathedral the great portal has been arched over with the richly ornamented porch, and the arch of the lateral entrance on the north side is now in progress of erection. Our chief activity now shall be, however, directed towards the continuation of the restoration of the principal and the transversal nave of the building, with the hope that during the current year here also the level of the roof will have been reached." According to the accounts laid before the meeting, the sum of 347,789 thalers have been expended since the year 1843, in the restoration of this largest of German cathedrals—a sum not small in Germany, and which, with the exception of the munificence of the king and government of Prussia, has been mostly raised by private contributions.

AN ARTESIAN WELL IN AMERICA.

At the annual meeting of the American Scientific Association recently held at Cleveland, Ohio, an account was read of an artesian well commenced in 1848 at Charleston, under the authority of the city council. It has been conducted under the direction of Mr. Welton, and has attained the depth of 1,145 feet.

Mr. Welton has had to chisel his way through not less than fifty-four rocks, varying from 10 feet to 2 feet in thickness, and amounting in the aggregate to about 250 feet. Cast-iron tubes, of 6 feet internal diameter, were at first sunk 80 feet, to exclude the superficial and the post-pleiocene sands. But as these succeeded in gradually working their way downwards, passing under the mouth of the tube, and into the well, the tubes were sunk deeper at various times, until finally they rested firmly on a thick rock 230 feet deep.

Below this point the alternations continued; and generally underneath a large and hard rock a bed of loose sand was found, which poured into the well. Such a bed the engineer first strove to exhaust; that is, to draw out with a bucket all the sand that would run in and impede the work. By this operation, repeated at various points, the well finally consisted of a series of chambers, some, perhaps, of several feet in diameter, one below the other, and all connected together by the narrow neck-like passage of the well, 3½ inches diameter through the intermediate rocks. At 700 feet the sands ran in so fast and in such quantities that no progress could be made.

The engineer generally found the well 50 or 100, sometimes 140 feet less deep in the morning than he had left it in the preceding evening. After toiling in vain for a long time to exhaust the streams, it was determined to shut them out by a system of tubing. To do this, the passages through all the rocks had to be opened from 3½ to fully 5 inches in diameter.

This was done. At the depth of 470 feet there was a rock on which the tools had generally been employed, and which caught the tubes. Withdrawing these, that passage was worked over again. It appeared that a nodule in the rock projected into the passage, and had always driven the tube in an oblique direction. It was at length broken off. Below this rock was a large chamber, and the tools now entering it without losing their perpendicularity, struck the bottom a little on one side of the bore previously made, and which they never could be induced afterwards to enter. From this point down the whole work had to be done over again.

This was finally effected, and sheet iron tubes were sent down to shut out the sands. The well was then continued down to 1,020 feet. But again the sands came in, and filled the well for over 100 feet. The tubing, several hundred feet of which had been sent down, was found too light and unmanageable. The engineer resolved to withdraw it, and insert instead wrought-iron tubes, 4⅝ external and 4 inches internal diameter, screwed together so as to form one continuous tube from the bottom of the well to the surface of the earth. This was the largest size which the somewhat warped cast-iron tubing at the top would allow to pass through.

Twenty-four feet of the light tubing obstinately refused to be extracted, and remained fixed in the well, more than 700 feet below the surface. Nothing daunted, the engineer thrust a portion of it aside into the chambers, and cut his way through the rest, and has finally succeeded in sinking the wrought-iron tubes to the depth of 1,102 feet; and has bored 43 feet lower still.

In sinking these tubes, which generally followed a few feet behind the auger or chisel, little difficulty was met, save from the rocks. When one of these was encountered, the tube was arrested, if possible, a foot or 18 inches above its surface, and a tool invented by Mr. Welton was sent down, which could be open when on the bottom, so as to cut a hole 5 inches in diameter, and which could be closed at pleasure, so as to be withdrawn again through the narrow passage of the tube. At times, the tubes would rest immediately on the rock, or would be caught by some protuberance, while passing through it. In this case the tool just referred to was not sufficient, for it could open out only a certain distance below the mouth of the tube, which it would therefore leave standing on a ledge. Here the engineer having first drilled a 3½-inch hole entirely through the rock and into the substratum below it, sent down another tool closed during its descent, and made to open out below the rock, and to cut a passage through it, of the requisite size, from the bottom upwards to the mouth of the tube. This done, the tool could be closed and withdrawn. None of these tools caused any embarrassment, or failed to effect their purpose, although worked with a handle more than 1,000 feet long.

Notwithstanding the use of the most perfect tubes that could be procured, the sand still continued to give annoyance. As the rods were withdrawn, they would rush in from below with the water, to fill the vacant space, sometimes filling the well to the depth of 60 feet, almost instantaneously. This was remedied by building a reservoir at a sufficient height, from which, as the rods were withdrawn, the water was let into the well, so as to produce a *downward* current through the pipes. Such a current was likewise made use of at times to loosen and start the sands packed about the mouth of the tube and allow it to proceed.

The lateral pressure on the tubes has rapidly increased as they descend, requiring a powerful leverage and heavy blows of a rammer to force them down. When started, however, they frequently descend very rapidly until arrested by a rock. The present system can scarcely be sunk any lower, for, although the bottom is free, so great is the lateral pressure that the tubes cannot be started by a power under which the joints show signs of giving way. Other tubing of such a size as to let down inside of the present system will be speedily procured, when it is hoped the work will again be prosecuted.

THE LABOUR QUESTION.

One day in last week the whole of the navvies employed in the formation of a new sewer from Brill-row, Somers-town, to Goldington-crescent, Camden-town, struck because Messrs. J. and R. Rigby, the contractors for the works, thought proper to change their foreman! The navvies at once, after a short consultation, struck in a body, receiving their wages, and quietly dispersed. In the afternoon, a sufficient number of hands were procured to enable the contractors to carry on the works without any other interruption than the stoppage for a few hours.

At Cambridge, on Wednesday week, some workmen employed in repairing Caius College struck work because their employer refused to allow them to drink beer at eleven o'clock in the forenoon!

Her ladyship "Labour," like Jehu, does, indeed, "kick" as she "waxeth fat." Anything more rampant and ridiculous than that men with any pretence to sense—far less heads of families, as many of them doubtless are—should quarrel with their bread-and-butter on absurd grounds such as these, cannot well be conceived. We only hope they will tend to bring "strikes" into universal contempt, as well as disrepute, amongst all the more right-spirited, industrious, and intelligent of the working classes.

At Birmingham, a meeting of the journeymen cabinet-makers has been held, at which it was agreed to ask for an advance in wages, amounting to 10 per cent. An answer has been requested from the employers by the 12th instant. The local committee of operatives for promoting the uniform extension of the "ten hours per day and the fifty-seven and a half hours per week system" as the maximum period of daily and weekly labour, have issued an address to the employers of Birmingham and its neighbourhood. They state that the fact of some of the largest employers having perceived the justice of such an arrangement leads them to the conclusion, that what the experience of those gentlemen has proved to them to be practically and commercially just and satisfactory, would be found proportionably advantageous to all employers of labour, whether on a large or small scale, if only the system were uniformly carried into operation.

At Halifax, on Thursday in last week, a meeting of operative masons was held, when two delegates from Manchester attended for the purpose of calling upon them to join the Operative Stonemasons' Society. The following resolutions were passed;—"That the masons most cordially agree with the rules and regulations of the society;" "That we pledge ourselves individually and collectively to join the Operative Masons' Society;" and that "the shortening of the hours of labour will prove beneficial to our trade, both morally and physically in general."

At Leeds, on the same evening, an aggregate meeting of the joiners and carpenters of the town was held in the Progressionist Hall, for the purpose of forming a trades' union. After a lengthened discussion, a committee was appointed to carry out the objects of the meeting.

Workmen are likely, by reason of their own movement, of which the building trades' operatives were the pioneers throughout the country, to have everything they eat, drink, wear, or use in any way, raised in price, as many articles indeed already are in consequence of the rise in wages; and if a rise in the price of necessaries be a sufficient reason for a rise in wages,—a rise in wages an equally sufficient reason for a rise in prices,—and that rise in prices, leaving the wage-receivers much where they were, be as sufficient an excuse as ever for another rise in wages,—where is this "vicious circle" to close? It seems to be likelier to turn out an "*endless screw*" than a mere "circle," however

"vicious." We cannot but sympathise with every honest endeavour of the working man to benefit himself and his family. We only wish some divine light were shed on this dark and mysterious question of the ultimate destiny of human labour which would at once and for ever settle this momentous question, and put an end to all that groping in the dark for "the greatest good to the greatest number," which ever ends where it began, and never makes any decided advancement towards its final end.

That devilry in strikes, intimidation, has been reaping its meet and proper fruits at Liverpool, —imprisonment and transportation. Two turnouts, who were found guilty of wounding a fellow workman with intent to do him some grievous bodily harm, were sentenced at the Northern Circuit, on Monday in week before last, to be transported for seven years. The judge, Mr. Justice Wightman, in pronouncing sentence, said that no doubt every man had a right to work or not to work for whom he pleased, and he might legally join with others peaceably to carry out his views; but no man had a right to dictate to others the terms on which they should work. It was not to be endured in this free country that any set of men should exercise such a tyranny over others. The offence of which the prisoners had been convicted was of a most grievous character, and whenever such unlawful crime was brought to justice it was necessary that it should be severely punished, and he hoped that the sentence he was about to pronounce would be a warning to others to avoid joining such illegal associations. The prisoners seemed quite astounded at the sentence.

DWELLINGS FOR THE WORKING CLASSES.

In all undertakings, whatever their object may be, the best guarantee of their success is their certainty of paying. It is not a wise philanthropy which expends itself on unprofitable efforts. While the improvement of the dwellings of the working classes is quite worthy of all the zeal and benevolence which happily are now being brought to bear upon the subject, still there must at the same time be some substantial encouragement for the investment of capital.

The question, "Will it *pay?*" will always occur to the practical mind. We must keep a steady eye to the returns, and adapt the supply, as far as possible, to the demand likely to arise. It might be supposed, then, that the small bedrooms, with the incidental conveniences to be had at the Soho Chambers, were on the whole all that could be reasonably expected for the rent charged, 3*s.* 6*d.* a week. But if such a supposition were correct, it must be inferred that either this rent is too high for those who would otherwise go there, or else working men are not disposed to be satisfied with such meagre and dingy dwellings; and I think they ought not to be satisfied. It cannot be said that nothing better can be had on such low terms, for the house built for single men in George-street, Bloomsbury, is at least quite as good, if not superior, and yet the rent for the same accommodation and privileges is only 2*s.* 1*d* a week. The sleeping-rooms are somewhat wider, smarter, more neatly fitted up, and having more natural light, though there is by no means what there ought to be. Unfortunately, this house is situated near one of the vilest dens to be found in all London; but still, taking the low rent and the accommodation offered into account a lodging here is preferable to living in some common houses, where one must pay from 1*s.* to 6*s.* a week for a small "top" bedroom, and put up with many annoyances to boot. Now I understand that this establishment, containing some 140 compartments, is generally "full;" and I think, on the whole, that if the lodgers themselves are disposed to contribute to one another's comfort, and if the superintendent is strict enough with those who forget this obligation, it would be impossible for single men to find better lodgings elsewhere at so low a rent.

While I think it would be unreasonable to ask for anything better for 2*s.* 1*d.* I believe that some material improvement on this is much wanted. This may be good enough as a third or fourth class house. It is indeed excellent for those who must practise the most stringent economy for a season. But there are thousands of working men who, earning good wages, or more particular as to their personal and domestic comforts, would rather pay more for a separate and distinct room, having a good light and commodious fittings for their clothes, linen, books, papers, and other things,—a room with proper partition-walls to the ceiling, in which a man might be able to sleep and rest without being disturbed by his neighbours; a room in which he might sit and read, or write, or draw, or study, in his evening hours, or when out of employment, without being forced to listen to the desultory conversation and laughter of other persons

Certainly, whether we consider comfort or morals, these beds, with their flimsy partitions, are a great improvement on the old abominable system of huddling men together in the same room, and several in a bed; and I would say all honour to a society that has already done so much for the working classes. But I submit it is time they should raise their standard a little higher.

MARTIN MARK.

RAILWAY MATTERS.

The Subterranean Metropolitan Line.—The first meeting of the "North Metropolitan" Company for constructing an underground railway from the New-road to King's-cross was held on Wednesday in last week, when the report stated that the directors had entered into a contract with Messrs. Tredwell, contractors, for the construction of the entire line, including all the requisite provisions for sewage, gas and water supply, on terms which would insure the line being speedily completed within the limits of the company's capital (300,000*l.*). The cost of the line per mile, though traversing the midst of London, would not exceed half that of any of the railways hitherto made through the suburbs. It was in contemplation to establish stations at the principal streets crossing the New-road, about half a mile apart, and to run trains at very short intervals—probably every three minutes—at the rate of about twenty miles an hour, including stoppages, and at a charge far below the existing omnibus fares. At the same time ample arrangements would be made for light with the free circulation of air, and for propelling the trains without the use of locomotives. At King's cross the line would be connected with the Great Northern and with the West India Dock Junction Railways, and all the traffic from them proceeding westwards, or to the Great Western Railway, would be conveyed over this line. The profit could not be less than 8 per cent. The Chairman, in his speech, said that one of the most important objects which they had in view was the Post-office accommodation, upon which they had been in communication with the authorities with the most satisfactory results. They proposed to unite all the termini with the Post-office, and to transmit from the Post-office to every railway terminating round London the Post-office vans as now constructed, with the clerks, by which much time would be saved in the receipt and transmission of letters. It was further contemplated, that each of their stations should become a branch Post-office for the distribution of letters and the conveyance of post-men all over London.

The Saltash Bridge across the Tamar.—The preparatory works for this immense undertaking, the contract for the erection of which has been taken by Mr. C. J Mare, are proceeding with great vigour. Extensive workshops and smithies have been erected. Steam machinery of every description for planeing, rolling, cutting, drilling, and punching the masses of iron to form parts of the bridge, is in full operation. The smiths' shop contains eight forges, worked upon the principle of exhaustion, or fan bellows, driven by steam. A long slip, similar to that used for ship-building, has been laid down, for the construction of the cylinders, to be sunk in the river, for raising the centre-pieces of the bridge. The one now being built is to be 36 feet in diameter, and 80 feet deep. When completed it will be launched and sunk into its position, and being closed at abou 30 feet from the top, will, in fact, be a hug diving-bell, and the men working within it sup plied with air on the principle of the ordinary bell. The work altogether will be one of in terest.

Traffic.—The traffic returns of railways in the United Kingdom amounted, for the week ending 20th August, to 391,853*l.* and for the corresponding period of last year, to 336,799*l.* showing an increase of 58,054*l.* or 17·2 per cent. The total receipts from 1st January to 20th August amounted to 10,601,539*l.*; for corresponding period of 1852, 9,359,447*l.*; showing an increase of 1,242,092*l.* or 13·2 per cent. over the corresponding period of last year.

Excursion Trains.—So much confusion occurred last year from want of arrangement and other causes, that we were half inclined to regret our aid in establishing the system, which, however appears to have such a stamina of real merit in its own nature that it survives and we trust is surmounting and becoming cleared of all the confusion complained of; and it is gratifying to find that its moral influence is beginning to be so appreciated as it appears, in the following quotation from the *Liverpool Journal*, now to be: —"The public are hardly aware of the change produced in the manufacturing districts by the introduction of a new pleasure among the people. The money formerly spent in drink, provocative of crime, is now hoarded for the gratification of a visit to London, Liverpool, Dublin, and other places; and the result is apparent in the criminal returns of the different Lancashire districts. In Manchester, for instance, Captain Willis makes the following return:—In 1843, when excursion trains commenced, the number of prisoners was 12,147. In 1846, 7,629; in 1850, 4,578. It is an ascertained fact, that no excursionist has ever been known to be engaged in any act of disorder."

Proposed New Carriage.—The existing form of railway carriage is proposed to be improved so as to accommodate a larger number of persons. The carriage is to be formed of two tiers of seats instead of one, the body being placed low so as to give the necessary head room for the passengers in each tier, access to be given to the upper tiers by side doors, staircases, and steps, and to the lower, or ground tier by doors placed at each end, the body having a projecting platform protected by railings at each end, to enable passengers to enter the end doors, with a passage or thoroughfare (as in America) from end to end of each carriage on the lower floor. We question, however, whether it be possible to have two tiers of seats in the carriages on some lines, the headway of many of their bridges and tunnels being so restricted.

Licenses to kill.—A new dodge, it appears, has been resorted to by the directors of the Yorkshire and Lancashire, who are said to have actually issued tickets in which they attempt to make their passengers accomplices in their own slaughter, so as legally, we presume, to convert murder into suicide:— "This ticket is issued by this company, and accepted by the holder, upon the express understanding and *agreement* that the company are not to be in any way held responsible to the holder, *or his representatives*, for the *consequences of any accident, however caused, which may happen* to the holder while travelling in any of the company's vehicles, or being at any of the company's stations. It must be exhibited at the company's offices whenever required; and any person using it other than the person named herein will be liable to the same penalties as a passenger who does not pay his fare."

Railway directors have of late made a bold— shall we say an impudent—attempt to take the civil law into their own hands; but not satisfied with this, they seem to imagine that they can play with the criminal law to the like preposterous effect. As for the "notice" just quoted, we really hesitated noting it in case in doing so we should be guilty of injustice to our prophetic mentor *Punch* in not appending his name to it as its true authority. After this, says the *Examiner*, "we shall expect to see in the *Times* an advertisement from the secretary of the Yorkshire and Lancashire Railway, headed— 'Important to Anatomists,' and pointing out

the inappreciable advantage to anatomical professors, hospital surgeons, demonstrators, and others, of obtaining shares in that important surgical line which, by an express and valuable treaty with its passengers, is able to supply, &c. &c."

IRON FOUNDING IN SCOTLAND.*

It is difficult to trace with any thing like certainty the progress of iron smelting and manufacture in this country, but it had attained to a state of considerable proficiency before the Norman Conquest. We are informed that not only was the army of Harold well supplied with weapons of steel and defensive armour, but the horses also were covered with steel, and every officer of rank maintained a smith, whose special business it was to repair the arms and armour when use or accident rendered it necessary. The art of casting in iron followed so naturally from smelting that we cannot suppose it unknown. We find that about 170 years after the Norman Conquest, the Forest of Dean was still an important iron manufactory. In 1238 there occurs among the patent rolls of Henry III. of that date, one entitled "De Forgeis in Foresta de Dean," and there are also the remains of ancient iron works in Lancashire, Staffordshire, and Yorkshire. In the reign of Queen Elizabeth there were furnaces that produced a large tonnage of metal. Prior to this period the smelting was done with wood. The attempt to introduce coal as a smelting fuel was resisted in those days as much as the abolition of the corn-laws was resisted in our own, and for similar reasons—the wood monopolists would be ruined. One Dudley, who had the temerity to use coal, had his works destroyed, and was nearly ruined in consequence. From that time the use of coal fuel gradually increased, and the advance of the iron and other metallic works of this country may be dated.

The first process in smelting iron consists in "roasting" the ore. This is sometimes done in kilns and sometimes on the ground, the object being to divest it of the sulphur, arsenic, and water which it contains. When this is accomplished, the ore is fit for smelting, or being reduced into a metallic state by fusion. For this purpose it is filled from the top into a square furnace, which being properly charged with the fuel and the ore, the mass is blown into an intense heat by means of three blasts—one on each of the three sides of the furnace, the fourth side being reserved for running off the metal when melted. These furnaces are of various dimensions, but those commonly used in Wales will produce five or six tons of pig-iron in twelve hours.

There have been many improvements in late years for accelerating the process of smelting by increasing the steadiness and power of the blast, but of these the application of heated air, invented by Mr. Neilson of the Clyde Iron Works, has been the most successful. This invention is known as the "hot blast," the air before being introduced into the furnace being heated in iron vessels to about 300 deg. Fahr. The result is a great saving of fuel and time, and it is supposed that the quality of the iron is improved.

The metal is run from the furnace every twelve hours into channels formed in the sand of the smelting-house floor. It is called "sow-metal" or "pig-metal," according to the size of the channels into which it is run, the larger being the sow and the smaller the pig metal. The quality of the metal is said by some to depend partly on the quality of the ore and the kind of fuel by which it is smelted: others say that the quality depends on the management of the process—that from the same ore and fuel the different qualities are produced. Accordingly, it is divided into foundry and forge iron. Foundry iron is again divided into qualities numbered 1, 2, 3, and 4. No. 1 contains a larger quantity of carbon: it is soft, very fluid, and will run into the finest mould that can be produced. Hence it is used for all kinds of fine ornamental work, of which there are now many very beautiful specimens. No. 2 contains a smaller quantity of carbon: it is harder and stronger, and is used where strength and durability are required. Nos. 3 and 4 are harder and stronger still, and are used for purposes where great strength and strain are necessary. In this state it is sent to the founder, who uses these different qualities for the purposes for which they are best fitted in the different departments of his business.

In Edinburgh, iron-founding is carried on to a very limited extent as compared with Glasgow and many of the cities and towns in England; but as compared with other businesses in Edinburgh, it is by no means on an insignificant scale. There are occasionally heavy orders from foreign countries. The Shotts Company, Leith Walk, are at present fulfilling a large order for Russia; and J. Miller and Co. Broughton-street, have done much heavy work during the running year, amongst which we may mention the massive girders and other iron-work used in securing the railway tunnel against the pressure of the new building on the Mound.

It is not of distant date that the business of iron-founding was introduced, but short-lived as it has been, it is difficult to ascertain who was the first iron founder in Edinburgh. In the beginning of all trades there are individuals more ingenious or more enterprising than their neighbours, who act as pioneers in clearing the way for the introduction of a trade into the world. They find that it is likely to be a successful and probably lucrative concern, and by themselves or some other individual it is legitimised and becomes a regular trade. So, probably, has it been with iron-founding. It is difficult to ascertain who first gave to iron-founding a "local habitation and a name" in Edinburgh. There is an obscure tradition that some one, nobody seems to know who, carried on the business in the Low Calton, and we fancy that we detect in this individual the "first typefounder in Edinburgh," mentioned in our article on "Typefounders," although we have no certainty on this point, but if we surmise aright, his name was "Donaldson." There was another iron-founder of the name of Thomson, who carried on an extensive business for the times in which he lived, and who built as "more extensive and commodious premises," the workshops afterwards occupied by Mr. Simpson, coachmaker, at Abbeyhill, but he died about the time they were ready for occupation, and these premises were therefore never occupied as a foundry. Between Thomson, Steven, foot of Tolbooth Wynd, Canongate, and Simpson, Abbey-hill, the matter rests; of these three, Thomson is supposed to be the oldest, but they all conducted business on a small scale, although they were the principal men of their day and trade in Edinburgh. The "Edinburgh Foundry," Leith Walk, was certainly of a later date.

* The following is from the series of articles on the "Working Classes of Edinburgh and Leith," in the *Edinburgh News*, from which we have before quoted.

THE HIGHWAYS OF COMMERCE ARE THE HIGHWAYS OF ART.

Under this title Cardinal Wiseman has been lecturing in Liverpool last week for two hours and a half. Before endeavouring to trace the ways through which art has travelled, it may be useful to us, he said, to be assured that it has never travelled by the way of war, or of conquest. There never was a country which more satisfactorily tested this principle than Egypt. From the earliest period it had an art of its own, obstinately indigenous, as much belonging to its soil as the lotus or papyrus to its waters. In architecture, sculpture, painting; in decoration, writing, illumination, its art was national, and most characteristic. It existed early enough for Moses to have studied it. It lasted long enough for Christianity to destroy it. For it was heathenish in its very essence, in its rind, and in its core. It was entirely an outward expression of Pagan untruth. It was, consequently, nearly stationary. The practised eye of the antiquarian or artist will see in that lapse of many ages a certain ebb and flow, a slight decline, and a partial revival; but the main and striking features scarcely alter. The type of Egyptian art flags or varies but little.

Not even imperial Rome, the next and last subduer of that tenacious race, could wrench from it its arts, any more than its religion; and it continued to grow its deities in its gardens, and to record its new emperors in hieroglyphics, till Christianity replaced the one, and its holier symbols superseded the other.

But there could not have been a stronger proof of what I have asserted than the entire history of Alexander's conquests. It was the reckless march of destruction, such as the aggressive incursions of all military despots,

> "From Macedonia's madman to the Swede,"

have ever been. He overthrew cities, rich with the treasures of preceding civilizations, without remorse, as Media had ruined Assyria, and Persia Media, and he gave nothing in place. How truly do the Indus and the Nile bear between them this axiom, written in ruins across that vast field of victory—that you may subjugate the bodies of men, but you cannot conquer their thought.

How then has art, which, to be genuine, must be the language of a nation's intelligence, thoughts, hopes, desires—soul,—how has she held her progresses from people to people? Not, as we have seen, riding on the warrior's car nor borne on the wings of victory. She has travelled at a quiet pace over the deserts with the pilgrim: she has sailed with the merchant in his galley; she pondered over what she had seen, thoughtfully, as the camel slowly marched; and she was more solicitous for the precious models, than for the merchandise, which she had stored in the vessel's hold.

Let us look for a moment on the early civilisation of Italy. Before the foundation of Rome, we find a wise, a peaceful, and a refined people, the Etruscans. The origin of art among this people, which spread itself all over central Italy, is certainly as yet, like all else about them, a mystery. In the tombs of cities, supposed to have been destroyed by Rome as early as 399 years before Christ, are to be found vases of various manufactures, very rarely rude pottery, what is considered almost Phœnician or Egyptian, native vessels of beautiful form and decoration, proved to be such by inscriptions in Oscan or Tuscan, and works of Greek origin, exquisitely finished, representing Homeric scenes, and bearing inscriptions not merely in Greek, but declaring the work to be Athenian. Those who believe the tombs, which are every year opened and found full of those treasures, to have been sealed up from the time Tarquinia, Veii, or Vulci was destroyed, and consequently to exhibit to us an art, coeval, at latest, with the early times of Rome, have to account for it bearing all the characteristics of the most perfect Greek art, at a period long antecedent to the development of art in Greece. We must conclude, as Muller does, that long after the Etruscan cities had been reduced by the Romans, they continued, as *municipia*, to enjoy many privileges, amounting almost to self-government, and persevered in their former and peaceful pursuits.

The lecturer then here entered into a dissertation on the origin of Grecian art, and gave it as his opinion that the Greeks derived it from Assyria, and not from Egypt.

With the first efforts of Greek art, he continued, we are totally unacquainted. As Augustus destroyed the homely brick Rome, and left us a marble one in its place; as our forefathers sharpened out the Norman arch, and clustered the massive pillars that sustained it; so, probably, the Greeks of the age of Pericles became ashamed of their ruder monuments, and replaced them by more perfect works.

We travel to Ægina, an advanced port of Athens, the last stage in travelling to it from Nineveh. There we have the earliest evidence of the Greek type of art. A family likeness, a sameness of expression, reigns through all the figures. The type, once admitted into the Greek mind, purified of its grossness, refined, assimilated to its own perceptions, ideas, and feelings, ceases to belong to any one else. It is mastered, appropriated, and so domesticated that it cannot be won back. But neither can it be driven out.

Of earth earthly, indeed, is all this beautiful art of ancient Greece. Among its splendid monuments there is not one that leads man's affections above the earth on which it stands. There is not one figure among them all that lifts its eyes towards heaven, as the Christian does a thousand times, to the dwelling-place of Him from whom he came and to whom he goes. There is no symbol there of faith, no emblem of

hope, no conception even of charity. There is no reflection of heaven on the human countenance, no ray from above along which the eye and heart travel towards a holier and a happier region. In a much ruder age, when every limb was made out of proportion, and the body was distorted, there was a power to throw into the countenance a radiance of joy, a purity of heart, a peace of innocence, a cloud of compassionate or penitent grief, which the noblest artists of Greece had never imagined, and would not have known how to express.

One may not unreasonably conjecture that Assyria, Egypt, China, and India matured their art too soon. This was no time for pre-existing poetical creations, on which art could dwell and labour. Greece had a long interval of heroic dreaming, which came floating down upon a true nation, gorgeously decked by old song, but in all the indefinite beauty of a vision.

Art never took a sufficiently strong hold on Rome to create a distinctive type. It was imitative, or rather a copyist, of Greek art; and as this declined, so, likewise, did that of Rome. By the time of Constantine it had faded in both countries: still it did not expire. In every part of the Christian world sumptuous churches began to be erected, and no expense was spared to decorate them. This gave a new impulse to art, which had the effect of preventing its further decline for a century or two at least. But, in the meantime, Western Europe was losing the countenance and support of the emperors, and becoming, at each successive generation, subject to a new invasion; and, as time rolled on, the decline of art became more rapid in the west. While the arts were thus declining, two great rivals, Genoa and Venice, were developing and laying the foundations of modern commerce. For centuries the great traffic of the East was in the hands of Venice. But the heart of that noble city was St. Mark's; her best affections clustered about it; her pride was in its being nobler, grander, than anything else on earth. Her traffic enabled her merchants to bring from distant provinces everything that was rich in material, marbles, columns, gems; and nothing was too costly or too beautiful to adorn the object of every Venetian's proud affection.

In this manner did Venetian commerce bring back lost art in its rude germ triumphantly on its prows; and from its Eastern lagoons broke on slumbering Italy the first dawn of a beautiful coming day.

Pisa, in 1016, imitates this example, and calls in Greek artists, and shows them high honours, erecting to Buschetto, the most eminent of them, a magnificent monument. In 1066, Didier, abbot of Monte Casino, sends in the same direction for able workmen to embellish the church with carvings, mosaics, and other rich adornments.

About the same time Cardinal Hildebrand, having been on an embassy to Constantinople, and admired the bronze work of its founders, ordered there the gates which to this day adorn one of the principal entrances of the Vatican Basilica. The example of Didier was followed by that of La Cava and others. But this was far from being all. The whole of Italy, from the eighth century to the thirteenth, was full of Greek art.

It was, then, the peaceful intercourse between the East and West, notwithstanding the unhappy religious separation which had occurred between them, and the many jealousies which the commercial republics of Italy had to encounter from a decaying empire—it was the mercantile travelling to and fro which brought back once more Grecian art to prepare a new artistic epoch in Italy. The architecture of the periods through which we have glanced suffered less than any other department of art. Many of the buildings adapted from Roman halls, or basilicas, and rebuilt, or renewed at the brighter period of Theodosius, had stood bravely the shock of barbarian incursion; its fires, its plunderings, its wantonness. They remained as landmarks, as canons, and as models. They ruled the proportions, the distribution, and the relations of the different parts. The nave, the aisle, the apse (early elongated into a chancel or choir), the transept, the porch, the portico,—all were to be found there. But at an early period of emancipated Christianity, greater development than ever was given to the most distinctive element which Roman art had given to architecture—the arch. In the Basilica of Constantine, in the Forum at Rome, long called the Temple of Peace, this may be seen. But where columns were not to be found scattered on every side, ready fashioned, as in Rome, piers would naturally be built instead of them, and wider arches thrown across them. In this manner rose that multitude of churches which pervade Lombardy, the southern coast of France, and the banks of the Rhone, the Rhine, and the Moselle, and known as Roman or Romanesque. The passage from this to the Gothic is obvious and graduated.

I wish principally to convey that, as in Greek art, the type once accepted by it became an inextricable principle, which ruled it to the last, so in Italian religious art, the Byzantine type so completely became its once adopted principle, that no progress has ever been able to remove it.

It has been shrewdly remarked that Tyre, for many ages the greatest commercial city in the world, perished entirely because it had not a productive, but merely a transit, trade. It was a port, and nothing else. With us it is not so. The power of creating the materials for trade exists at your very door. Venice was flourishing so long as it stood in the most happy position for the commerce of the East: when another road was found and accepted, the day of her prosperity passed away. Here, however, this cannot be. The face of the old world is turned to the west, and you are on its very watch-tower, on the point whence springs forth the spirit of commerce to take its flight across the ocean. Experience has shown us how the development of commerce in this country has been accompanied by a corresponding one in taste and feeling for art. A century or two ago, in obedience to a tradition of race, war with France was the normal condition contemplated by every Englishman, yet we studiously copied all the bad taste in literature and art of our rival. Those days are past; and with the peace of the present generation, and the intercourse with foreign countries which it has promoted, art has made more progress than in centuries of war and home imprisonment. Let, then, the manufacturers of England cultivate art in their productions; let her looms send out patterns to rival the rich stuffs of the old Italian weavers; let her furnaces bring forth porcelains that will shame the Grecian pottery; let her foundries produce graceful metal-work equal to that of Nuremberg; and then once more commerce will have reason to be proud of being the pilot of art to the most distant region; and the vessels of England will be hailed by living generations, and celebrated by many to come, for bearing within them not only wealth and profit, but the pacifying, civilising, and refining influences of the noblest pursuits.

A COVERED MARKET FOR MANCHESTER.

A COVERED market, including an area of 2½ acres, is to be formed here in the place of the present defective arrangements. Mr. Haywood, ironfounder, of Derby, has contracted to construct a roof. By razing one-half the butchers' market, according to the local *Courier*, and clearing the ground, removing the block of buildings now occupied as shops, bounded by Scholes-street, Oak-street, Foundry-lane, and Coop-street, and removing the octagonal market-house into Oswald-street, to premises now being erected, an oblong square will be obtained 140 feet long by 241 feet wide or thereabouts, bounded by a line of new shops looking into the market (part of which have been erected some time, and the foundations are being dug for ten more to occupy the vacant land), and Oak-street, Oswald-street, and Higher Oswald-street. The whole of this space is to be covered with the ridge-and-furrow roof, in four divisions, similar in construction to those now adopted for railway stations. In the front entrances, facing to Oak street and Higher Oswald-street, there will be four elliptical spans, two central, of 72 feet each, and two side arches of 50 feet each, springing from square ornamental pillars. Above the pillars will be an ornamental wood framing, pierced and filled in with ground glass, and finished over each gable with ornamental antefixes. In a line with each of the pillars supporting the arches will be a row of square columns, about 25 feet high, extending from the front in Oak-street to that in Higher Oswald-street, supporting cast-iron girders, upon which the strain of the four roofs will be cast. One side of the structure will be an open arcade of pillars, 25 feet high, and 16 arches, each of 18 feet span. The average height of the cover from the level of the ground to the apex of the centre bays will be about 43 feet, and the roofs will rise about 19 feet 6 inches from the gutters between to each apex of the same bays. The skeleton of the roof, of wrought iron, will present a light appearance. At the apex of each roof will be a long skylight of strong rough plate glass, of which there will be upwards of 60,000 square feet used, affording light. The plates will be 14 feet deep on each side of the ridge. The skylights are supported on Louvre framing, by which ventilation is secured. Between the louvring and the gutter the roof will be covered with slate. The sewerage of the market will be connected with the main sewers in Oak-street and Shudehill, the rain falling upon the roof passing through the pillars into the drains. Two main avenues for carts, of the width of eight yards each, are to traverse the market, one direct from Oak-street to Shudehill, the other connecting Eagle-street with James-street. The present lamp and fountain will be removed, and it has not yet been determined what shall be done in respect to them. The site they now occupy is not in the centre of the new area, and there is the further difficulty that there will not be a centre bay, so that they must either be dispensed with, or there must be one on each of the centre bays. A large number of competing designs, by parties of well-known skill, were sent in, including designs from London, Dublin, Birmingham, Glasgow, and Derby. The plans were submitted to Mr. William Fairbairn, who awarded the first place to that of Mr. Wheeldon, of Derby, manager for Mr. Haywood, of the Phœnix and Derwent foundries. The work will be done under the superintendence of Mr. Fairbairn, and on his recommendation Mr. Henry Bake has been appointed clerk of the works. The whole is expected to be complete by the early part of next year.

THE WASHINGTON MONUMENT.

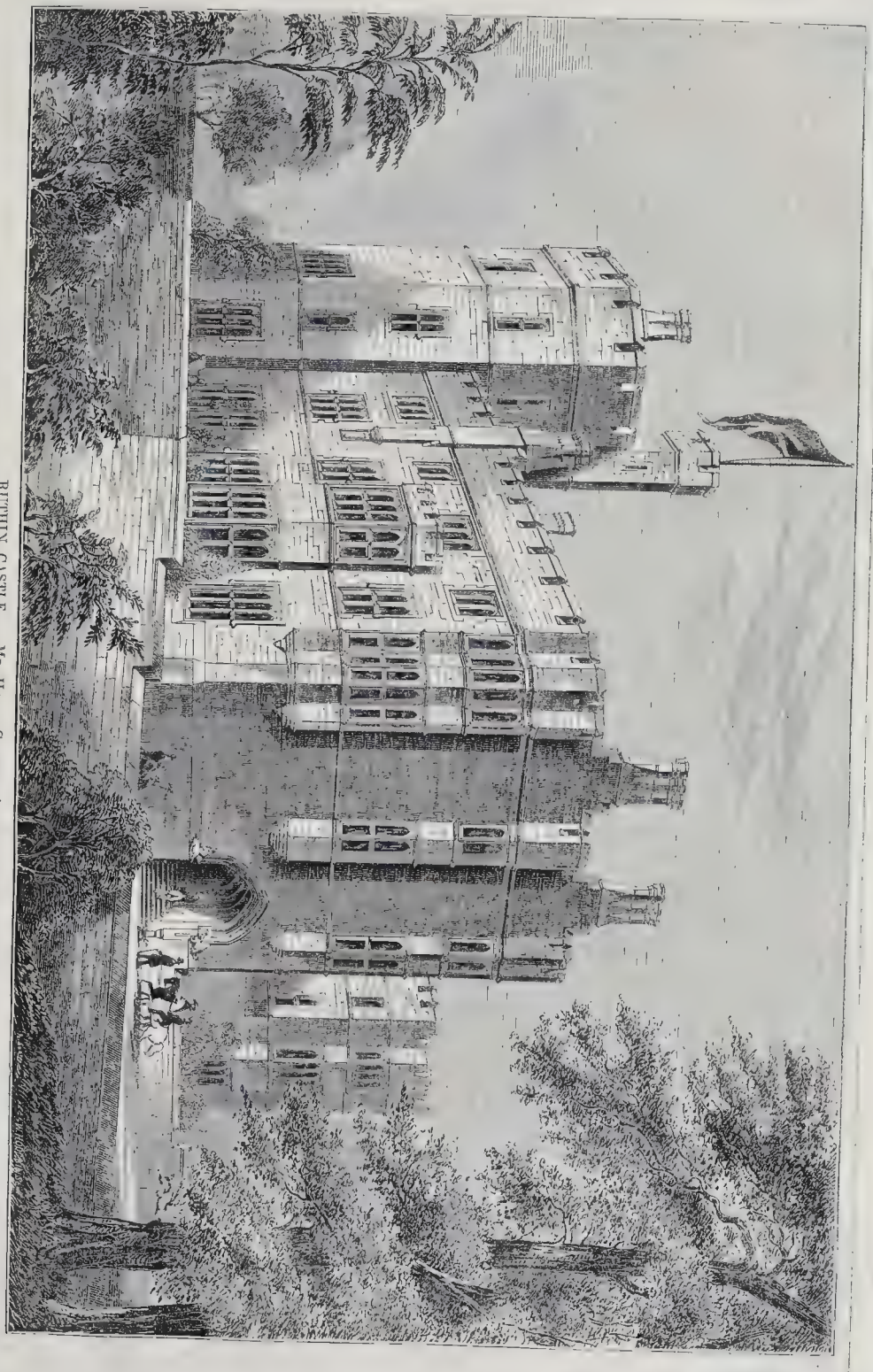
IN the New York Crystal Palace a model of a design for a monument to Washington is exhibited, which has justly drawn down upon it the animadversion of some of the American papers, jealous of the rising character of the country. The *New York Tribune* describes it as "made up of a circular structure and an obelisk. The former consists of a colonnade and portico with fluted Doric columns, an open balustrade over the entablature, and a terrace roof: the latter starts up square from the middle of the circular flat roof, and diminishing slightly as it rises, is continued quite plain to a height of 620 feet from the ground, being then finished by not carrying up the work any higher. Such is the bi-fold design that assumes to glorify Washington, and to represent the taste of the American people."

We do not require to be told that the effect is wholly unsatisfactory. It is to be regretted that the obelisk has been already carried up to a height of 132 feet.

RUTHIN CASTLE.

RUTHIN CASTLE, of which we give a view, is situated in the Vale of Clwyd, contiguous to the town of Ruthin. The new building is constructed with the red sandstone of the country. It is the property of Frederick B. West, Esq. M.P. for the town of Denbigh, and occupies part of the site of an older castle built by Edward I.

The accommodation consists of hall, 33 ft. by 24 ft.; saloon, 34 ft. by 20 ft.; drawing-room, 56 ft. by 24 ft.; dining-room, 40 ft. by 24 ft.; library, 28 ft. by 28 ft. The castle is only just completed, at a cost of about 12,000*l*. Mr. Henry Clutton was the architect.



RUTHIN CASTLE.—Mr. Henry Clutton, Architect.

THE CANYNGES SOCIETY AND ST. MARY REDCLIFFE, BRISTOL.

So much has been said concerning the desired restoration of St Mary Redcliffe, that many persons suppose the work is nearly completed. In truth, however, very little has yet been done for lack of funds, and the condition of the structure is becoming worse and worse. The sixth anniversary of the Canynges Society was celebrated on the 31st ult. when the vicar, the Rev. Canon Madan, preached a sermon, very ably answering the objections that have at times been urged against the large expenditure on a single church, such as this restoration demands. "Shall the structure be allowed to fall," he asked, "because it is more magnificent than is absolutely necessary? Shall its extent and beauty be its condemnation? Shall we leave it to decay because it is, of all our noble churches, the one which most deserves restoration? I think few will consent to this course being pursued. But, then, shall we pursue another course? Shall we restore that which is absolutely necessary, at as little expense as possible, and leave all substantial repairs unattempted? Shall we treat outlay on all ornamental work as an unnecessary expenditure of money? Shall we remove the rich mouldings instead of restoring them, and fill up all decayed places with plaster instead of stone? Shall we, in fact, condemn the woman who poured the ointment on the head and feet of the Saviour, and affirm that the ointment might have been sold for much money and given to the poor? I think this course will not meet with the approval of Christian men any more than with the approval of God himself. But (the rev. gentleman went on to say) I will not regard the restoration of this church in so low and so unworthy a light. Such a restoration must have a powerful influence upon the people around us for good. A neglected, dilapidated church is a dishonour done to God in the eyes of the people. It is a reproach to us: its moral effects are evil, for it teaches men to think little of the sacrifices and ordinances which are administered within the walls of the church. On the other hand, a church well built, properly ordained, and kept in order and decency, has a powerful moral effect for good. It is a witness ever in the eyes of man that God is honoured there, and that whatever is dedicated to his service is, as it ought to be, of the very best."

At the dinner, John Scandrett Harford, esq. of Blaize Castle, presided, and the Bishop of Gloucester, Sir John Haberfield, Mr. King, Mr. Beddoe, Professor Mosely, and others addressed the meeting: we will confine ourselves to those observations more especially relating to the fabric.*

The Chairman, in treating of what was immediately the cause of their meeting, said,—They were well aware that the object of the society was the restoration of a sacred edifice which formed the glory and the ornament of Bristol—which was first and foremost among all the parish churches of a country so rich in beautiful structures of this description, and which consecrated the memory of one of their most respected ancient citizens. The designer of the majestic pile of St. Mary Redcliffe must have been an architect of no common order, for, raised in the fifteenth century, it combined the mingled grandeur and delicacy of expression which the architects of that age were so capable of imparting to their works. It was an edifice which charmed the eye by the general grandeur and mastery of its design, by the chasteness and elegance of all its parts, and by the grace and fine finish of the stonework which pervaded it throughout. And he could truly say, from having travelled in foreign countries, and passed, when there, much of his time among works of art, that he found St. Mary Redcliffe was in no way diminished by comparison with the finest foreign structures. Such edifices, to use the expressive language of a German writer, combined the majesty and simplicity of the overarching groves of the forest with the beauty and richness of the foliage of flowers. But it was common to all works of art, and especially so in the case of St. Mary Redcliffe, that they were exposed to the ravages of the seasons, and to the mouldering touch of time: and it was found, about the year 1848, on ascertaining its condition, that the external fabric had been so grievously acted upon by the elements and affected by the ravages of time, that if nothing were done to stop the progress of decay, the entire structure must soon fall into ruins. The question then became—What must be done? It was found, upon inquiry, that a sum of money was required far beyond any amount which could be raised by church-rates or other compulsory mode of assessment. Were, then, the parishioners and the public to look on in mute despair till the interior was as bad as the exterior, and until, finally, their recovery was impossible? The leading parishioners aroused themselves. They addressed themselves, in the first instance, to the inhabitants of their own parish. They themselves set a good example by the liberality of their contributions, and thereby took the best means to induce others to join them in promoting the good work. And having done their utmost in that way, they felt that the time had come when they might appeal to a British public for support upon grounds of the most solid reason. They felt that the church of St. Mary Redcliffe was the glory and ornament of Bristol; that, exclusively of its uses as a parish church, it was a noble, and splendid, and excellent work of art, which belonged in a certain sense to the British public; and that, therefore, every gentleman of taste might justly be expected to contribute something to its restoration. One of the earliest visits which he (the Chairman) paid to objects of interest in this locality, when he recently returned from abroad, was to the church of St. Mary Redcliffe. He had heard, during his absence, that the eastern end of the church had been filled in with a window of stained glass, and he was most anxious to see its effect. He went almost with fear and trembling lest it should turn out, as he had seen in various instances, that the colours were too gaudy. But he could with the utmost truth congratulate Sir John Haberfield and Mr. Phippen, the truly-liberal donors of the window, upon the result. He ought not, certainly, to have had a doubt on the subject, when he recollected that the work had been entrusted to a person of accomplished taste; but he certainly did feel apprehensions which his visit to the building completely dissipated. It was only the other day that he visited the great cathedral at Cologne, which had been long in course of restoration, and which, when finished, would form one of the most sublime pieces of architecture in all Europe; and he was painfully struck at beholding, in that vast and most noble structure, masses of glass, beautiful, indeed, but altogether too gaudy and out of harmony with the aspect presented by the stonework of the building. The effect on the eye was most painful: and he could not but cast looks of regret on some of the older windows which contained coloured glass beautifully toned down to harmonise with the character of the more solid portions of the edifice. They filled and charmed the eye, and were in perfect keeping with the stonework with which they were associated.

Canon Madan said: He believed many were hardly aware of the state in which the structure was. Some of the flying buttresses, for instance, had been acted upon by the atmosphere in a most curious and melancholy manner. They were cut in channels, he might say; their strength was almost destroyed; so that being the chief supporters of the structure, there was danger of the roof falling through if any of them gave way. He thought a walk upon the leads of the church would make many, he would not say lukewarm supporters, but would make many more ardent supporters of the restoration than they could yet number among them. The church of St. Mary Redcliffe was a series of arches, one resting upon another, and it was impossible to foresee the effect of the breaking down of even one of the flying buttresses. The whole roof, if one gave way, might be brought down with it; and if that were to happen, where might the ruin stop? The building rested upon arches, acting in various directions, and beautifully calculated to support the whole; and he thought they had arrived at the time when there was absolute danger of the building falling, whilst, if it fell, he knew not what sum would be required to repair the loss. And really when he thought about the funds which were requisite to meet the expenses of restoring all the decayed stones, he scarcely knew what to think. To carry the work through they must have amounts which would seem extremely large compared with what had been done and expended at present. The Canon then proceeded to state, at considerable length, the alterations which had been determined upon in the way of removing the old, tall pews in the interior of the building, and their substitution by convenient seats for rich and poor, which would enable the accommodation to be largely increased. He proposed the health of "Nil Desperandum" Might his example urge them all on to greater exertions in completing what he had so nobly begun.

Mr. Proctor, on behalf of the Restoration Committee, said it was eleven years since the committee first drew the attention of the public to the dilapidated state of that noble fabric, and although the funds placed at their disposal had not allowed them to progress so fast as they wished, they had yet been able to proceed continuously. He then gave a short account of their proceedings, which, although, as he had said, they had not been so fast as they at first hoped, had been sufficient to encourage them to continued exertions. Under the advice of their architect, and with the sanction of the subscribers, they attempted to arrest the progress of decay by undertaking a thorough and complete drainage, together with the removal of a large quantity of soil which buried the base of the fabric. Having accomplished this work, they were induced to commence the substantial repair of the church, and on the 21st day of April, 1846, the first stone of restoration was laid by Sir John Kerle Haberfield, at that time Mayor of Bristol, and a large body of the fraternity of Freemasons, in the presence of an immense concourse of their fellow citizens; and since that time they had, by the assistance of the public, proceeded with the work without intermission. They had completed the roof over the chancel, thrown open the east window, restored the east end and the whole of the clerestory of the chancel, and two severies to the base The men were now at work on the south transept, and were making rapid progress towards the completion of its south front. They had expended nearly 6,000*l.* and of that sum 1,670*l.* had been contributed by that society. The restoration committee had expended all the funds placed at their disposal on the preservation of the external portion of the church, but through the instrumentality of Mr. Richard King, Sir John Kerle Haberfield, and Mr. Phippen, who contributed funds for that especial purpose, they had given some attention to the interior, by restoring the beautiful chancel screen, and putting appropriate stained glass in the east window. He (Mr. Proctor) need scarcely say what pleasure it had also afforded the committee to carry on the work at the north porch, now so nearly completed, through the liberality of "Nil Desperandum." When first the plan of restoration was brought before the public it was thought by many almost chimerical, but the progress made was certainly a proof that the generation of the nineteenth century were not inclined to allow this magnificent work of their forefathers to pass away; and while recounting their proceedings in the presence of such an assembly as he had then the honour of addressing, he did feel that the committee were justified in the attempt they had made They had, it was true, now less to accomplish than when the subject was first brought before the notice of the public, but would they permit him to remind them that eleven years had elapsed, and that time had made sad ravages on that portion of the building which they had not yet been able to touch. The progress of decay was most fearful, and when they had heard from their architect the state in which a large part of the building then was, he (Mr. Proctor) hoped the members of the society would be induced to use their best exertions to place such funds at the disposal of the committee that they might be able to carry on the work more rapidly. They were much indebted to their architect, and he was sure they would unite with him in thanking him, and drinking his very good health.

Mr. Godwin said: It always gave him great pleasure to meet inhabitants of the city of Bristol; as a proof of which he might mention the fact, that in order to be there that day he had travelled from Lincolnshire to London, and from London to Bristol, under circumstances which would compel him to go back that night, thus accomplishing a distance of 300 miles. With regard to the building, so much had been already said, and so well said, that little was left for him to trouble them with. He must, however, observe that the present condition of St. Mary Redcliffe demanded immediate attention, for no preceding speaker had exaggerated its actual state. Looking at its inside, where all was neat and clean, they might lull themselves into the belief that nothing was wanting—nothing required to be done; but if they examined the outside they would find that it was not merely in a very decaying state, but in a state positively dangerous—so much so, that he could not, as a professional man, answer for the consequences of any passing storm. Some of the buttresses were more like stalactites than anything else, and they, with

* All are fully and ably reported in the Bristol papers.

portions of the windows, the mullions, and some of the uprights, might at any time come down. It was a structure which no effort should be spared to save; it was, in truth, a landmark of history. He had great pleasure in endorsing the chairman's opinion, that the window-painting recently inserted was amongst the best examples of stained glass he had seen, every face being finished so minutely that a strong glass was needed to discern its beauties. Mr. Godwin next referred to the completed masonwork (executed by W. Rice), of the north porch, and enumerated the niches, grotesque heads, &c. which formed conspicuous portions of the work, referring, at the same time, in terms of praise, to the execution of the foliage around the doorway, and the carving generally. He had waited, he added, with a deputation, upon Lord de Redcliffe, who stated that although he could not do much for the church, yet he had made up his mind to do something. The very involved condition of Eastern affairs required, at present, all his lordship's attention; but he had no doubt that what Lord de Redcliffe had said he would fully redeem. With regard to the individual "Nil Desperandum," who had provided the large funds for the north porch, too much in approval could not be said. That donor seemed to think—

> "Who builds a church to God and not to fame,
> Will never mark the marble with his name;"

but the restorers of St. Mary Redcliffe had so acted that the name of "Nil Desperandum" could scarcely be forgotten, for they had marked "N. D." upon every stone, to show their gratitude and puzzle future antiquaries.

The health of Mr. Britton being drunk, that gentleman made a spirited speech, and excited much enthusiasm by calling on "Nil Desperandum," if present, to declare himself.

The invitation, however, was not accepted.

PROVINCIAL NEWS.

Ipswich.—A site for infantry barracks for 1,000 men is being selected here by order of the Government, and the works, it is said, will be shortly begun.

Sudbury.—The builders here it seems have been unusually active of late, so that it is almost a personal favour to secure the services of either bricklayer or carpenter, so fully are all employed. Other branches of industry are in an equally active state.

Beccles.—Amongst the public improvements here, a company is about being established to purchase the present gas-works, and erect waterworks, public baths and washhouses. Mr. Lynde, the engineer of the Norwich and Lowestoft Works, has cursorily surveyed the town, and given a favourable report, it is said, of the capabilities the locality affords for carrying out the projected works. The Town Council are directing particular attention to the sewerage. The mains for sewerage and gas will be immediately commenced for the new streets leading to the railway station.

Chertsey.—A new wooden bridge within the last few weeks has been placed over the river at New Haw. The workmen during the progress of the works were charged with erecting (without Act of Parliament thereanent provided) a temporary toll-bar—viz. a plank—across it, for the exaction of half pints of beer in place of pence from the public at large.

Sherborne.—Girls' and infants' schools are to be built in Westbury, upon land given by the Right Hon. the Earl Digby. Mr. Pocklington, London, is the architect. The following were the tenders:—Guppy, 769*l.*; various trades separate, 766*l.* 5s.; Down, 726*l.* 10s.; Harris (accepted) 725*l.*

Longburton.—A new school-house has just been completed here through the exertions of the vicar, at a cost of 400*l.* The site for the building was given by the lord of the manor, Mr. Drax, M.P. The design was presented gratuitously by Mr. Henry Barnes, of Dorchester, architect. The hall is calculated to contain 100 children, and there is a residence for teacher. The builders were Mr. Perrott, of Longburton, and Mr. Guppy, of Sherborne.

Bath.—The theatre here is about to be thoroughly renovated and redecorated, and will open with "the tragedy of 'Macbeth,' with all the magnificent effects brought out at the Princess's Theatre!"

Chester.—The renovation of the Exchange of this city, according to the local *Chronicle*, is effective, and converts the old building from an eyesore to an ornament. Other improvements in connection with it are now, in consequence, recommended.

Carmarthen.—The buildings for the new cattle-market and slaughter-house are to be immediately proceeded with under the superintendence of Mr. Moxham, of Neath, whose plans, modified by the committee, have been adopted.

Cardiff.—Messrs. Batchelors, Brothers, merchants and shipbuilders of this town, are far advanced in forming an extensive graving-dock, situate on the western side of the Bute docks: its dimensions are 200 feet by 60 feet, and of sufficient depth to admit any vessel that can enter the Bute Docks: the gates are to be 45 feet wide. The original contract was 8,000*l.* but owing to its being lined with stone instead of timber, as first intended, the contract is about 13,000*l.* This is a great acquisition to this flourishing town, as vessels needing repair have hitherto been compelled to go either to Gloucester or Bristol. It will be an additional facility to which Cardiff offers more than the other seaport towns on the channel. The engineer is Mr. Martin, of London, and the contractors Messrs. Hemingways and Pearson, who are now carrying out the extension of the Bute Docks. Its completion is anticipated by the end of the year.

Stafford.—The foundation-stone of the new guildhall and covered market about to be erected here was laid on Thursday in last week with some ceremony by the mayor.

Birmingham.—A plan has been prepared of the contemplated improvements proposed to be effected on the corporate property around the town-hall, by the town surveyor, at the request of the estates and buildings committee of the town council. Originally, according to the *Journal*, it was intended that a street 14 yards wide should be formed on the west side of the hall, and carried round the back; Congreve-street and Paradise-street isolating it on the east and in front; the plot of ground between the back of the hall and Edmund-street to be appropriated to some of the corporate and other public buildings. In that arrangement the street was far too narrow to give due effect to the building. The town surveyor proposes that on the west side the street shall be 20 yards wide, and that the space behind the hall be entirely open to Edmund-street. On the vacant land beyond the west street he proposes to place the Birmingham Institute. The building would have a frontage to Paradise-street of 70 feet, and the façade would occupy the whole of the space between Paradise-street and Edmund-street, a sweep of 225 feet; the whole containing nearly 2,000 yards. Instead of making the junction of Ann-street and Congreve-street an acute angle, he proposes to sweep that corner entirely away, and form an inverted crescent; the spring of the arch being, on the one side, almost opposite Waterloo-street, and on the other side, at the Edmund-street corner of Congreve-street. This would throw the east side of the hall quite open, and would form an immense "place" for the reception of statues, fountains, or public memorials. In the crescent, the corporate and other public buildings would be located. The plan has been unanimously approved of by the committee of council.——The project for establishing a Crystal Palace in Sutton Park is now under the consideration of the two corporations of Birmingham and Sutton, and of the Midland Railway Company. The scheme has been attended with difficulties, and if adopted, it will be subject, it is said, to great modifications.

Leicester.—The ceiling of the Temperance-hall has been decorated in sixty large panels with intricate patterns, division bands, and borders, in the German polychromatic style, executed by Mr. F. Winks, of Leicester, from a design by Mr. J. Medland. The contour of the ceiling is the segment of a circle; and bands of fleur-de-lis, with rosettes at the intersections, divide it into sixty-three panels, three of which are ornamented with papier-maché flowers in relief, gilt; and a deep border, with the fleur-de-lis repeated, but in different colours, finishes the ceiling next the side walls.

Liverpool.—The Liverpool Roman Catholic Institute, a new Gothic building, raised in the garden of the conventual scholastic establishment in Hope-street, for the use of the members of the Liverpool Roman Catholic Institute, was inaugurated formally on Wednesday in last week by Dr. Wiseman. The building, which has a high-pitched roof, consists mainly of a lecture-hall, chancelled at the south end, and beneath which are schoolrooms for the education of boys, of whom there are at present 130 on the rolls. The lecture-hall is 75 feet by 25 feet in size, 30 feet high, and is capable of accommodating about 500 persons. The chancelled portion of the hall forms a small chapel, 23 feet by 13 feet, at the east end of which is a small sacristry. The wood composing the altar will be of oak, and the fittings of the richest description. The screen is to contain three panels, each bearing emblems of our Lord's passion, on gold ground. The chapel is lighted by one three-light and thirteen two-light windows, to be shortly filled with stained glass. The style is of the Decorated period, the remainder of the building being of plain domestic character.

Eastham.—The new schools in this village recently completed, were formally opened on Monday in last week.

Preston.—Plans are now being prepared by Mr. W. Hopwood, of land proposed to be taken on the Preston new road, for a public park in this town. When completed, they will be submitted to Mr. J. Feilden, the owner of the land, for his approbation.

Sheffield.—A site for the proposed building for the Sheffield School of Design has been procured, and a subscription-list of 3,100*l.* and upwards obtained. Farther exertions are now being made to increase the amount, and to carry out the building scheme. The school, under Mr. Young Mitchell's superintendence, is in a very prosperous and thriving state.

Leeds.—It is proposed to have a Crystal Palace for the people's recreation in this vicinity also. A correspondent of the *Intelligencer* suggests that it should be planted in the beautiful valley of the Wharfe, and that the scheme should be organised as a joint-stock concern in 5*l.* shares.

Doncaster.—The new race-stand is nearly completed. The large room on the ground-floor, which is 12 feet high, 33 feet long, and 14 feet wide, is to be appropriated as the weighing-room for jockeys. Immediately above is the saloon, of same dimensions, lighted by five windows, about 10 or 11 feet high. The balcony consists of three steps, and, with the eight stone pillars which support it, is built in the same style of architecture as the centre balcony of the grand stand. There are twelve steps on the roof, which, together with the balcony, will accommodate about 300 persons. There is an octagonal wing at each end of the stand, 8 feet 6 inches by 12 feet, and containing four windows in each. The western one is intended for reporters, and that on the east for the clerk of the course. The contractors are Messrs. Anelay.

Sunderland.—The contractors for the exterior works of the docks (Messrs. Brown and Co.) authorize us to state that the report of a scarcity of elm timber is incorrect, as they are not using elm timber, and have not expressed any fear therefore of being stopped. The work is going on with full vigour.

Edinburgh.—Extensive alterations and improvements are to be made in the large lobbies of the Parliament House, during the recess of the law courts. The light, it appears, is to be admitted by the windows direct from the roof: the dim intermediate windows and ceilings are in the course of being removed, and the walls are to be prepared so as to receive works of decorative art. Rumour says the result is likely, in the first instance, to be a picture-gallery on a small scale.——The city authorities, in conjunction with those of Leith, are making arrangements for whitewashing and cleansing the worst parts of the towns, both externally and internally, so as to be prepared for the advent of Asiatic cholera. This is an example it would be well that every town and village in the empire should at once imitate.——The immediate arrangements for the proposed Scottish Exhibition in 1854 are to be suspended so as to allow of more time for preparatory exertions in the mean time.

Leith.—A scheme has been proposed by Mr Dempster for converting the upper part of the

harbour into a sort of dock, mainly for the sanitary purpose of covering the noxious mud which renders the vicinity unwholesome wherever it is uncovered at the ebb of the tide. He also suggests that the mud, which consists chiefly of manure collected from the gutters and cesspools of Edinburgh and Leith, should be dug out and sold as manure.

Glasgow.—The suspension-bridge across the Clyde has been girded up with strong iron bars, so as to lessen the oscillatory motion previously complained of. The bridge has at the same time been painted of a white colour, and fitted with gasiliers.——The improvements in the northern quarter of the city, in connection with the Cathedral and Royal Infirmary, are to be completed forthwith. The sunken floor of the infirmary, now exposed by the removal of the mound, is to be so faced or veneered as to form a bold rusticated basement, and a new porch is to be formed to suit the reduced level of the ground. A low parapet wall of about 4 feet in height, and placed 10 feet from the building, encloses the whole frontage.

Guernsey.—On 16th May last, says the *Jersey Times*, a contract for the execution of the first section of the plan of the new harbour, and a portion of the second, was entered into with Messrs. Le Gros and De La Mare, of Jersey, for the sum of 46,909*l.*; and Wednesday week, being the anniversary of her Majesty's visit to the island in 1846, was fixed on for the ceremony of laying the first stone. The entire plan, as framed by Mr. Rendel, is estimated at upwards of 180,000*l.*; but the States confine themselves, in the first instance, to the execution of the portions above-mentioned. These portions consist, first, of a spacious quay extending from Glatney Esplanade to the *Terres*, a length of about 1,100 yards; secondly, an arm extending from the South Beach, in a north-easterly direction, so as to shelter the present harbour, and give a large additional area for shipping; and thirdly, the walls of an intended floating-dock which is to be constructed between the new south arm and the old harbour. There seem to be about eighty operative masons employed on the works. The resident engineer is Mr. G. Lyster.

CHURCH BUILDING NEWS.

Harborough.—A lightning conductor has been appended to the church of this place, by Mr. Aldwinckle, the contractor. Mr. Whitby Walpole fixed the wires.

Sudbury.—Some of the roof-timbers of the parish church are decayed and require to be replaced, for which purpose a rate of 1s. in the pound has been agreed to by the parishioners.

Thetford.—St. Cuthbert's Church is nearly finished, the opening having been fixed for 9th inst. The low wall which now surrounds the churchyard wants replacing by an ornamental palisade.

Ledbury.—The new congregational chapel, which has been erected at a cost of upwards of 800*l.* was opened for divine service on Wednesday week. The building is of brick, with dressings of Bath stone for the front. The roof is open, the rafters, seats, &c. being stained oak varnished. There is a deep gallery at the west end, and one thrown over the vestry at the east end, for the Sunday-school children. The chapel will accommodate 450 persons, and nearly 100 of the sittings will be free.

Taunton.—The committee for the restoration of St. Mary's tower have decided to give the contract to Mr. Joseph Staple, of Stoke-sub-Hamdon, he having, some few years since, restored all the Ham stonework of the church, and given satisfaction to the churchwardens. The work, it is supposed, will be three years in hand, it being regarded as a difficult job.

Retford.—The committee for restoring the parish church at East Retford, proceeded on Wednesday in last week to open the builders' tenders, and that of Messrs. Lee and Webster, of Boston, was accepted. The following were the amounts: Wilson, Retford—Restoration, 2,286*l.*; Extension, 1,536*l.*: Young and Knight, Grantham—Restoration, 2,055*l.*; Extension, 1,265*l.*: Lee and Webster, Boston—Restoration, 2,042*l.*; Extension, 1,141*l.*

Bolney, Sussex.—The works so laudably adopted by the parishioners of this village for the building of an additional aisle to their church, and its general improvement, have made considerable progress since our last notice. The parish is fortunate in its architect, and the builder appears to have entered upon his portion of the undertaking with spirit and ability. No inconsiderable part of the improvement arises from the removal of a gallery over the western entrance, and the consequent exposure of an intended handsome window seen through the arch which supports the tower, and which will add much to the general good effect, by giving length to the existing and principal aisle.

Liverpool.—A stained glass memorial window has just been placed in the old church of St. Nicholas. It contains a series of medallions illustrative of the acts of mercy. It was designed by Mr. F. Howard, and the glass staining was executed by Messrs Pilkington, of St. Helen's. ——St. Chrysostom's church, Everton, the foundation-stone of which was laid by the bishop of the diocese in May, last year, was opened on Wednesday in last week. The building is situate in Audley-street, Everton. It is in the midst of a thickly-populated and rapidly-increasing neighbourhood, and has been erected to supply the urgent demand for increased church accommodation in that district. The style of architecture is Decorated Gothic the designs have been furnished by Mr. Raffles Brown. The interior is in keeping with the general design. There is a centre and two side aisles, the latter terminating with north and south transepts. On each side of the centre aisle is a series of archways, rising from light columns of polished granite. There are no galleries except those in the transepts. The organ is placed on the ground-floor, and enclosed within a small archway on the north side of the approaches to the communion-table, stalls for the choristers being placed on each side, in front of the altar. There is accommodation for 1,200 worshippers, all in pews. The sittings are arranged in five classes, the last two of which comprehend 408 sittings free, and 250 sittings to be let at an annual rent of 5s. each.

Wycliffe.—The parish church is at present undergoing repairs. The whole of the old pewing is removed, and will be replaced in the nave by open benches, and in the chancel by stalls. A new pulpit and reading-desk are also to be erected. The stained-glass, of which a considerable quantity remains, is now in the hands of Mr. Wailes for repairs and resetting. The work is under the superintendence of Mr. Austin, architect, Newcastle-on-Tyne.

Newcastle-upon-Tyne.—The Baptist new chapel in Berwick-street is completed and in use. It has about 800 sittings, and comprises a room underlying the whole chapel (but not underground), for schools, social meetings, &c. and measuring 79 feet by 38 feet 6 inches. There are also vestries for the pastor and the congregation, class-rooms, and various other accommodations. The cost, including site, will be about 3,200*l.*

Hereford.—At a vestry meeting of the parish of All Saints, called in consequence of the archdeacon's letter to the churchwardens on the dangerous state of the tower and spire of the church, a committee has been appointed to obtain certificates as to the state of the fabric, and the cost of placing it in a state of safety; as to the cost of entirely removing the spire and repairing the tower; the cost of erecting an edifice of similar importance, and the best mode of obtaining funds for that purpose.

Pont Robert-ab-Oliver (Meifod).—A new church was consecrated in this part of Montgomeryshire on 9th ult. In addition to the site and a liberal subscription to the building fund, the Earl of Powis has presented an east window of stained glass, manufactured by Messrs. Powell and Son.

Holyhead.—Plans and specifications for a chapel of ease to the parish church have been prepared, and a contract entered into for the erection of the proposed edifice, which will be capable of accommodating upwards of 700 persons. The Marquis of Anglesey has given a site. The funds are still short by 1,000*l.* The population of this place has been more than doubled within the last six years.

Stratford-on-Avon.—The foundation-stone of the intended new Church of St. Thomas the Great was laid on Wednesday in last week, by the Rev. H. Harding, vicar of the parish. The site is in the Guild Pits. The architect is Mr. James Murray, of Coventry; and the builders are Messrs. Joseph Mills and Son, of Stratford.

Preston.—Two new churches will shortly be erected in Preston, one on the Ox Heys estate, and the other up Ribbleton-lane.

Kirkby-Wharfe.—The mausoleum built by Lord Londesborough, as a burial-place for his family, on a parcel of ground adjoining the churchyard of Kirkby-Wharfe, has been consecrated by the Archbishop of York.

Lee.—On Saturday last the foundation-stone of a new district church for this parish, to be called Christ Church, was laid by the Rev. George Lock, the rector, who then completed the 50th year of his incumbency in the rectorship of Lee. The site is in Lee Park, near the Blackheath station. The edifice will be in the Early English style, with a spire 150 feet high, from a design by Mr. G. G. Scott. The works will be constructed by Messrs. Piper and Son. There will be accommodation for 1,000 sittings, 300 free. The funds will be raised by subscription, but at present only 3,000*l.* out of the 6,000*l.* required have been contributed.

Selkirk.—Christ Church, a new episcopal edifice here, was opened on 21st ult. for divine service. It has accommodation for 130 worshippers, and has cost between 600*l.* and 700*l.*

Glasgow.—The plans for the internal renovation of the Cathedral have now been finally decided on. The alterations principally consist of the removal of the galleries, staircases, and all the seating of the edifice, the clearing out of the screen separating the choir from the nave, as also the connecting of the Lady Chapel with the choir by the removal of the plaster-work, and what has been denominated the "stark-staring" stained windows. The whole of the choir is to be reseated with oak benches and stalls, and a small gallery is to be formed at the west end, in connection with the organ gallery, which will form, when required, the seat of Royalty. The roofs of the whole building are to be strengthened and remodelled, Mr. Burn, the architect for the Woods and Forests, being of opinion that their present defective construction has had a serious effect on the outer walls. All the slating is to be taken off and replaced with lead. The expenses except reseating, which is to be borne by the corporation, are to be defrayed by a grant of about 4,000*l.* voted in the last session of Parliament. On the 1st of March next the operations will commence, and the whole will be finished during the summer.

FOUNDATION-STONES AND WRITTEN INSCRIPTIONS.

THE careless manner in which inscriptions, &c. have usually been placed in bottles for foundation-stones without any precautions being taken to guard against breakage or imperfect stoppers, induced me to adopt the plan which you have done me the honour to quote in No. 543 of the *Builder*. But, sir, in the quotation should be added a very important part, viz. that "the inscription was written with *Indian* ink;" and until a better substitute can be found, I strongly recommend its universal use in preparing all manuscripts intended to convey information to future ages. It is well known that all the inks in common use are far inferior to those used by the ancients,—that our modern inks soon become pale, and in course of time almost if not entirely invisible. It is a patent fact, that Doomsday Book, after the lapse of nearly eight centuries, is in a much better state of preservation than the state papers of the period of our last two kings.

The inks used by our forefathers, I believe, contained carbon; and as that substance is the base of Indian ink, all documents prepared with it must, from the indestructible property of the carbon, remain unchanged so long as they can be preserved from damp and other destroying influences; and I am not aware of any plan so likely to secure their preservation as that I have adopted, which, I trust, sir, you will strongly recommend to all parties concerned in laying foundation-stones. WM. CHAPMAN.

NOTES AND QUERIES.

ARCHITECTURAL AND ARTISTICAL.

It may appear a work of supererogation, arguing no small amount of vanity on the part of the writer, to suggest any improvement in your already perfect columns. To propose to increase the interest of your pages would be too much like (not "to put too fine a point upon it") proposing to enhance the perfume of the rose, or to heighten the brilliancy of the diamond.

I pay you these compliments with a view to secure your pardon for making the suggestion which I now submit to your editorial wisdom. It is this—to devote, every week, or as often as possible, a portion of a column to a new heading, under which your professional readers may make *notes* or *queries*, and answer them. I am satisfied that your young contemporary is so liberal that he will have no objection whatever to your borrowing his name.

I would insist that the matter noted or inquired about should have some interest, and be strictly professional, and should be expressed always to the point, and without verbiage.

As explanatory of my suggestion, and as a commencement, I submit the following

NOTES AND QUERIES.

I. At Havre, fronting the *quai*, is a clock-dial illuminated very clearly in a way just the reverse of the usual way; viz. the face of the dial is dark, and the hours and the two revolving hands are bright. How are the hands managed?

II. In Wren's "Parentalia" (Ed. 1750, p. 262) mention is made by Wren, in a letter from Paris, of an English artist, of the name of Matthews, who was then employed in designing for the Arras weavers, in the Rue Gobelins. That an Englishman should be so employed at these royal works, when in the zenith of their reputation, is somewhat remarkable: is anything known of this artist?

III. Is there any biographical notice (or can your readers furnish any) of Hugh May, comptroller of the works at Windsor Castle, whom Wren succeeded in 1684? S.

ST. GEORGE'S HALL, BRADFORD.

THE New Music Hall in Bradford has been inaugurated. It was commenced in September 1851, from the designs of Messrs. Lockwood and Mawson, and has cost, we understand, 13,000*l*. The following official account of it has been forwarded to us. The external walls and columns are of Yorkshire stone:—

The front or western elevation is 75 feet in height from the ground to the apex of the pediment, and is composed of a rusticated basement 27 feet high, surmounted with Corinthian columns and pilasters, which support the entablature. The principal entrance is by three arched doorways, with folding doors on the basement of this façade. On each side are niches containing bronze candelabra. The centre of the arches over the doorways are enriched with masks executed by Yorkshire artists. The lower parts of the intercolumniations are occupied by windows 14 feet high, and the upper with circular shields in stone, bordered with wreaths of oak leaves. The south side elevation consists of a rusticated basement story, with deeply recessed windows, between which are elaborately carved festoons of fruit and flowers. Above this story are Corinthian columns and pilasters, supporting an unbroken entablature the whole length of the building. The intercolumniations are filled with eight arched windows, 14 feet high. The entrance leads into a vestibule 46 by 25 feet and 22 feet in height. From the centre of the floor springs the grand staircase, branching off to the right and left, and terminating in the gallery on each side leading to the stalls and area. At the foot of the staircase on either side are bronze candelabra 12 feet high with nine branches to each. The hall itself is 152 feet in length, 76 feet in breadth, and 54 feet high. It is divided into area, stalls, and gallery. The first is 96 by 45 feet, and will accommodate 1,000 persons with seats. The stalls are raised 12 feet above the area, and contain 550 seats. The front of the stalls is ornamented with foliated scroll work, executed in Carton Pierre: in the centre of each scroll are two emblematic figures in alto relievo. The gallery is carried round three sides of the building, and contains 1,800 seats. The hall is thus calculated to hold an audience of 3,350 persons. The eastern or orchestral end is semicircular, with a diameter of 50 feet: on either side of the organ are Corinthian pilasters springing from the orchestra and supporting the entablature. A space of 6 feet from the cornice to the ceiling is coved and divided into panels enriched with a deep border of vine and ivy leaves, fruit, and flowers. Around the ceiling runs a border of the same character. The ceiling itself is divided into four compartments by an inner border of scroll work, with central ornaments of water leaves and flowers. The hall is lighted by sixteen arched windows, 14 feet high. The method of lighting it in the evening is by a continuous line of 1,800 gas-jets from pipes carried entirely round the hall on the upper surface of the cornice (as in the Liverpool-hall). The ventilation is effected by circular apertures 7 inches in diameter, pierced through the exterior moulding of the outer border of the ceiling, continued entirely round the four sides of the latter, and give a ventilating surface equal to a superficial area of 130 square feet. The heating is by the usual hot water apparatus. Separate entries are provided for each class of the audience. On a level with the stalls are refreshment and cloak-rooms—the former 45 by 25 feet, for the accommodation of the occupants of that portion of the hall; and a similar arrangement has been made for those of the area.

THE PROVIDENT SOCIETY OF BUILDERS' CLERKS.

SOME time since we inserted a letter having reference to matters connected with builders' clerks. We are glad to learn that it has led to the formation of a society for benevolent purposes, and for protection of the general interests of its members, by affording a ready means of communication between employers and clerks requiring situations, obtaining information for the use of members, and making provision in cases of sickness and the infirmities of age.

We know not whether the rules and regulations of the society, including the declaration of its purposes, have as yet been settled; but if discreetly gone into,—and considering the general intelligence and education of the class who are to found, establish, and support such an institution we have no doubt it will be,—the Builders' Clerks' Provident Society cannot but be of much importance in ameliorating the condition of its members in declining years, and benefiting both employed and employer.

It affords us much pleasure, therefore, to draw the attention of our readers to an advertisement in our columns as to a meeting on the 12th instant, for the furtherance of the interests of the new society.

FALL OF HOUSE IN THE STRAND.

FOR some time past the demolition of several houses at the west corner of Arundel-street, in the Strand, has attracted the attention of the passengers. The corner house, a high, narrow building of brick, with the heavy wood-work in use about 200 years since, had been shored with timbers reaching nearly to the top of the gable. This morning (Thursday), at about half-past seven, the house to which we allude fell suddenly to the ground, causing the death of Mr. Thompson, clothier, Mrs. Thompson (his wife), and the foreman of Mr. Thompson.

From inquiries made on the spot, we learn that the house fell without the least notice. Mr. Bayliss, who lives opposite, was looking at the men at work a few minutes before the accident happened, and he saw nothing unusual.

A bricklayer, who was at work on one of the adjoining houses, saw the chimneys "fall," as he says, "perpendicularly;" in fact, the house seems, as another eye-witness stated, to have "crept down." The general impression as to the cause of the accident is, that the foundation of the fallen house must have been too much undermined, and that it fell from below the shores. Nine men were at work in the new foundation, eight of whom were enabled, almost by miracle, to jump out of the way. The foreman was, however, not so successful, having had his leg broken by some of the falling timbers.

Mr. Thompson's servant-maid was in the cellar at the time of the accident, and was got out unhurt.

The house has fallen clearly away from its neighbour, leaving no adhesions. The upper room is painted black, having been used by a photographic artist: in one of the other rooms some pictures are left uninjured hanging to the walls. Messrs. Lucas are the builders who were at work.

PROPOSED NEW CATTLE-MARKET, COPENHAGEN-FIELDS.

THE works in preparation of the ground for the proposed new cattle-market have been commenced in earnest, and large numbers of men are now engaged on the site. The levelling of the ground, sewage, and enclosures, are being executed by Mr. Willson, at a cost of upwards of 40,000*l*. to be completed in thirteen weeks from the 1st of August.

Mr. Bunning's own estimate for the whole is 278,721*l*. which includes preparing and paving the whole area, pens to contain 42,320 sheep, and rails to tye 6,794 bullocks; enclosing the market with wall and railing, covered pig and calf market, banking-houses, clock tower, tanks for water and gas; roads; lairs for about 3,000 bullocks; sheep lairs; public slaughter-house; private slaughter-houses; two taverns, and clerk's residence; two public-houses, &c.

NOTES OF IRISH WORKS.

A NEW chapel has been built at Glan, near Oughterard. The plan provides accommodation for a moderate congregation, and the edifice has been erected in a plain but substantial manner.

——A new school-house is (we are informed) to be built at same place, on a site granted by Mr. C. St. George.

A new tower, belfry, and entrances, have been added to the R.C. church at Bray, county Wicklow. The tower is central, flanked with buttresses terminated by crocketed pinnacles, and surmounted by an embrasure parapet. The exterior is of punched and drafted granite, ashlar, and the dressings of chiselled stone.

At Booterstown, new national schools for boys have been built in a plain but apparently suitable and substantial style. At the Blackrock we perceive additions have been made to the church. The new buildings, as well as the old structure, are in the Early Gothic style.

A new school-house is to be built at Leam.

A new R.C. church and schools are to be erected at Collanamuck.

We are told that plans have been made for new schools for boys, girls, and infants of both sexes, with resident's apartments attached, to be built in connection with St. Stephen's Church, Dublin. Mr. Darley, architect.

A new R.C. church has been built at Athewry and dedicated lately.

The Board of Superintendence of Roscommon Gaol have determined on erecting an addition to the female's side of the building. Plans have been furnished, and tenders are invited.

The butter market at Londonderry is to be completed.

A new church is in progress of erection at Ravensdale, Dundalk, the gift, we believe, of Mr. Acheson Thompson.

IMPROVEMENTS IN LONG-ACRE AND ITS VICINITY.—Extensive alterations and improvements in Long-acre are contemplated by the Mercers' Company, which has property in that neighbourhood reaching along the northern boundary, from Drury-lane to Upper St. Martin's-lane, and which is now continually falling into the hands of the company, in consequence of the termination of the leases, after the expiration of a tenure which, in most instances, has been that of one hundred years. Several houses have been disposed of by auction, situate in Hanover-street and Charles-street, Drury-lane, by order of the company, which are to be removed for the purpose of forming a new street from Drury-lane to Endell-street, in the rear of Hullah's Concert-rooms and of the coach manufactory at the junction of Long-acre and Hanover-street.

Miscellanea.

THE NEW YORK EXHIBITION.—Mr. C. P. Roney, the secretary of the Great Industrial Exhibition of Ireland, writing to Mr. Deane, says,—"Since I last wrote to you I have been to New York, and, of course, to the Exhibition. When I saw it, just a fortnight ago, it was still in a very incomplete state. The picture-gallery was not nearly finished, neither was the machinery in Motion-court. It was said by the superintendents that they would be ready to-day. If they be it must be by the appliance of forces that they had not at their disposal up to the time of my visit. Notwithstanding all the boasting and vain-glorying of the Americans, it is a comparative failure. There is not a single grand effect produced on the mind of the spectator, either at his entry or at any other time. The only striking point is the dome. This is circular, and about 120 feet from the ground; but its diameter at the commencement of the arch cannot be more than 50 feet. It is elaborately and tastefully painted—indeed, so is the whole building; but, as I have already said, there is nothing grand about the whole thing. Marochetti's colossal statue of Washington on horseback is striking and effective; but, to my mind, the best thing as a group, is a series of casts of the Saviour and the Twelve Apostles, from the originals by Thorswalden. The light upon these figures is admirably managed, and the whole is telling. The rest of the statuary is good, bad, and indifferent—the latter predominating. As I expected, from what I saw and learned on the Continent last winter, the paintings are, with scarcely an exception, very mediocre; perhaps, however, their effect may be improved when they are in their gallery of 21 feet in width only. Altogether, I hesitate not to say that the Dublin Exhibition runs away from it miles ahead. The American section is weak; for, like ourselves, they have yet to become a manufacturing people."

ACCIDENTS.—On Saturday last four labourers fell, and two of them were, it is feared, fatally injured, by the fall of a scaffold at Lord Denman's town residence in Upper Portland-place. The putlocks supporting the scaffolding gave way.——A journeyman painter at Liverpool has met with the cause of his death in rather an extraordinary way. While engaged in his business, about three months since, at a mansion near the town, he was slightly bitten by a small dog, and afterwards died of hydrophobia.——As an engineman at Wheal Reeth, was oiling the engine-gear, his head came into contact with the fly-wheel, which severed it from his body, and scattered his brain in all directions. The poor fellow was drawn among the machinery, and was so dreadfully mutilated that his bowels gushed out, and every bone in his body was smashed.——Mr. John Hale, the railway contractor, was killed lately by falling from a scaffold erected against his house, called Felcotes Hall, near Tunbridge Wells. He had recently purchased the estate upon which the mansion stands, and was superintending the outside repairs. ——A labourer while at work in a timber-yard at Miles Platting, the other day lifted an axe in cross-cutting a tree, and was about to strike when the blade flew off and inflicted a wound from which he has since died.——An infant died last week in a railway carriage from foul air accumulated from the breath of a number of passengers. A verdict on inquest was given accordingly.

METROPOLITAN IMPROVEMENTS.—By order of the commissioners for carrying out the City improvements, a further portion of the houses in Ray-street, Clerkenwell, are forthwith to be demolished, to complete the direct line of communication from Blackfriars-bridge and Farringdon-street to Islington and the Great Northern terminus at King's-cross. The long-talked-of widening of Fenchurch-street is at last being carried out, and the whole of the houses on the south side, extending from Mark-lane, crossing London-street and Railway-place up to Church-row, contiguous to the East-India Company's warehouses, are, it seems, being demolished for that purpose. A great many houses are also now being pulled down on the south side of Threadneedle-street in Finch-lane, and Spread Eagle-court, to complete the approaches to the Royal Exchange, as also in Dowgate-hill, to widen and improve that thoroughfare.

SEWAGE OF LARGE CITIES.—At a late meeting of the Glasgow Agricultural Society, a motion was adopted to the effect—"That one or two premiums be offered for essays on the best means for collecting, storing, selling, conveying, and distributing as manure for land, the sewage of the city."

THE BELLS OF CHURCHES IN FRANCE.—The following are said to be the weights of the large bells of different churches in France:—That of Sens 16,500 kilogrammes (16¼ tons), the next size 13,000; Paris, 13,000; Rheims, 12,500; Bordeaux, 11,250; Lyons, 9,000; Notre Dame de la Guide, 8,500; Rouen, 6,000; Auch, 6,000; Cambrai, 5,500; Lille, 5,500; Chalons, 4,500.

VALUE OF PROPERTY IN BIRMINGHAM.—The land fronting to Temple-row and Bull-street, belonging to the council of this borough, was sold by auction by Messrs. Cheshire and Gibson, on Tuesday in last week. The first lot, containing 132 yards, sold for 2,920*l.* 10s. being at the rate of 22*l.* 2s. 6d. per yard, or 107,085*l.* per acre; the second lot of 63¼ yards went for 915*l.* 4s. 2d. or 14*l.* 7s 6d per yard; the third, of 63¼ yards, for 831*l.* 5s. or 13*l.* 2s 6d. per yard; the fourth of 63 1-9th yards, for 765*l.* 4s 5d. or 12*l.* 2s. 6d. per yard; the fifth, of 63 1-9th yards, for 781*l.* or 12*l.* 7s 6d. per yard, and the sixth, of 61 8-9th yards, or 843*l.* 4s 8d. or 13*l.* 2s. 6d. per yard; making a total of 7,056*l.* 8s. 3d. for 447 1-9th yards. Mr. Joseph Gillott was the purchaser of the whole.

VALUE OF GROUND IN MANCHESTER.—Messrs. John Dugdale and Co. of Piccadilly, have purchased a plot of ground, now partially covered with houses, bounded by Kennedy-street, Cooper-street, and Booth-street, and are about to erect a noble warehouse upon it. The area is about 1,000 square yards, and the price, we hear, is 10*l.* per square yard, exclusive of a small acknowledgment to be paid yearly, in the nature of a chief-rent. The corporation are purchasers from Messrs. Dugdale, of about 48 yards, to be thrown to the width of Kennedy-street.—*Manchester Courier.*

VALUE OF LAND AT DONCASTER.—On Monday last, says the local *Gazette*, Mr. Webb offered for sale by auction, at the Angel Inn, a freehold property, consisting of butcher's shop, stabling, &c. in Wood-street, nearly opposite Wood-street Hotel. The buildings on the land are not of much value. It is the frontage to this thoroughfare, being 52 feet, which was considered valuable, and for this a brisk competition took place; and it was ultimately knocked down to Mr. Wilburn for 405*l.* being upwards of 300 square yards. This is at the rate of about 24s. per yard; and when it is considered that it is not in one of the most frequented streets, it shows that valuable land for business purposes is eagerly sought for.

VALUE OF GROUND IN LIVERPOOL.—The trustees of the Liverpool Dock having occasion to purchase 28,836 square yards of land for increased accommodation in the docks, had to pay for it 1*l.* 2s. 11½d per square yard, or a total of 33,113*l.*

THE ARCHÆOLOGICAL SOCIETY FOR NORTH OXFORDSHIRE.—A public meeting was held on Monday last, in the Town-hall at Banbury, to give effect to certain resolutions passed at a meeting at Calthorpe House, relative to the formation of an archæological society for the North of Oxfordshire. Although not a large company, the Council Chamber was quite full. Lord Alwyne Compton, Colonel North, M.P. the Mayor of Banbury (Mr. T. Draper), the Rural Dean (Rev. E. Payne), the vicar of Banbury (Rev. W. Wilson), and other reverend gentlemen, medical men, and others, are among the number of those named in a report of the meeting in the *Banbury Guardian*. Lord Alwyne Compton presided. Mr. Miller, one of the secretaries, said that the Bishop of Oxford had consented to become a subscribing member and patron. Lord Alwyne Compton had accepted the office of president for the year. Those who had consented to be vice-presidents were Colonel North, M.P.; Mr. A. Cartright, and Mr. Guest, of Saudford. Mr. Miller read a letter from Sir Henry Dryden, in which he suggested that the title which had been adopted trenched upon other societies, and expressed a doubt whether there were not too many archæological societies already. A discussion ensued as to the name of the society, resulting in its being designated "The Archæological Society for North Oxfordshire." The patron and officers were then appointed. Rev. J. W. Hewitt consented to act as editor of the society's publications. A long conversation was held on the subject of meetings and the places where they should be held. Rules for the government of the society were ordered to be drawn up by the general committee.

NEW CHURCHES IN LAMBETH AND SOUTHWARK. —We hear that arrangements are in progress for the erection of three new churches in the parish of Lambeth. One will be situate at the lower end of Upper Stamford-street. The second will be erected near the corner of the Waterloo-road and the New-cut, and a third will be erected at the London-road end of Kennington-lane. Other churches in the widely-extending parish of Lambeth are also to be built as soon as circumstances will admit. In the adjacent parish of St. George-the-Martyr, Southwark, it is intended to erect a new church. In the parish of Christ Church, Blackfriar's-road, a new church is to be erected, the site of which will, in all probability, be in Friar-street.

THE LEEDS MONUMENT TO WELLINGTON.—It has been decided that the memorial in Leeds of the Hero of Waterloo shall be a colossal figure of the duke. At a recent meeting of the committee of subscribers, it was resolved that the commission for the statue be given to Baron Marochetti. The cost will be about 1,500 guineas.

RESUMPTION OF WORK BY THE GUTTA PERCHA COMPANY.—By the calamitous fire at the Gutta Percha Works, we understand 300 of the Company's hands, and about 700 belonging to the various Telegraphic Companies were thrown out of employment. We are glad to observe, and willingly mention, that the Company has already resumed the manufacture of Electric Telegraphic Wire, Tubing, &c.

THE PROPOSED MIDLAND OBSERVATORY.—Our readers may remember an offer made by Mr. H. Lawson, of Bath, to the people at Nottingham and the Midland district at large, of a valuable collection of astronomical and meteorological instruments for the establishment of a Midland Counties observatory at Nottingham, on the condition that 10,000*l.* should be subscribed for the necessary expenses. The persons interested have only raised 3,500*l.* after much more than a year's canvassing, in addition to 1,000*l.* given by Mr. Lawson himself, and, in consequence, we regret to hear that the offer is likely to be withdrawn. Mr. Lawson, in a letter to the managing committee, says,—"I can no longer, from my age and state of health, leave my offer or plan an open question, but must withdraw it altogether on the 1st of October next if the requisite sum of 10,000*l.* is not ready, to fulfil or carry into effect my engagement with the public." The committee talk of making an application to the Treasury; but it is not likely that the Government will do for the inhabitants of the Midland Counties what they might easily do for themselves, if they had the taste and the spirit. Not long since, as the *Bath Chronicle* reminds them, the inhabitants of Gloucester lost a valuable museum, worth 1,000*l.*, because they would not provide a room for its reception. Such facts as these throw a strange light on the boasted march of civilization. As for the proposed Midland Observatory, were such a one formed, we think it highly probable that in these days of centralization and of uniform time throughout the country, it would become, if rightly managed, the first in rank, as it would be the most central in position, of all the observatories in England. This distinction will be lost, of course, if the Midland people have not public spirit and liberality enough to lay hold of the chance of obtaining it now that they have the fortunate offer.

FRENCH SCHOOL OF DESIGN.—The annual distribution of prizes of the School of Design, Architecture, and Sculpture, applied to manufactures, took place on Sunday week, in the amphitheatre of the College Louis-le-Grand, M. Blanche, secretary to the Minister of State, in the chair. A great number of persons connected with the arts, and a numerous auditory, were present. After M. Belloc had stated the general results of the year's studies, M. Blanche read an address, encouraging the pupils to persevere in their efforts, and pointing out how wide a field was open to each in the world by the increasing improvement in every kind of manufacture. The distribution of prizes was then proceeded to.

FALL OF A WAREHOUSE IN MANCHESTER.—An alarming circumstance occurred in Manchester on Tuesday in last week, in an extensive warehouse in High-street. A loud crack was heard in a department used for Irish linens and bed-ticks, and the attendants had scarcely quitted their posts before the floors of two rooms settled down quickly, and bulged in the floor over the cellar, which did not go down, however, as it was supported beneath by piles of calicoes in the grey. The exterior walls are considerably out of the perpendicular, bending inwards, but that, it is said, does not appear to be the result of the falling in of the two floors.

BATTERSEA-PARK AND IMPROVEMENTS.—The Commissioners of Woods and Works having settled with all claiming compensation, the area of the proposed park has been cleared, with the exception of the British Flag beer-shop and a few small tenements, which will be forthwith pulled down. The sum allowed to the proprietor of the Red House was 11,000*l.* The whole area is to be ploughed up and manured. The construction of the suspension-bridge, which had been stopped for some months, has been resumed. On the Surrey side of the new bridge a vast number of detached villa residences have already been commenced.

THE "COPPER TRADE."—While the camp was at Chobham, (and probably still), numerous boys were constantly engaged in picking up the immense quantities of copper caps on the Common, which were used by the regiments encamped there. The boys sold them to ironmongers for old copper, and realized 2s. or 2s. 6d. a-day by their industry.

MODERN BUILDINGS AND BUILDING LEASES.—

"'This ground,' says Tom ('my wealth increases'),
'I've let on snug, short building leases:
Ere long these houses, new and fine,
By right, will ev'ry one be mine.'
'If that's your aim, you're safe,' says Neddy,
'For see!—they're *falling in* already.'"

—*Bedford Times.*

RANSOM'S ARTIFICIAL STONE.—With respect to the award of the official referees in the matter of the new material, Ransom's artificial stone and the hollow bricks, named in your paper, I beg to say that neither the merits nor demerits of either one or the other had anything to do with the question, which was, whether either one or the other was a material that could be permitted to be used under the Buildings Act? As regards proposition number one, it is sufficiently manifest that whatever the merit of the material, and with this all seemed impressed, artificial stone could not be held to be stone. Of the admirable nature of the material, and its possible application to building purposes generally, there seemed to be little question. I am induced to trouble you with these remarks, as my opposition to either material was of a technical character.—R. L. SIBLEY.

THE PLOUGH SUPERSEDED.—Mr. Mechi writes to the *Times* stating that he has got a machine from America which will "not only deeply, cheaply, and efficiently cultivate and pulverise the soil, but at the same time sow the seed and leave all in a finished condition. It will also, by a simple inversion, cut and gather the corn without any rake or other complication; while both in cultivation and harvesting its operation will be continuous and without stoppage." He says "the implement when complete will weigh about 20 to 25 cwt. will require a pair of horses, and will represent the power of about eight to twelve, or more, real horses. The implement for digging will require one man and one boy only, including the management of the steam-engine; in reaping, the same, with the addition of three men to bind as the corn falls into their arms. The men will be carried on the machine."

ERICCSON'S HOT-AIR MACHINE.—Experiments announced as about to be made at Havre by commissions of the Institute and the Minister of Marine, on the hot-air machine of M. Ericcson, have taken place, but the report of the commissioners is for the present kept secret. A Havre journal states that the experiments were not so conclusive as had been expected, in consequence of the imperfectness of the machine, from its having been got up hastily. It has unfortunately happened in various instances within our experience that inventions of great apparent importance or desirability have been delayed, not merely temporarily, but for a long series of years, if not altogether relinquished, from "slight imperfections" ever on the eve of correction. We hope this is not to be the fate of Ericcson's engine, although we believe the hot-air ship at New York, which was to have been in London so long since, was detained at New York by some of these "slight imperfections."

ANCIENT ENTRENCHMENT IN A WOOD NEAR HEREFORD.—A correspondent of the *Hereford Times* gives an account of a curious earth-work, of a cruciform arrangement, tipped with Egyptian Tau-shaped extremities, near St. Margaret's. As described, it consists of a longitudinal embankment of earth or soil, thrown up in a half-round shape, the base of which is about five yards wide, and about four feet high in the centre above the adjacent ground. And although brushwood is still growing, and timber has fallen thereon and about it, from the partially decayed stumps of aged oaks still visible, evincing its being of considerable antiquity, yet it maintains that shape with singular regularity throughout, except where it has been cut through by a temporary road through the wood. The extreme length is about sixty-eight yards, and no stone is perceptible in its formation. The ground at the south, east, and north extremities decline from the centre, the northern being the lowest and the western on the highest ground. It is situated in an extensive wood called "St. Margaret's Park," about thirteen miles south of Hereford, and about half a mile east of St. Margaret's Church. A shrewd country mason called it a "Roman cross." The wood having been felled two years ago caused it to be visible, and brought it to the recollection of the few inhabitants of that comparatively solitary district. Its existence, the writer adds, does not seem to have been known until some twenty years ago, when the wood was partially ridded, as the Rev. John Duncumb, who wrote a history of Herefordshire, in quarto, and who resided within two miles of the spot, is silent on the subject.

MONUMENT TO WATT.—The directors of the Edinburgh School of Arts lately made a purchase of premises long rented by them in Adam-square, and resolved to denominate the institution "The Watt Institution and School of Arts." They also resolved to erect a monument to his memory in front of the premises, and intrusted the execution of it to Mr. P. Slater, of Edinburgh. The statue, which is to be of stone, is to be placed on a pedestal, and the whole will be about 14 feet in height. It is expected that the monument will be completed and inaugurated on 19th January next, the anniversary of the birth of Watt. It will be placed about 9 feet from the pavement, skirting Adam-square.

"LOOK TO YOUR COIN DEPOSITS."—Some of our professional readers *have* been looking to their coin deposits, and they have found, as heretofore, that the chance of posterity benefiting by the numerous legacies left them, or at least intended to be left them, by the present generation, in the hollows of foundation-stones, is indeed but small. The latest discovery we have heard of is, that the coins, from a sovereign to a farthing, deposited by the Grand Master of the Essex Freemasons in the cavity of the foundation-stone of the new Church of St. Mary Magdalene, at Colchester, have all vanished. In this case bottle, parchment, and all were carried off. So "look to your coin deposits."

TELEGRAPHIC PROGRESS.—The magnetic telegraph is now in full operation between Belfast and Portpatrick, in Scotland. A connecting link is expected to reach Dublin forthwith, when there will be an unbroken line of telegraphic communication between Dublin and London. The working of the submerged line proceeds satisfactorily.——The substitution of the magnetic for the electric telegraph appears to be a decided step in telegraphic progress, but what shall we say to a proposal for a Transatlantic telegraph without wires! Mr. Lindsay, of Dundee, has been lecturing at Glasgow on a project of his for carrying messages to any part of the globe without wires, by making the waters of the ocean their bearer. He has succeeded, it would appear, in sending his messages short distances without submarine wires; but whether there is any limit to this plan is still untried. Mr. Lindsay reasons that, if so many feet of plates send a message so many yards, so many more feet would send it a proportionate distance beyond; but this is by no means certain. Nevertheless that it was possible, however improbable, that marine telegraphs might yet be made without submarine wires we long since suggested, and still admit.

[ADVERTISEMENT.]

TO THE EDITOR OF THE BUILDER.

SIR,—Observing in one of the late numbers of the *Builder*, a letter referring to Messrs. Clark and Co.'s Patent Revolving Shutters, and having daily a great number of applications respecting the one they erected for me at my premises, 78, 79, and 80, Fleet-street, which I believe to be the largest ever made, to save myself trouble, and for the benefit of your readers, I beg to state, it has given me the greatest satisfaction, and its advantages are made manifest by the fact, that one of my men can open or close one of the largest shop fronts in London (18 feet by 24 feet) in thirty seconds, with the greatest ease, that formerly occupied the time of three men upwards of half an hour, and obviates the great risk of breaking the glass and damaging the premises, which always will attend the use of the common lifting shutters. It also presents a greatly improved appearance, and has attracted universal attention.

I remain, sir, your obedient servant,
(Signed) CHARLES M'LEAN.

Fleet-street, Aug. 29, 1853.

TENDERS

For three houses, and addition to dwelling-house, for Mr. Wolton, at Epping. Mr. Andrew Wilson, architect.

Davis, Epping	£1,309	0	0
Wilson, London	1,143	3	0
Field and Sons, Enfield	1,110	0	0

For rebuilding Mulberry-tree public house, Commercial-road. Mr. J. Harrison, architect.

Thompson and Crosswell	£1,742	0	0
Perry	1,490	0	0
Green	1,423	0	0
Clever	1,418	0	0
Enor	1,306	0	0

For building three villas at Epping, Essex. Mr. Andrew Wilson, architect.

Davis, of Epping	£1,309	0	0
Joshua Wilson, of London	1,143	0	0
Field and Son, Ponder's End (accepted)	1,110	0	0

For building seven cottages at Plaistow, Essex. Mr. Andrew Wilson, architect.

Holmes, West Ham	£1,900	0	0
Nivett, Stortford	1,890	0	0
Heath, Plaistow	1,884	0	0
Reed, Stratford	1,875	0	0
Morton, West Ham	1,760	0	0
Joshua Wilson, London (accepted)	1,717	0	0

For a pair of semi-detached villas to be built upon the National Freehold Land Society's estate at Muswell-hill, Middlesex, for Mr. John Garritt. Mr. W. P. Griffith, architect.

Pickford	£1,890	0	0
Warren and Elliott	1,249	0	0
Ryden	1,225	10	6

For additions and alterations to a warehouse, Snow-hill. Mr. James Talbott, architect. Quantities supplied.

Piper and Sons	£2,470	0	0
Haynes and Eyre	2,418	0	0
Mansfield and Son	2,395	0	0
Pritchard and Sons	2,395	0	0
Lawrence and Sons	2,247	0	0
Brass and Son	2,097	0	0
Palmer and Son (accepted)	1,818	0	0

TO CORRESPONDENTS.

The Accident at Sydenham.—We are forced to postpone article on this subject till next week.

"C. H." "O. B." "W. G." "F. W." "J. G." "H. G." "W. P." "N. De C." "H. B." "J. C." "J. P. W." "J. B." "T. O." (lead), "B. B." "W. S." "E. W. T." "H. H" (Bravo!), "J. C." "A Builder's Clerk," "R. L. S." "Mr. A." "W. J. S." "C. B." "Nottingham," "T. A." "A. S." "Capt. N." "Weekly Reader."

"Books and Addresses."—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

SALES BY AUCTION.

Purleigh, near Maldon, Essex.—Freehold Land.

J. NORMAN and SON have received instructions to SELL, by AUCTION, at the MART, on WEDNESDAY, SEPTEMBER 28, at TWELVE, 119 ACRES of valuable FREEHOLD LAND, with barns, stables, and cow-sheds thereon, in the parishes of Purleigh and Hazeleigh, Essex, and lately one of the best brick earth in the county. It is situate in mile of Maldon, and 8 miles of Chelmsford. At present let to a Mr. Ellis. May be viewed fourteen days previous to the sale, when particulars and plans may be had on the premises, of Messrs. White, Hutchinson, and White, solicitors, 3, Co. at Maldon, South-street, London; at the White Hart Inn, Chelmsford; the Fell, Purleigh; the Oak Inn, near Purleigh; the Castle, at Wickford; at the Auction Mart; and of the Auctioneers, 4, Little Britain, London.

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MESSRS. ROBINS will SELL by AUCTION, at their ROOMS, 38, Covent-garden, on TUESDAY, SEPTEMBER 20, at TWELVE, STATUARY MARBLE CHIMNEY-PIECES, some richly sculptured, suitable for first-class Great Gate Cots, for offices of a less expensive character, with trusses, bases and slabs, black and vein marble chimney-pieces, in great variety of vein marble, also a stone sarcophagus monument. On view the week prior, 38, Covent-garden.

PROVIDENT SOCIETY of BUILDERS' CLERKS.—Established for affording a ready means of communication between employers and clerks requiring situations, obtaining information for the use of members, and to make provision in cases of sickness, and the infirmities of age. The next MEETING will be held at EIGHT o'clock on MONDAY EVENING, SEPTEMBER 12, at ARDS' COFFEE-ROOMS, No. 96, St. John's-street-road, Islington, where the attendance of Clerks desirous of furthering the interests of this Institution is requested. Further particulars may be obtained, by addressing to the Secretary at the temporary Office of the Society, No. 39, Stanmore street, Caledonian-road.

ALFRED COLVEN, Secretary, pro tem.

SCHOOL of ART for ARTIST WORKMEN.—At the Architectural Museum, Cannon-row, Westminster.

PATRON—The Rt. Rev. the Lord Bishop of London.

VISITING COMMITTEE OF THE SCHOOL.

H. Austin, esq.
Charles Barry, esq.
Raphael Brandon, esq.
R. Cromwell Carpenter, esq.
R. D. Chantrell, esq.
Dean Christian, esq.
Joseph Clarke, esq.
Henry Clutton, esq.
Benjamin Ferry, esq.
John Gibson, esq.
George Godwin, esq.
Philip C. Hardwick, esq.
H. E. Kendall, esq.
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The school will RE OPEN on MONDAY, 3rd of OCTOBER. The amended Prospectus, containing terms and all other particulars, may be obtained at the Museum, on all days, except Saturdays, between the hours of Ten and Four.

September, 1853. C. BRUCE ALLEN.

ROYAL PANOPTICON of SCIENCE and ART.—On Tuesday next Mr. HOLMES commenced a CLASS of PRACTICAL CHEMISTRY in the Laboratory of this Institution on THURSDAY, the 1st of September, for Medical Students, Gentlemen-Amateurs, or Gentlemen wishing to investigate any particular branch of Chemical Science. A separate class for Ladies, and a Juvenile Class in the morning. Also, on the same day, Mr. Holmes commenced his Course of Agricultural Chemistry, embracing simple practical methods of analysing Soils, Manures &c. and instruction in the application of chymical science to the general routine of farming operations. Applications for terms to be made to Mr. Holmes, at the Institution.

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WANTED, an active intelligent FOREMAN, thoroughly competent to measure Joiners' work, &c. and to take the management of a builder's yard.—Apply to C. E. Office of "The Builder."

WANTED, for a SAW-MILL in the country, a PERSON accustomed to working a circular saw-bench, and saw-sharpening generally.—Apply to Mr. H. E. WARDLE, Surveyor, Coleman-street, Woolwich.

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WANTED, by a London firm, an experienced active man, as GENERAL FOREMAN, to superintend the erection of an extensive building near London.—Address, stating particulars, salary required, and where last employed, to DELTA, Office of "The Builder." No anonymous communications attended to.

WANTED, by a Contractor, a middle-aged GENTLEMAN, thoroughly competent to superintend generally the various works, to take out quantities, make finished and working drawings, give estimates, and, indeed, to relieve and relieve the principal in every possible manner.—Address, stating salary expected, to Z. care of Mr. Bilcht, stationer, Grace church-street. None need apply whose character and abilities will not bear the strictest scrutiny.

TO FOREMAN PAINTERS AND DECORATORS.

WANTED, a steady, active Man, as FOREMAN. He will be required to take charge of a number of men, measure up work, and assist in the work. None but persons of good address, and the highest references, need apply. Apply, stating terms, &c. to the *Advertiser* Office, Rugby.

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WANTED, in a Builder's Office in the Country, a CLERK who can keep the accounts and prepare estimates, and can give satisfactory reference as to character and ability.—Apply by letter to X. Post-office, Nottingham.

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WANTED, by a Man, 34 Years of age, a SITUATION as CLERK of WORKS, or as GENERAL FOREMAN to a Builder. Can prepare working drawings, and understands the building business. No objection to country. Satisfactory reference as to character and ability will be given.—Address, stating particulars, A. Z. care of Mr. Burn, Stationer, Ship-street, Brighton.

TO BUILDERS.

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TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S PATENT ROUGH PLATE GLASS,

1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for

RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, AND PUBLIC BUILDINGS GENERALLY.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing two pounds to the foot, Messrs. JAMES HARTLEY and CO. have directed their attention to the manufacture of a description of

ROUGH PLATE GLASS, THAT COMBINES SIZE AND STRENGTH WITH ECONOMY OF COST.

The PATENT ROUGH PLATE is manufactured in sizes expressly for Ridge and Furrow Roofs, giving a span of from 8 to 12 feet, at a price not exceeding weight for weight that of common Crown Glass. Not being transparent, blinds are unnecessary, and when used in Greenhouses no scorching occurs; its NON-TRANSPARENCY and strength render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c. for which purposes it is supplied in squares of all sizes, from 8 by 6 inches and upwards.

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6	by	4		12	by	10		14	by	11		16½	by	12½		18	by	13		18	by	14	
6½	"	4½		12½	"	10½		14½	"	11		17	"	12		18½	"	13½		18½	"	14½	
7	"	5	13s. 7d.	13	"	10		15	"	11		17½	"	13½		19	"	13		19	"	14	
7½	"	5½		13½	"	10½		15½	"	11½		18	"	13		19½	"	13½		19½	"	14½	
8	"	6		14	"	10		16	"	11		18½	"	12½		20	"	13		20	"	14	
8½	"	6½		14½	"	10½		16½	"	11½		19	"	13		20½	"	13½		20½	"	14½	
9	"	7		15	"	10	19s.	17	"	11	19s.	19½	"	13½	19s.	21	"	13	19s.	21	"	14	19s.
9½	"	7½		15½	"	10½		17½	"	11½		20	"	13		21½	"	13½		21½	"	14½	
10	"	8		16	"	10		14	"	12		20½	"	13½		22	"	13		22	"	14	
10½	"	8½	16s. 3d.	16½	"	10½		14½	"	12½		16	"	13		16	"	14		22½	"	14½	
11	"	9		17	"	10		15	"	12		16½	"	13½		16½	"	14½		23	"	14	
11½	"	9½		17½	"	10½		15½	"	12½		17	"	13		17	"	14		23½	"	14½	
12	"	9		13	"	11		16	"	12		17½	"	13½		17½	"	14½		24	"	14	
12½	"	9½		13½	"	11½																	

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TO BE LET, by TENDER, on a REPAIRING LEASE, [illegible] STABLING, and Yard, to Messrs. [illegible] Court, and Shoe-street, Fetter-lane, Holborn. [illegible] are now occupied by Newman and others. A particular of the premises, and a drawing of the [illegible] seen [illegible] Messrs. Wigg, Bedford-row; and Messrs. [illegible] Parliament-street. The owners reserve the right of refusing the highest or any of the Tenders.

COUNTRY RESIDENCE.—TO BE LET on LEASE, with immediate possession if required, a most comfortable RESIDENCE, about two miles from a railway station, north of London. There are three [illegible] seven rooms, [illegible] with [illegible] and about nine acres of land. There is a brick yard now open, which may be [illegible] Rent for the whole, [illegible] per annum. For [illegible] to Messrs. ROGERS SMITH, Surveyors and Auctioneers, 3, Poultry-chambers, City.

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FINSBURY & GENERAL FREEHOLD LAND SOCIETY, established 1830. Enrolled pursuant to Act of Parliament. Office, 48, BEDFORD ROW, HOLBORN. Hours of business from 10 to 4, and 6 to 8. Every alternate Wednesday at 7 P.M.

PRESIDENTS.

T. S. Duncombe, esq. M.P.; John Wi[illegible]m, esq.; James Wyld, esq.

At the Fourth Public Ballot for Rights to Allotments in the Woodgreen Estate, [illegible] Tuesday, September 6th, 1853, the following [illegible] reserve [illegible] 29, 34, 37, 38, 39, 1021, [illegible] Thirty-three [illegible] were also drawn, but in consequence of being in arrear [illegible] to the benefit of the drawing. Monthly subscription, 4*s*. Entrance fee, 1*l*.

R. A. M. LEE, Secretary.

GREAT BRITAIN FREEHOLD LAND SOCIETY. Chief Office, 209, Piccadilly.

A PUBLIC MEETING and BALLOT for 100 rights of choice on the Society's Estate at Hadnon will be held at Exeter Hall on THURSDAY, SEPT. [illegible]. The estate is laid out into allotments of building substantial frontage to the [illegible] roads [illegible] 24 feet, [illegible] fee, 1*l*., monthly subscription, 5*s*. Notices on withdrawal. No back payments. Chair to be taken at [illegible] Ballot at Nine o'clock. T. A. Nicholay, esq. Mr. James Lyall, Mr. Waterton, and others will attend to explain. All [illegible] taken previous to the ballot to [illegible] Plans, [illegible] prospectuses, and all information can be had at the Offices.—Agents wanted. CHARLES TEDBURY, Secretary.

ON the HARROW NEW TOWN ESTATE, may be obtained by Ballot, or secured by paid up Shares, in the UNION FREEHOLD LAND SOCIETY. Half-a-Share for Ten Pounds, [illegible] a frontage of 25 feet, at from 40 to 60 feet deep. The next BALLOT will take place at Anderton's Hotel, Fleet-street, on WEDNESDAY evening, the 21st inst. at half-past EIGHT, p.m.—Office, No. [illegible], Strand, Grays-inn road.

THE Architects, Builders, Civil Engineers, and Machinists' DRAWING CLASSES, conducted by T. J. HILL, Architect and Assistant [illegible] an experienced Engineer, [illegible], 12, Hemlet row, old street. Morning classes, Eleven till four. Evening, Six till Nine, or Seven till Ten (Saturdays excepted). Prospectuses to be had on application.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.

The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

BUILDERS and CONTRACTORS can be immediately supplied with one-horse (or 500-brick) CARTS, and Co. Steam-mills and Wheel Factory, 88, Hoxton Old Town. N.B.—Barrows of all sorts made on the shortest notice.

PATENT and BRITISH PLATE GLASS. JAMES HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff or Price for the above will be sent on application: they will also, on receipt of particulars, furnish estimates for any description of Glass now manufactured.—Patent Plate, Sheet, Crown, and Ornamental Window Glass Warehouse, 35, Soho-square, London.

SOHO CROWN, SHEET, ORNAMENTAL, PATENT PLATE, AND PLATE-GLASS WAREHOUSE, 98, SOHO-SQUARE.

ALFRED GOSLETT begs to inform Builders, &c. that he is prepared to Tender for the supply of EVERY DESCRIPTION of Glass, now manufactured at WHOLESALE PRICES.

BARNETT, MOSS, and CO. beg to call the attention of bothouse builders and the trade to their [illegible] of strong SHEET GLASS, in boxes of 100 feet, at 12*s*. 6*d*. Plate, sheet, crown, and all other description of glass, always on hand.—East London Plate-glass Company, 45, Leman-street, Goodman's-fields.

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E. and W. H. JACKSON beg to call the attention of Builders and the Trade to the LOW PRICES of their PATENT PLATE GLASS, BRITISH PLATE, silvered and for glazing, of unrivalled quality and finish; ROUGH PLATE, CROWN, SHEET, COLOURED, and ORNAMENTAL GLASS, in every variety, of the best manufacture, at the lowest terms. Designs and estimates furnished for ornamental windows, either for house or church decoration.—All applications for estimates and lists of prices to be made at their warehouse, 45, OXFORD-STREET.

PARK GLASS-WORKS, BIRMINGHAM. TO ARCHITECTS, BUILDERS, and TRADESMEN.—LLOYD and SUMMERFIELD call the attention of the above to the PLINT-GLASS SASH-BARS, an improved and invented by them, to supersede the use of wood and thin sash frames. Lightness, strength, and other purposes, by which great additions of beauty and light is gained, and a saving of plate-glass effected, as less size is are required to produce a superior effect. A specimen may be seen at Messrs. BRIGHT and CO.'s, Silversmiths, Leamington.

GLASS *v.* WOOD.—Builders, &c. supplied with 16 oz. Sheet Glass (good and assorted) for large glazing sizes up to 48 by 36. Ground ditto, to 43 by 29, in cases, sheets, cut to size, at HICKSON'S, 35, Longacre. Estimates given for any quantity and glazing. Terms cash.

CRYSTAL PALACE, SYDENHAM.—Efforts are being made to COLLECT for the PAVEMENT of the POMPEIAN HOUSE specimens of ROMAN MOSAIC WORK, the fragments of which are often found in this country in situations where it is impossible to provide for their safety and proper exhibition; any tubscriber or gentleman who may be in possession of any such remains in sufficiently perfect condition to admit of removal, and of appropriate dimensions and design would confer a public benefit by placing the same at the disposal of the Institution. Any communication upon this subject will be gladly received by M. DIGBY WYATT, Crystal Palace, Sydenham.

REPERTOIRE of MEDIÆVAL ART, 52, Wigmore-street, Cavendish-square.—Mr BURTON, M.A. of the University of Cambridge, having made arrangements with parties who for many years past have worked from the designs, and under the superintendence of the late A. W. PUGIN, Esq. begs to inform the nobility, clergy, architects, &c. that he supplies every kind of Ecclesiastical and Domestic Gothic Work, viz.:—Vestment work, chalices and patens, offertory, basons, candlesticks, coronas, bracelets, gas-fittings, crosses, lamps, monumental brasses, hinges, locks, handles, fire-dogs, lecterns, velvets, richly figured silks and stuffs, for altar hangings, &c. woven silk laces, embroidery in gold and silk, gold and silver llama, painted candles, picture frames, tympticks, banners, &c. &c. Church walls, roofs, altars, and reredoses, decorated in gold and diaper. Designs and materials for all kinds of embroidery supplied and arranged.

The Builder.

SATURDAY, SEPTEMBER 17, 1853.

A CAUSTIC friend, one of those excellent, straightforward persons who think they cannot be honest unless they are unpleasant, says we never make a trip five miles out of London but we tell our readers all about it! And why not, good friend, if there be *anything to tell?* If there be not, then your observation becomes an objection, but this you do not say. It is scarcely possible to *go* five miles out of London without seeing or learning something that other persons are glad to hear of. The parts of this England of ours are now so closely connected that it is little less than one huge metropolis, and a chat about what is doing in Manchester, or Birmingham, or Leeds, comes as closely home to the dweller in Piccadilly as news from the "Borough" did once;—and no wonder; since it is easier, if anything, to get to either of those distant hives, once on the iron road, than to the transpontine district last named, taking the road-tinkers into account, and the blockaded bridges. Twenty minutes, by the way, did we stand on Londonbridge the other day, striving ineffectually to cross. The underground tunnels there, proposed some time ago by Mr. Henry Dawson, must be formed before long.

Well, our last journey was certainly more than five miles out, and we will not be frightened out of jotting down a few memoranda thereanent. We had occasion to attend an arbitration, under the "Lands Clauses Act," in Lancashire, to settle what sum the Ulverston and Lancaster Railway Company should pay Mrs. Maude for land taken and damage done at a charming place called Blawith Cottage, commanding one of the most beautiful views possible over Morecambe Bay. The stoppage of the night express train at LANCASTER gave us an hour or so in that town the next morning, before continuing the journey. They have just now completed the tower and spire to the new church of St. Thomas there. It is Early English in style, with a dash of Norman in the belfry,—Transition, in short. The tower is octagon, and the spire a continuation of the sides of the tower up to a point. Although it may be a reproduction of an ancient example, it is more satisfactory, viewed from a distance, than when seen at the foot. On the rising ground near the canal bridge the Roman Catholics have built schools and a convent of some extent; Early English in style and satisfactory in effect. Not far from these is the Lancaster Royal Grammar School, built not long since under the direction of Messrs. Sharpe and Paley. It is a collegiate structure, with low tower at one end, and a series of gablets, formed by dormers, along the front of the main building. A little figure of the Queen in a niche over the entrance-door gives life to the front, but might have been better executed. From this elevated spot the view of the town, with the castle and St. Mary's Church on a similar hill opposite, and the bay and mountains in the distance, is very striking. If you walk back to that church you will find inside a singularly interesting set of carved wood stalls, now placed against the east end of it. It is one of the most extraordinary works of its kind in England. The tracery in the arch over each seat is different, as it is in each gablet above. The crockets are studiously varied, some spreading out into large flat leaves; and each finial, too, is different. The upper part of the tower here is an amusing specimen of the Gothic of "1759." The churchyard has the novelty in England of a marble reclining figure on a tomb, and there is a gravestone which might afford a subject for a sanitary lecturer. It is simply headed,—"In memory of Crowdson's:" and then follow the name and age of twelve of the family, coming up to the year 1847, eleven of whom enjoyed between them 841 years! The twelfth died an infant. The oldest lived to ninety-three; one till ninety; and six till eighty-four. So much for the value of a good stock.

The place of meeting was Milnthorpe, where what with the arbitrators, solicitors, promoters, counsel, and a cloud of witnesses on both sides, no little stir was caused. The drive out to view the estate brought us within two miles of CARTMEL, and, the examination being over, the church there was too strong an attraction to be resisted.

The church of Cartmel Priory, being also the parish church, escaped destruction at the dissolution.* Much of the body of the church is Norman, but each succeeding century has left its mark: the whole, however, is very striking from its mass and weight. It is a cross church: the transepts and chancel are very lofty, and in the east wall there is a window, inserted during the prevalence of the Perpendicular style, which is not less than 48 feet high and 24 feet wide, a very bold piece of work. The south door is an interesting specimen of the transition from Norman to Early English; and on the north side there is an elegant doorway of the latter style.

On the north side of the chancel there is an early altar-tomb to Walton, Prior of "Kertmel;" and on the opposite site a very curiously sculptured canopied monument, in memory of part of the Harrington family, with a cross-legged recumbent figure. Some years ago, it appears, the bones of the body interred beneath were exposed, and it was seen that the legs were crossed. The monument has been much knocked about, but it still exhibits a large number of figures, somewhat coarsely carved, and deserves to be illustrated.

The carved stalls and screens, although as late as the reign of James I. are very interesting. The *misereres* are earlier: amongst them is a triune head.

The chief peculiarity of the structure, though not by any means its chief beauty or point of interest, consists in this, that the square belfry which is raised over the square centre tower is placed diagonally, so that the angles of the upper square rise from the centre of the sides of the lower. It was getting too dark for us to ascend, but the ancient sexton explained that the upper tower or belfry is carried on pointed arches which spring from just over the crown of the lower arches. There is a collection of old books in the vestry, and various things curious, but we must not stop longer at Cartmel.

At GRANGE, a watering-place hard by, a church in the Decorated style, by Mr. T. Barry, of Liverpool, well placed on a rising ground, and having a bell-turret, is nearly finished. West of the south porch an apartment is formed for the organ, the junction of which with the porch is not well managed. Still nearer to Blawith a house and lodge are being erected, under the direction of Mr. Webster, of Kendal. A number of churches, of various ages, scattered about this part of the country, are ascribed to this same gentleman, concerning which, and in extenuation of such demerits as a critical eye might possibly detect, he would doubtless plead the difference in the amount of knowledge on the subject possessed at the time of their erection and now.

It is unnecessary to go into the particulars of the arbitration to which we referred;—to show how that some conscientiously believed and were ready to swear the railway company ought to pay two or three thousands, while others were equally ready to swear the company ought not to be called on for as many hundreds, so strangely are men's minds influenced by those who engage them first;—but there is one point of general interest involved which may be usefully brought forward. The Ulverston and Lancaster Railway Company have power under their Act, and by arrangement with the Duchy of Lancaster and the Office of Woods and Forests, to reclaim from the sea some thousands of acres of land, cultivate, and sell it; and the reason urged for an increased amount by some who have sought compensation from the company was, that they would thus be deprived of the facilities of water-carriage for building materials and supplies, and a noble sea view: that the nature of the property would, in fact, be wholly changed. The reply to this in discussion was that they were not about to do anything but what the Admiralty or the Crown in some other shape could do at any time (the sands and seashore belonging to the Crown), and, therefore, that no compensation could be enforced in that respect. If this argument be sound, and the Crown have the right thus to take away without compensation a water frontage enjoyed immemorially, we shall one day find a company putting up an embankment on the Brighton sands a quarter of a mile out, under an overlooked clause in their Act, and *reclaiming* a new sea frontage without any compensation to the owners of the three miles ruined. The object of the proposed line from Ulverston to Lancaster is a good one; it will bring into operation the iron districts about Furness, and we would not, even if we could, throw any obstacle in its way; but an important question is here involved which certainly ought to be set at rest.

Our particular case was settled in two hours by arrangement, after costly preparations for a fight, and thus unexpectedly liberated, we made off for a twelve hours' ramble in the Lake country, the railway serving as far as Windermere, where a number of new houses of appropriate character are being erected under the direction of Messrs. Bowman and Crowther, of Manchester, and a car carrying us on to "The Salutation," in pleasant Ambleside for the night. The view of Windermere Lake by moonlight was delicious. Wray Castle, completed under the direction of Mr. Horner, one of the able school of architects rising in Liverpool, is picturesque in outline, whatever the details may be, and Mr. Scott's new church sleeping in the bottom of the valley gave a character of greater importance to the place at first sight than we had anticipated. There is much to admire about the church, massive and simple, but the spire is of the shortest, and the sides of it are somewhat too convex. As to the stained glass in the east window, which our correspondent, "Oras," in a note from this district (p. 406), mildly condemned, the heads are so bad that the painter Scott, of Carlisle, ought to take them out and put in better for his own credit's sake. The memorial windows on the north side, by Wailes, are better, but are not equal to some of his other works.

Of how much may be done in a day we will not speak; Rydal Water, Grasmere Lake, Langdale Pikes, Elter Water, Coniston, and a dozen "Tarns," were included in the road, hill succeeding hill, and valley, valley. What a country it is,—glorious! No wonder that the men "down north" are so fiercely proud of it as they are. Notice in the view from Tarn Howse the inexpressibly tender tones of colour on the mountains, the greens now changing into purple: the view of Coniston Lake from the road is very fine, the rugged mountain scenery here giving place to a smiling pastoral scene, and Waterhead

* The priory of Cartmel was founded by William Mareschal the elder, Earl of Pembroke, in 1188, at which time the church was spoken of as existing.

Inn is one of the prettiest in England. Coming back, observe that splendid shadow on the mountain in front, while all the rest of the landscape is literally bathed in bright light: the hill,—

"Like a giant lies,
Slumbering in heavy gloom the livelong day."

And now we open on Grasmere, one of the most magnificent views under a bright sun eye ever looked on, stretching far away there by Dunmail Raise to Helvellyn. Here, too, we more strongly feel,—

"The spiritual presence of absent things."

In the church-yard of Grasmere an upright stone is marked—

"William Wordsworth."

And there sleeps the chief of that famous band who have wedded every tree and hill and waterfall in this neighbourhood to immortal verse. As Crabbe says,—

"It is the soul that sees: the outward eye
Presents the object, but the mind descries;
And thence delight, disgust, or cool indifference rise."

But we must pull up: in the evening of the day we stepped into the train at Ambleside, and the next morning were at breakfast at home ready for other work.

AN INQUIRY INTO THE ACCIDENT AT SYDENHAM.

IN the present condition of science, it cannot but be unsatisfactory that any calamity like that at the new Crystal Palace, should pass over without insight into the cause. Rightly viewed, every failure in construction should be productive of good, by giving the means of addition to our stock of knowledge, of causes which might lead to a recurrence in future. Indeed, we just now much need some further consideration of what is meant by "an accident." That misfortunes should arise from causes apparently beyond the reach of human grasp, would appear inevitable; but the tendency of scientific progress permits the number to be gradually reduced. That the disaster at Sydenham was one of these cases, we cannot admit; nor can we consider the entire absence of a reason, such as can be entertained for a moment, at all creditable to the vaunted engineering skill of the country.

So much has been lately effected in the way of great works, that some appear to act as though magnitude and construction could be indefinitely extended, without the necessity of a review of ordinary principles. No sooner does a railway bridge span a vast chasm, than some enterprising individual is ready to assert that its success is, *ipso facto*, proof that one double the dimensions would stand. We are not able, more than others, to say to what limit progress may be extended; but we do think that a review of very plain and common principles should be kept in sight, and repeated to the public ear more generally than it is.

As there is nothing in the main principles of framing but what may be commonly understood, and as we have readers far out of professional limits, we may be able to assist in making these matters somewhat better comprehended. There is, however, reason why even those who have once become acquainted with such subjects, should from time to time renew the investigation of them. Not only has every work of construction its special characteristics, but it is essential to the right use of principles as well that they should be possessed, as that ideas should arise in natural sequence, and that separate points should have their *relative* importance felt.

Even were it right to regard railway accidents as necessarily involved in mystery, it was wrong to speak of the Sydenham accident as one of that kind. Accidents to railway trains often occur from some cause which may be destroyed with the occurrence itself. We are not able, by any special gift, to say what precise "last ounce" actually broke the Sydenham truss, because we were not at the building to see what first gave way, and because examination on the day after the accident was denied, by orders to the police, to all members of the press but a few who seem to have been specially favoured. On this point we need not say, however much we regret the hasty statements that sometimes find admission to the ordinary channels, that appearance of reason for concealment makes denial of publicity the very worst step that can be taken. Not only was there this, with every desire no doubt to avoid the imputation of it, but there has been throughout, too great an appearance of *tact* in assisting the investigations. It seemed to be the wish to show, that bad *materials* or negligence of *workmen* were the most probable causes of the accident; the contractors being of course, in the first point, able to prove that their materials were good, and on the second to argue that the instinct of self-preservation might prevent omission.

This last we think fit to say, really would have proved nothing whatever. Every one who has had occasion to go much about buildings, has noticed the great carelessness of workmen. Put-logs badly fixed, planks laid upon them so that the ends descend when stepped upon, falling materials, and a hundred other instances in things equally obvious, are of daily occurrence. In fact, accidents to men do not arise from fear: they generally arise from absence of the most obvious caution, and within our observation, just as much at eight feet from the ground as at 208. Individual cases at the Sydenham roof have been characterized by the same cause. In short, we are all unfit for our ordinary business, unless, after say two days' practice, we could go to a height of 208 feet.—If fear on the part of some be admitted, it is more likely that it arose from another cause. We attach the utmost value to theoretical and practical science; but there is a peculiar form of knowledge arising from constant observation or experience, which is acquired even by those who may be called uneducated, which is not unworthy of being regarded in them by others—affording as it does what can perhaps be gained in no other way, and which, where it may have been obtained by engineers themselves, is, in the present state of knowledge of the structure of iron, acted upon to some extent. Now, much has been said about this apprehension having existed. After what we have heard, we cannot doubt that it did so.

As to the possibility of the omission of a bolt, or some other important connection, surely that would imply defective superintendence. If the foreman, to please his masters by increased anxiety to hurry on the work and complete a certain number of trusses in a particular time—this work, the greatest in this novel building, and one which we still maintain to be novel in contrivance—if he neglect to *see* that every bolt has been inserted, surely he or the contractors are morally and flagrantly culpable. We are only showing the absurdity which has characterised much of the defence, and are compelled to say all this by the absence of a proper guardianship of the public interest, as shown by the non-appearance of any one appointed by the Home Secretary at the inquest. Are there still official referees? The *building* may not have materially suffered by the accident: this proves to our mind simply that the staging was not, or but loosely, attached to it: the public should still require to feel that their safety will be consulted. We cannot attach *no* importance to the discussions as to the safety of the Hyde-park Building, the extra strengthening which had to be inserted, the constant tremulous state of the galleries, nor to the fact, as once strikingly shown in one accident in Lancashire, reported upon by Mr. Fairbairn, that what may bear a very great strain at one time, may eventually break down with a comparatively slight one.

All that we can now do, therefore, is to place ourselves in the way to judge what special features in the design of the truss might have led to the disaster. For this we must even go into the first principles of framing. One difference between the new Crystal Palace system of trussing and ordinary roofs, is merely that the latter are permanent, the former designed for temporary support.

The simplest means of supporting the external covering of a roof, then, is, of course, that where the roof is flat, and where the span is small, or with intermediate supports. This consists simply in laying beams or lintels across the space. Here the supporting member may have little to do beyond bearing its own weight. The materials are in simple repose, and the sole forces exercised are that tending to press downwards the piers, and that to bend the beam in the centre; or so at least till the sagging of the beam becomes excessive. From construction so simple have originated some of the chief of the styles of architecture. But for large spans, or for roofs of a form for better protection from the weather, homogeneous supporting members are not readily applied. Increase of strength would require increase of bulk, and consequently also of weight, which would be attended with serious disadvantages. Thus results the principle of trussed framing, one of the most beautiful applications from the study of the action of forces and of the properties of materials. The object sought to be attained was to get the strength of solid material, by binding together separate pieces. Omitting the arch of masonry applied to the support of roofs, as having no present connection with this special question, we may go on to remark that the plan of getting the required strength, by adding to the depth of the beams, would appear to be obvious. But by diminishing the base of support, it is obvious that there would be great instability, unless several supporting members were connected together. Whether that may partly account for the great breadth in proportion to the depth, of beams in mediæval structures, we may not pause to inquire: but it would seem curious that there should have been any want of knowledge of the fact of the best form for strength in other respects. However, where, as in a trussed support, the depth is always considerable, the necessity of firm connection and bond between the several trusses is seen to be obvious.

In the ordinary sloping roof, this connection is necessary, even with small spans; because there—since it is convenient to use in place of one bearer, two meeting at the apex—one couple would be in a very unsafe position, unless connected with others. This is effected by a piece of board in a transverse direction, or lengthways of the roof, against which the heads of all the rafters may abut. It is thus seen that the ridge-piece in every ordinary roof, is that member which could least of all be dispensed with. The same lesson has only to be applied to more complicated cases, arising from increased dimensions.

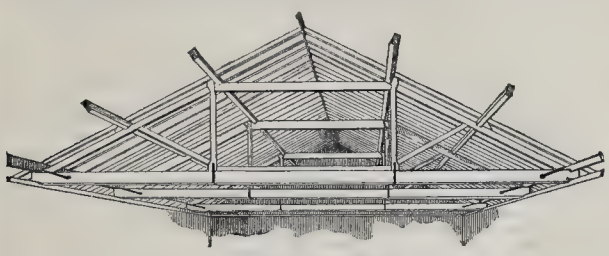
The simplest form of sloping roof is simply thus A in section, with the addition of the ridge-piece. But as the span increases, to avoid unnecessary strength in the rafters, a cross-piece or collar is inserted to keep them from bending, and the form then becomes as A. Here, however, the length of the rafters being greater, the requisite stiffness, to avoid "buckling," will not be gained without some further addition of timbers performing the same duty as the ridge-piece. These are not unfrequently inserted in the two internal angles above the collar; the addition in this case being, as it would appear, not for the purpose of support, but for the bond of the several pairs of rafters.

But other objects have to be attained, the necessity for which is greatly increased by every further addition to the span. The repetition of an elaborate system of support to each pair of rafters, would suggest the advantage and economy of substituting an arrangement at greater distances in the length of the building, and bridging over the intermediate spaces for the support of the rafters. The latter object is attained by the timbers called purlins; but that, it must be recollected, is not their only object. They carry out what was originally contemplated in the ridge-piece. It is, therefore, very important, in regarding every piece of framing, constantly to retain in the mind the actual bonded arrangement of the trusses as an essential requirement. This is shown in the view of the common "queen-post" truss.

Another object to be met in large roofs, is that of counteracting or restraining the thrust of the rafters, which would tend to overturn the walls. Therefore, unless these are of great thickness, or built with strong counterforts, or unless, as in many of the later Gothic roofs, support to the middle of the rafters can be got low down in the walls, a tie between the feet of the rafters is indispensable. In the *earlier* Gothic

roofs this was effected by a beam of great strength: the space was filled in by posts or struts for the support of the rafters; and no greater science was shown than in the ordinary lintel principle of the flat roof, which it in fact resembled. The weight upon the tie-beam was very great, and therefore had to be supported by struts beneath the ends, carried also some distance down the walls.

The true economical principle of trussed framing was, however, at length attained in the now well-known "king-post" and "queen-post" trusses. It is only necessary to allude to the *distinctive* features of these. The previous stages had exemplified the provision of strength with lightness, by depth in the support, and by combination of pieces: economy had resulted from supporting the weight by principal trusses: stability in the entire roof had been gained by pieces intersecting as bond. What remained to be done was to reduce the excessive bulk of the tie-piece, and this was attained merely by supporting it by stirrups, which, as in the case shown, are attached to the feet of posts.



A "QUEEN-POST" ROOF.

An attentive examination of the sketch of the queen-post truss will therefore satisfy even our non-professional readers, what members of the framework receive the several strains of cross-strain, tension, and compression, or more than one of these forces. It will be clearly seen, that in certain timbers, the tendency is to pull them asunder in the direction of their length, and in others to compress them in the direction of their length. Cross-strain, where a timber supported at the ends has to bear its own weight, or a weight upon it, is a combination of these. It is obvious that the upper side in such case is compressed and the lower extended, and it would seem to follow that the same thing would be true of every arrangement of framing calculated to perform the duty of a beam. Yet it is curious, and not unimportant to the consideration of the present subject, that Tredgold defines the forces acting at the upper and lower edges of girders formed by diagonal bracing, XXXX as exactly the reverse of each of these.

It might be supposed that in the case of the king or queen posts, or suspenders, and tie-beams, mere rods would answer every purpose; and indeed every one knows that such an arrangement has been adopted by "engineers" in many recent cases. But it may be doubted whether the omission of the rigid *tie-beam* at least, is not attended with some other disadvantage than that remote one of support to the walls in the case of accidental inward inclination; and we notice that in the more recent railway stations, the wooden tie-beam has again come into use. In fact, the use of timber is attended with the especial advantage of assisting, with the purlins and ridge-piece, in preventing each truss from buckling. In many cases, indeed, still further resistance is afforded by binders, or timbers which are fixed between the tie-beams for the support of ceiling joists.

A leading member, once, at a meeting of the Institute of Architects, cautioned his younger hearers against dependance upon the scantlings of Tredgold, especially instancing the weakness of that author's tie-beams. The opinion which we might have ventured to express would have been, that these dimensions might be still further reduced, as indeed we find them, without disadvantage, in nearly all recent roofs. The proper use of a tie-beam is simply to resist the thrust of the feet of the rafters which are framed into it: beyond this it has merely, where unsupported, to bear the cross-strain of its own weight. Where there is a heavy ceiling, or a room in the roof, additional strength is required for such distinct office. Still, whatever our opinion on this point, the advantages of a timber tie-beam will be seen.

We trust that even our practical readers will not think these common points unworthy of their consideration, in proceeding to examine the arrangement of the Crystal Palace truss. Let us, however, direct attention to some other matters which are inseparable from the queen-post system. The roof shown would be suitable for 40 feet span; but the same essential points have to be attended to in all cases. The principal rafters and horizontal strut or collar are acted upon by forces somewhat in the same manner as stones of an arch. Consequently the weak points, supposing the feet to be secured, are at the heads of the queen-posts. There, therefore, purlins are placed to unite the several trusses, and prevent any one from buckling. Were it not for settlements, shrinkage of timber, and other accidents, it is just possible that the horizontal strut or collar might be in three pieces, butting end to end, and yet that the centre-piece might not drop from the middle. Yet who, knowing anything of the nature of materials, would venture upon such a risk?

Thus far with our introduction: for the application to the case of the Sydenham roof, we must wait till next week.

THE DARK AGE OF ENGLISH TASTE.

THE effect of architecture on the general artistic taste of a people is clearly shown by a comparison of the prevailing styles of the buildings of various dates with the manufactures intended for ornament in general use. This cannot have failed to strike such of our readers as have been accustomed to visit the English cathedral cities, where the domestic and other architecture, not only of the cities themselves but also of the surrounding neighbourhood, partakes of the character of each cathedral.

In what is called the Gothic period of English architecture (say the fourteenth century), the pure taste and correct principle of the general design were carried out in all details; and the church vessels, carved fittings, iron-work, and other matters were well finished and of beautiful pattern.

This style of the church adjuncts found its way into the palace, and also the humble dwelling: the principle might be observed in the costume of royalty, in the dresses of the fair ladies of the time, in the trappings of the war-horse, in the form and finish of deadly weapons, in the infant's cradle, and even in the coffins and tombs of the time.

As architecture declined in this country, so did taste in other departments. This may be well illustrated by an examination of the effigies of Queen Eleanor, Queen Phillipa, and Queen Elizabeth, in Westminster Abbey. In the statue of Queen Eleanor we find a chaste unexaggerated dress, fitting and modestly displaying the beautiful form. In that of Queen Elizabeth the fair shape of nature is disguised and disfigured by the ruff, farthingale, and other unnecessary ornaments. In other ways the debased style of architecture known in England as "Elizabethan" found application to domestic purposes. Inigo Jones, in the reigns of James I. and Charles I. by his pure feeling for Italian architecture weeded the Elizabethan from many blemishes, and a corresponding taste may be observed in the costume and furniture of the time.

From the time of Inigo Jones and Sir Christopher Wren, until the end of the reign of George II. we had no English architect of very superior ability, and during that period we find taste gradually declining until, in the reigns of George III. and IV. it had become not only disgraceful, but injurious to the country. It is true that Sir Joshua Reynolds and the illustrious men by whom he was so constantly surrounded established the Royal Academy and an English school of painting, yet how sad was the condition of taste? Look at the chairs and tables of George III. and IV.'s time; examine the drawings left us of the carpenter's Gothic of Strawberry-hill, erected by Horace Walpole (the man of taste of his age); reflect upon the buildings in the "*Chinese taste*," so much admired by George III.; the pig-tailed costume of the military of that day—the costume of the old king himself, as shown in the effigy known as the pig-tailed abomination of Cockspur-street. Many of our readers will remember Mr. Punch's excellent suggestion to introduce a simple piece of machinery or clock-work into the figure, which would enliven the appearance of the statue by a movement of the *Chinese* appendage behind the king's head. We scarcely know whether most to laugh or look serious at such monstrosities as the pavilion at Brighton, done in the "*Turkish taste*," and the remarkable statue erected in honour of George IV. at King's-cross. It was a joyful time to many when that *effigy* was removed. The well-known robe and figure of the king were found to be cunningly formed of bricks properly covered with plaster; the nose of the king consisted of a tile finished off in a similar manner.

It must be admitted that the age was indeed dark which could admit of such tasteless displays. During this time fine old churches were whitewashed, and more damage done by the introduction of ugly pews and other inventions of churchwardens, &c. than during the time of *the troubles*, to which the verger of Westminster Abbey and others have blamed so much church mutilation.

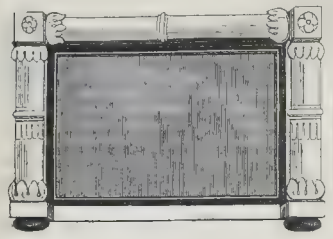
Having thus briefly alluded to the condition of English architecture during this dark period, let us present our readers with an example of the costume of a young lady, carefully traced from one of Ackermann's fashion-prints of the time. We cannot look back without feeling



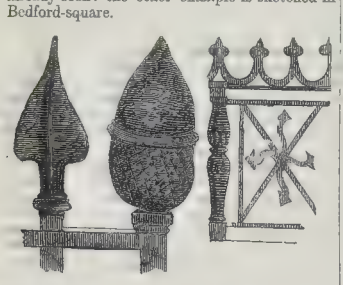
pity for the fair dames of that day, who were exposed to such a species of disfigurement. Bonnets made of tortoise-shell by the natives of the Sandwich Islands, exactly of the same shape as this specimen, are treasured amongst the curiosities of the British Museum, and Museum of the London Missionary Society, and it is to be regretted that one or two English bonnets of the dark age have not been preserved. The bonnets of to-day, by the way, are approaching

an absurdity, and will shortly be worn "on the small of the back."

Here is another specimen of the art-manufacture of the time, a looking-glass frame of well-known design, which for long was very popular. The engraving requires no comment.



Turn what way you will in the streets of London and other large towns, erected during the time to which we are alluding, the eye is painfully hurt by actual deformities intended for ornament. Here is a specimen of the iron railing round the church of St. George the Martyr, Queen's-square, and which partakes somewhat of the style of the looking-glass frame already seen: the other example is sketched in Bedford-square.



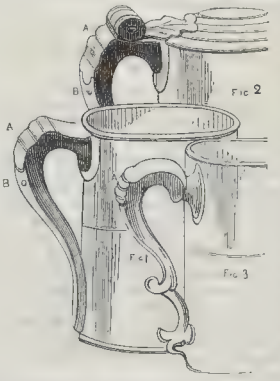
The next engraving of a gin palace near Smithfield, although not so old as the preceding examples, is still a striking instance of wrong taste: it will be seen that the entrance to an Egyptian tomb has been copied and put to the use of a door and window of a modern hostelry. It is unfortunate that the great masses of the people have not yet so much knowledge as to understand the fitness in one sense of this peculiar application, or perhaps some would be prevented, by the idea here shadowed forth, from indulging in visits which too often lead to a premature necessity for a last resting-place: the door of the gin-shop and the entrance to the tomb are closely connected. This effect was, however, not intended by the architect, yet it is not a little curious to observe, that the improvements made in these places show that parties accustomed to the worst and most degraded classes find it to their advantage to attract them by the eye, showing that even amongst the customers of the gin-shop there is an inherent yet slumbering taste, which may be educated to a useful purpose.



What does it matter to us where we drink, or what vessel we drink from? will be the answer of many to a question, if they have any care for fancy or art. Their actions, however, disprove their words, and as every portion of information which can be collected, and serve to throw light on the true feelings of the neglected and poorer classes, is at the present time of great value, it may be well to mention that a publican in Liverpool accumulated a large fortune in a short time by introducing into his bar silver tankards of considerable value and beautiful form.

We will not at present consider the effect of tasteful and pleasing form, even upon the most drunken, miserable, and debased. Their fall has not, however, in the generality of cases, been caused by the dazzle of bright lights, correct architectural forms, or "the things of beauty" met with in the range of nature and art. It is the dark pollution of filth and ignorance which has too often done its sure work.

In looking amongst the specimens of the dark age of English art, the pewter-pots here engraved are not amongst the least curious. Fig. 1 is the ordinary pewter-pot, which has been in general use not only throughout the whole of London, but the provinces, from eighty to one hundred years. Millions of these pots must in that time have been used. Men have gone to learn the business of making these measures when young, and have continued to do so until carried to the grave at an old age. They have finished off the round nob B, polished the ornament A. Masters have carefully seen that this was properly done: they have been passed to their customers, and used by multitudes. Generations of "pot-boys" have polished these handles, until they have long passed the years of youth; yet we question if one of these various persons in a thousand could tell you the meaning of the ornament if he were asked. Although we have put the question to large manufacturers and many others, we have never yet met with any one who knew until the matter was explained. It will, however, readily be seen, by a reference to fig. 2, that the ornament which has been so long and blindly followed is neither more nor less than the hinge formerly used for the lid of the old-fashioned tankard: even the little knob B has in no case been forgotten. We have here



a curious instance of the slow progress and appreciation of design amongst manufacturers. No one seems to have thought of improvement, that is, entire improvement by the introduction of a fresh design.

It will be seen, by referring to fig. 3, which is a new pattern of a pewter pot, that although a little attempt at flowered ornament is made, still they have hit upon nothing for the part of the handle where the hinge formerly used to be: it is not so distinct as that in fig. 1, yet still it is a lame imitation of the hinge, and nothing more.

The shape of a pewter measure may to many seem a thing of not any, and to others, of small consequence; yet, looking at it as one of many hundreds of examples of the dark age of English taste, by both manufacturers and customers, it is worthy of grave consideration: the welfare and even existence of this country depends on the elevation of the great masses of the people in taste and knowledge of art. A glimmering light is now breaking into the darkness. The Italian plaster figures now sold in the streets, contrasted with those sold in a similar manner twenty-five years since, show an improvement in the taste even of the poor—for who would buy (having had the eye improved by something better) the parrots, pussy-cats, cows, and other forms hideously splashed with colour, and agreeing with the other art-productions of *the dark age*.

We shall take an early opportunity of returning to this subject. To show clearly what is bad is one of the best means of improvement:—

"To know ourselves diseased is half the cure."

SCRATCHES ON THE ROAD: VIENNA.

THE IMPERIAL PRINTING-OFFICE.

MY DEAR BUILDER,—I pause in the communication of my general impressions,* to give you a brief description of a speciality that I have seen to-day, and with which I was much delighted. It was at the Imperial Court and Government Printing-office. After going through the usual offices connected with typography, we came to the department where we saw the illustration of the new invention of Herr Louis Auer, which he has denominated "*Naturselbstdruck*," or natural self-acting printing process, and which is exceedingly simple, and I hope my explanation may be the same. A picture is copied on a silver plate, and the paint is found to be sufficiently in relief to form, when submitted to the galvanoplastic process, sufficient matrix in the copper sheet deposited as to serve all the purposes of "a copper plate"—this is supposing that the impressions therefrom would only be wanted in one colour. But beyond this they are able to produce exact resemblances of coloured pictures, by using several plates for the various colours, in the same way that several stones are used in the lithotinting process; the advantage that it possesses over the latter system being the facility with which a number of plates can be produced. But the most striking portion of the method I have yet to relate, and which more fully illustrates its title—that of copying real objects. We saw a quantity of flowers and leaves, that are dried and prepared as for a "*herbarium vivarum*:" they are then placed between a piece of lead and another metal, submitted to considerable pressure, when it is found that the lead will receive the impression of every fibre, and the most delicate veins are as distinctly marked as if a copy had been taken by the photographic apparatus. The lead is then submitted to the galvanoplastic process, and a cast of the lead is taken; but in this instance, as the copy from the lead would be in relief, another copy has to be taken to make the intaglio for the printer. This being done, the printer, who must be somewhat of an artist, from the copy of the plant, or the plant itself, paints on the plate the various colours required, cleans it after the mode of copper-plate printers, and the impression is then struck. We saw several done, which represented the roots, the leaves, the petals, and the stamina of plants, and the process occupied no more time than that I have taken to describe it. Besides this it is made subservient to the purposes of mineralogy, for by etching the surface with fluoric acid, the same preparation is made for the galvanoplastic plate. The most delicate patterns of lace and other fabrics required for patterns are by this means produced, in a manner far superior to the photographic process. I saw some specimens of ladies' collars printed on blue paper, that every one would have mistaken for real lace. I am very sorry that there is no penny postage here, so that I could send you the book of specimens that I have procured, but I think I cannot better conclude this imperfect description than by quoting the conclusion of the professor's small pamphlet, in which he announces that the discovery is given to the world.

"Chevalier von Perger, professor at the Imperial Academy of Sciences in Vienna, who had likewise seen our impressions produced by the natural self-acting printing process, held shortly after (in February, 1853), on the occasion of presenting such impressions, a public lecture before the members of the Zoological-botanical Society, and did not only explain how trouble-

* See page 570, *ante*.

some the collection of herbaries is at present, but also illustrated still more the use of the new process, by drawing the attention to its cheapness and to its general advantage.

Professor von Perger made further application of this idea for ornamental drawings, and at his instigation the director of the Academy of Sciences, Mr. Ruben, sent me several sorts of plants, twisted in the form of a wreath, the copies of which produced ecstasy.

The botanist, Chevalier von Heufler, ministerial secretary of the imperial Austrian ministry of instruction, who took the chair at Professor Perger's lecture, has the merit of having first applied our natural self-acting printing process for the publication of his Kryptogamies, collected in the vale of Arpasch in Transylvania in 1850, which has just been published in the imperial printing-office that is confided to my direction.

After such results, expensive herbaries will take an end in future, be also accessible in the form of a book to the less wealthy man who takes an interest in them, for a more reasonable price, and that is indeed the best remuneration for our exertions.

On being persuaded from many sides, I had resolved, on account of the priority, to take out a patent on the 12th of October, 1852, exclusively for Austria, and told the overseer Worring to take it out *in his name*, because the government establishment under my direction seemed to me to have no claim to it. I paid out of my own property the increased expenses, in order to prepare not only in time the possibility of giving up the possession of the patent, but also to prevent the taking out of a patent in any state of a foreign country, and thus to ensure to Austria not only the honour of the discovery, but also a proof of disinterestedness.

I am convinced that since Gutenberg's invention no more important discovery has been made in the art of printing, and that our natural self-acting printing process will call forth a new era in the publication and figurative representation of artistical scientific objects. On account of its simplicity, this process is of more importance than the printing by light and the galvanoplastic, for merely a skilful copper-plate printer with its press is required for its execution; but if the intention is to furnish a great number of copies, the multiplication of the plates by means of the galvanic process must be resorted to.

Russia has given up Jacobi's application of the galvanoplastic in the year 1837, and France the Daguerreotypy for general use in the year 1839; Austria has now furnished a worthy pendant to these two inventions!

Vienna, April, 1853. LOUIS AUER."

Beyond this we were shown a variety of improvements connected with printing: among the foremost which struck me was a machine for type-founding: this consists in the matrix of the type being brought into contact with a small vessel containing the molten lead, which, by the same motion that brings the mould in contact, injects the lead therein, and on being removed the type falls out, and the process is repeated. The motion is obtained by a man who stands by the machine, turning a small crank with his left hand, and with his right he clears the mould, removes the impressions, or rectifies any irregularities. From 15,000 to 18,000 a day can be produced by this machine; and from its simplicity of construction and facility of working I consider it far superior to that shown in the Exhibition of 1851. After this we were shown the photographic department in which there was manifested great development of the system; for instance, taking copies of large paintings in divisions, and then uniting them for the purpose of producing a copy for the lithotypic process, or by that of the "*Naturselbstdruck*." We also saw the stereotype department, in which there was a difference from the system I have seen in England, and this consists of not drying the plaster of Paris mould before the lead is poured upon it, but after the cast of the type is taken it is placed in an iron pan attached to a crane, and this is then held over the vessel containing the lead till it becomes sufficiently warm to prevent the lead from "sputtering:" this, of course, requires experience, dexterity, and manipulative skill: it is then submerged and removed to cool. The advantages from this are the saving of time required in drying the moulds, and above all, you have not the inconvenience of the stereotype plates being smaller than the originals, as they invariably are from the moulds shrinking in the drying.

I cannot finish this hasty description without offering to Herr Paul Pretsch, the manager of the establishment, our earnest thanks for the courtesy and attention evinced by him, and for the readiness and kindness with which he replied to our numerous and, I am afraid, wearisome inquiries. F. S. A.

THE FALL OF HOUSES IN THE STRAND.

AN inquest on the persons unfortunately killed by the recent fall of a house between Norfolk-street and Arundel-street, in the Strand, was opened on Saturday, the 10th inst. Evidence having been given as to the bodies and cause of death,

William Shrimplin, carpenter, said,—I am in the employ of Mr. Lucas, and was ordered to put up two shores by Mr. Abrahams, who is the surveyor to the Duke of Norfolk. Mr. Abrahams said he would wish to have everything safe. After that, Mr. Rowe came and I took my orders from him. He told me that Mr. Abrahams had ordered some more shores to be put up, and we put up three more double shores. The first two were at the end of the house—the end nearest the Strand. They were about 10 feet apart. The top shore was 40 feet long, and the lower one about 30 feet. There were altogether five double shores and three single ones, and they were all about 10 or 12 feet apart. The first were put up about six weeks ago, and the last three about three weeks ago. The timber used, in my judgment, was sound, solid, good timber, suited to the purpose. I have been a carpenter and joiner all my life, and have had considerable experience in framing of different kinds, and the nature of the shoring required for such purposes. I am quite satisfied that the shores were sufficient. The wall was about 50 feet high. From the base of the wall to the foot of the shore was 14 or 15 feet; so that the shores which were 30 feet long would reach up the wall about 25 feet, and those which were 40 feet long would reach up about 36 feet. Above the shores, therefore, there was about 16 or 20 feet of wall. I thought that the shoring was quite sufficient for such a wall. I needle my shores, not through the wall, but about 6 or 7 inches into the wall, having a cross plank to receive them of 9-inch deal, by 3 inches, by 14 feet. The wall was very tender. It was an old wall, and the mortar did not appear to have much strength. I think it would not have been desirable, therefore, to needle the shores through the wall. When I heard the crack I looked up and saw the wall sinking. It fell out about 12 feet from the top, and then it all came down together. We had dug down below the footings of the house, about 18 inches in one or two places. We thought the shores sufficient, and I found that my shores stood to the last, until they cracked by the weight of the falling house. We did not dig underneath the foundations of Mr. Thompson's house. I do not know the district surveyor, and am not aware whether he has seen the property lately.

By Mr. Bodkin (for the contractors).—There had been some houses removed, and the materials taken away, and upon the site of those premises the new ones were being built. Having placed a hoarding round, we proceeded to do the first thing essential in building, which is to dig for the foundations. When we did that against the party-wall of the house that has fallen, we found that in some places the wall did not come down so low as we had dug. That was the case in one or two places, but in other parts the wall did come down, and stood beneath our excavations. Where it did come down to that extent we put in jack-shores to carry that part where the foundation of the party-wall did not come down to our excavations. I was up on the roof of the next house, No. 184, three days before the accident, with a plumb-line. I held the plumb-bob, and Mr. Rowe stood below, and we found that the wall was not above an inch or two out of the upright. Mr. Rowe was quite satisfied, and said there was no danger. Mr. Abrahams came constantly to see the progress of the works, and I never heard him express any fear of their safety. I never heard him say that the shoring was not safe, and he made no complaints.

By Mr. Hawkins (for friends of deceased).—There were no struts or shores of any kind whatever placed inside the cellar, or inside the party-wall, to resist the pressure from the wedging up of the outside shores.

Mr. John Bush, builder, deposed to the general fact that he had been employed by Mr. Thompson to examine the wall, and to see that no permanent injury was done. He consequently saw Mr. Abrahams several times upon the subject, and was satisfied with the mode in which the works were being conducted. Mr. Thompson himself was anxious that the party-wall should not be pulled down, on account of the inconvenience it would occasion to him in his business. A portion of the parlour wall was down on Tuesday afternoon when he was there last with Mr. Thompson, and he was satisfied that that was insecure, but that would not affect the main wall in any way; and before taking that wall down they certainly ought to have shored it, both from the inside and the outside. He thought the cause of the accident had been the lower part of the wall failing and bulging out, which it would do on account of the shores resting only against the upper part. Had there been shores under the timber joists below, he did not think the accident would have happened. As it was, for want of support the wall bulged out below the point where the raking shores supported it, and came down, and of course the upper part followed it.

Mr. Henderson, residing in the house, deposed to the existence of apprehensions of danger for some time, and to being continually assured of the safety of the house.

The inquiry was adjourned until the 19th, and a suggestion having been made that two or three independent surveyors should examine the premises, Messrs. Smith, for whom the new buildings are to be erected, volunteered to bear the expense of employing them.

Some persons are anxious that we should impute blame to the architect employed, and to the district surveyor, but this we must be excused from doing, at all events, until the evidence is complete. We have made some personal inquiries, and shall look for the continuation of the inquiry.

There have been several failures of buildings since, in Fleet-street, Ludgate-hill, and Long-acre, fortunately observed in time: and those who are in the habit of walking through the metropolis with their eyes open, will not be surprised to hear it. The district-surveyors must put aside the repugnance they naturally feel to interfere with property, and take those steps which the safety of the public seems to demand. To condemn a building is a very serious matter, involving, sometimes, the actual ruin of the owner, and it is not surprising, therefore, that the district-surveyors wait until such a step is forced upon them.

SUGGESTION FOR A RAILWAY INTO LONDON.

AT the meeting of the company for the proposed tunnel railway from Paddington to King's-cross, the chairman stated, that of the many schemes proposed for bringing railways into the City, that of making a line *above the earth* had always been abandoned on account of the enormous expense incurred in getting possession of the ground requisite, and also the expense of arches.

It is true, by this system that a large outlay would take place without any profitable return, arches being both dark and unsightly; but it has always appeared to me that a *self-paying* railway might be built between the City and West End, on the principle of a covered glass arcade; the shops, with one low room (*entresol*) over them, being so constructed that the buttresses which support the rails should be made an ornamental feature between the several shops, while the glass over the centre promenade would exclude the sight and noise of the trains.

Every one says, "I hate Fleet-street and the noise and crush of the walk from St. Paul's to Charing-cross." Now, as there is some talk of the removal of Newgate-market, make that, for argument's sake, the City terminus (for the present), and passing over the site of the old Fleet Prison, cross Farringdon-street by a viaduct, by Fetter-lane, south of the new Record-office, Chancery-lane, taking the *south* side of Carey-street (the arcade here would open on to the street), through that filthy neighbourhood Boswell-court, opening out a good communication with the Strand, across Drury-lane somewhere about its junction with Wych-street, taking the *north* side of Exeter-street (which would clear this neighbourhood of its present occupants, and make the property good for business), and so on to Leicester-square, converting the south side into an arcade, preparatory to making the whole square into one *à la Palais Royal*, or Imperial, in Paris. The terminus (also for the present) might be the shooting-gallery in James-street, Haymarket, or somewhere about the Scotch church in what was Coventry-court, Haymarket.

I know the property along this proposed line, and I cannot but think, with the enormous traffic that this arcade would command, but that the rents for the shops would eventually pay the whole expense of construction, whilst the returns by the railway would only be limited by the capacity of the trains to receive passengers.

CHEMIN DE FER.

PROVINCIAL NEWS.

Bedford.—The parish church of St. Mary having long had insufficient accommodation, it was determined to add a new south aisle, throw the south transept into the church, remove the gallery, build a new vestry, a north entrance porch, provide 150 additional sittings, and accommodate children of the Sunday-school; also to light the church with gas. Under the superintendence of a committee the works have been carried out. Mr. Jackson, of Bedford, drew the plans and gave his services gratis. The contract was taken by Mr. Miller; and the alterations, which were commenced on Whit-Monday, have been completed within the time and within the estimate.

Romsey.—The foundation of the new district church at Braishfield has been laid, and Messrs. Petty, of Wellow, are now proceeding with its erection.

Isleham.—The present owner of the Hall of the Peytons, Mr. Fyson, has commenced restoring it. In pulling down some old chimneys, which had been struck by lightning, a curious bottle was discovered, with the arms of the Peytons impressed upon it.

Swindon.—A contract has been entered into for erecting at New Swindon a large building for reading-rooms, public meetings, &c. with a market and shops underneath, such requirements having become necessary, in consequence of the rapidly increasing growth of the New Town and the large addition made to the population.

Ilminster.—The laying of the foundation-stone of the Ilminster National Sunday and Daily Parochial Schools took place on Friday in last week.

Tewkesbury.—Corse Church was re-opened week before last, after having been restored at considerable expense.

Leominster.—On Wednesday in week before last, the new schools at Monkland were opened. The building has rubbed Bath dressings, pointed arches, and high pitched roof, covered with bright brick tiles, forming a contrast with the stone. Internally it is provided with the usual necessary class-rooms, &c. and is open to the roof. It was erected, from a design by Mr. J. Hicks, of Dorchester, architect, at a cost of 350*l.*

Wolverhampton.—Premises in Queen-street (lately occupied as the Orphan Asylum and formerly as the Wolverhampton Dispensary) have been altered and fitted up for the post-office in accordance with plans sanctioned by the authorities. The various alterations and fittings have been carried out under the superintendence of Mr. Edward Banks, of Wolverhampton, architect. The alterations were made by Messrs. Higham, builders; the fittings by Mr. Cockerill; and the painting by Mr. Tottey. The iron palisading in front of the building having been removed, a wide open space is left for the accommodation of the public. The space which formerly existed at the side has been covered with a roof of rough glass, for the purpose of affording protection to the public whilst transacting business at the four windows of the office.

East Retford.—The church restoration committee have resolved to proceed gradually with the works, and only to order such portions of the same to be executed as the amount of subscriptions in bank will enable them to pay for, and in accordance with this determination they have ordered the immediate commencement of the new north aisle, the repair of the north transept, buttress, and building of the organ-room. To carry out the whole design, however, there appears to be a deficiency of only some three or four hundred pounds, which they hope eventually to raise without much difficulty.

Sheffield.—On Monday week the opening of the new Roman Catholic schools in White Croft was celebrated. The cost of the building and furnishing the schools will be about 1,500*l.* Of this sum 1,000*l.* have been raised by weekly subscription among the Roman Catholics of Sheffield; 500*l.* from her Majesty's Privy Council; and 100*l.* from the Roman Catholic Poor School Committee.

Nottingham.—A local paper calculates that in consequence of damage done in the brick-yards by heavy rains, the number of bricks made this season will be diminished at least 1,000,000.

Liverpool.—Some time ago, the council determined to form a small park on the Wavertree-road, the property of the corporation, and throw it open to the public. This intention is now being carried out, and the finance committee have purchased a field adjoining the park, so that the whole range from Wavertree-road to Edge-lane, where it meets the Botanic Gardens, will henceforth be thrown open to the public. It is also intended to have another entrance into the Botanic Gardens from the Wavertree-road entrance to the park, which will save visitors the circuitous route to the main entrance in Edge-lane.

Doncaster.—The proprietors of the Subscription Betting-rooms have added two additional apartments to their establishment. The rooms are 16 feet high, 20 feet wide, and 48 feet long. The ceilings are panelled, and ornamented with borders and enrichments. From the centre panel a large glass chandelier, with fifteen lights, is suspended, and two others of smaller dimensions from the other panels. The lower room is approached on the left of the entrance, and the upper from the flight of steps at the rear of the building. The works were carried out by Messrs. Lister and Son, builders.

THE RAILWAY COMPANIES AND THE DUBLIN EXHIBITION.

IT is much to be regretted that the *hand-in-hand* principle which should characterize a great industrial undertaking, has not manifested itself to a sufficient extent between the railway companies of Great Britain and the committee of the Dublin Exhibition. That there have been a few excursion trips we do not deny, but the number is vastly inferior to what it should have been. Dublin has now relapsed into her accustomed quiet state, and all the excitement consequent upon her Majesty's visit has settled down into what we trust will not prove fatal to the unpaid balance due to the originator. The most casual passer-by will find a change in the aspect of Merrion-square, and it is now desirable we should find, in the interior of the Exhibition building, groups of frieze coats and hooded cloaks, at present seen, but in small numbers. To the former class especially the Industrial Exhibition is likely to prove most beneficial. The scene Hyde Park presented in 1851, chiefly owing to the shoals of smock frocks which the speculative railway companies poured in from all parts, will not soon be forgotten, and in asking ourselves why this is not the case in Dublin, we cannot but visit a large degree of blame on the companies who, at this crisis, shrink from what is strictly an *imperative duty.*

The season is far advancing, and we woul urge the necessity of a "system" of excursio trips being at once organized all through Grea Britain, with the Dublin Exhibition as the centr of attraction. In Ireland we specially direc our remarks to the Great Southern and Western the Midland Great Western, and the Dublin Drogheda and Belfast Companies, and we doub not the result would also prove in a pecuniar point satisfactory to the speculators.

In Ireland there is a multiplicity of objects o attraction as well as the Industrial Temple, an we trust that neither jealousy nor indifferenc on the part of railway companies will preven them from giving the public a stimulus t visit it.

FALL OF BUILDING, MOORFIELDS.

ON the 7th, about six o'clock in the evening the neighbourhood of Little Moorfields wa startled by the fall of some premises in Rope maker-street, now in the occupation of Mr Onker, coachbuilder. It appears that Mr. Onke has been erecting new premises in White-street at the back of the building in Ropemaker-street and by some cause or other, which ought reall to be ascertained for the sake of public safety the upper part of the front wall of the latte was forced out, and the roof fell inside the pre mises with a great crash. Most fortunately th men had left work, or lives must have been lost A boy passing with a truck had so narrow a escape that his truck, we are told, was buried i the ruins. The constant recurrence of accident in building makes inquiry necessary; and th public have a right to be assured that prope provisions for their safety are made.

ST. OUEN, ROUEN.

To an Englishman who had visited Rouen i 1832, and again in 1852, the change in the ap pearance of the city must be very remarkable At the former period (with the exception, per haps, of Nuremberg) it was one of the mos picturesque cities of Europe, to say nothing o its being one of the dirtiest. Now, many of th old and picturesque structures which Prout an others loved to sketch, may be looked for i vain, and so far the place has lost much of it original character; but the loss is in some sor compensated for by the increased cleanliness and, as a consequence, the improved health of th town. New bridges of iron and stone have bee thrown across the Seine; old and ruinous build ings, which formerly blocked up a portion of th quay, have been removed; and new structure of importance have arisen, among the best o which may be named the Custom-house. Directl opposite the new suspension-bridge a large spac has been cleared, which has rather the appear ance of Waterloo-place in little; and from thi open space, running in a northerly direction, th old houses have been cleared away, and a goo street is in course of formation. At the end c this street, forming a noble termination, stand the church of St. Ouen. The west front of thi magnificent edifice has lately been entirely re stored; indeed, the work is hardly yet com pleted; and the way in which the arduous tas has been carried out by a native architect call for the highest praise. There is but one defect the colour of the new work as compared wit the old building; this Time will take upon himsel to cure. At the period of our visit the hoardin was not removed, or we should have been abl to have given our readers some idea of this fin work; as it was, we wandered into the garden of the Hotel de Ville, and the result is th accompanying sketch. There is no point fro which a better view of the church can be ob tained: the view on the south side is of greate extent, but the houses come so closely upon it as very much to mar its effect; while, on th other hand, the nicely-arranged though smal gardens, of which a portion appears in the fore ground of the drawing, are a pleasing adjunc even to so magnificent a building.

THE FAMILY OF SIR JOHN SOANE.—We learn from the *Civil Service Gazette* that Miss Rosa Soane granddaughter of the late Sir John Soane, the archi tect, has appeared with success as an actress at th Wolverhampton Theatre, in the character of *Lad Macbeth.*



ST. OUEN, ROUEN: NORTH-EAST VIEW.

NUMBERING OF HOUSES.

I LIVE in a neighbourhood of streets, parks, terraces, and rows, enough to bewilder any one, and am blessed in addition with "Ebenezer Villas," "Daffydowndilly Lodges," "Wilhelmina Retreats," and "Sacharissa Cottages." To add to my perplexities, I have long new streets in the line of which are perhaps five or six terraces all differently named, some with no low numbers, some with *two* or *more* high ones; in short, to find out some unregistered baby is as difficult as to solve a problem in Euclid, or to find out a *new* hint for the decimal coinage. To remedy this, and afford great facilities to boards of guardians, assessors, taxes, rates, water, gas, and sewers collectors, &c. &c. &c. I would suggest that each and every house in a parish should have a PAROCHIAL NUMBER entirely distinct from the number of the house, and in addition to it, that these numbers should always commence at, for instance, the *North* point of each parish, should be painted in a black circle on the nearest garden or house wall to the street, for convenience at night, and that the highest and lowest number in each street should be painted on the corner lamps.

A REGISTRAR OF BIRTHS, DEATHS, AND MARRIAGES.

MASTERS AND MEN.

SIR,—It is certainly high time that the master builders in London should take some decided and intelligible step with respect to the demand of the workmen for an increase of ten per cent. on their wages. Either refuse the demand, publish their reasons and accept the consequences, or with a good grace accede to that which in their own minds they see is just and therefore inevitable. The agitation, so far from subsiding, appears to be approaching a crisis; and the steady, consistent progress of the men contrasts sadly with the vacillating operations of the masters. The men claim the advance on two grounds; the first, a general rise in the price of articles of necessity; the second, the diminished supply in the labour market. The masters object, that the first reason does not concern them, and that the second is not true. The discussion may be easily restricted to this difference. It is now pretty generally admitted that the operative has a right to his fair share in the benefits to be derived from any permanent improvement in trade, and that if the labour supply be really diminished without any simultaneous decrease in the demand for productions, it is unjust that into the pockets of the capitalist and the middleman alone, the augmented profits should be swept. If two things therefore can be proved; first, that the labour supply *has* been diminished, and, second, that at the same time prices have improved and demand not slackened, surely the claim of the operatives, so far from being vexatious, becomes fair and reasonable. Now, without troubling your readers with rows of figures or columns of delusive statistics (for I agree with Canning that people may believe anything but facts and figures), is it not patent to all the world that the ceaseless stream of emigration which has, during the last eighteen months or two years, flowed from this country, must inevitably have considerably reduced the numbers of the labouring population? Even granting that this stream has been principally fed from the agricultural rather than the manufacturing districts, still we know that a very large number of operatives have been attracted by the high prices which all kinds of skilled labour have been able to command in that new and astounding world beyond the seas. Furthermore, I do not hesitate to assert that the effect of this has already made itself felt, and that wages have been considerably higher for some time past, a rise having taken place in a most objectionable manner, by which the better tradesman has been sacrificed for the worse. So jealous have masters been of raising what is called "the standard of wages," that they have preferred employing men not worth 3s. 6d. a day at the rate of 5s. in order to keep the market sufficiently supplied, rather than raise the wages of their best workmen to 5s. 6d. A re-arrangement, then, for I will not call it an increase in the wages rates, would, I am quite convinced, not be detrimental to the interests of the master builders, to say nothing of the manifest advantage to be derived from a contented spirit amongst their men. This brings me to the question of whether this diminution of the labour supply has produced any depression in trade. That there has been any slackening or restriction, no one reading the daily history of his time will, I should think, venture to assert. To take two conspicuous items of building operations as a test. At least as large, if not a much larger number of bricks have been made during the last two years than there were before the duty was repealed. Bricks are now ten per cent. higher than they were before that event took place, and there is a ready sale for them all. Timber is not more than ten per cent. higher than it was some twelve or fifteen months back, and was so long before the Russian difficulty suggested a blockade of the Baltic. Lastly, I appeal to the London builders accustomed to large competition estimates, to say whether the prices at which these have been obtained have not exhibited a marked improvement over the reckless gambling which characterised them a year or so back. To the more prudent I would say also,—Has not the fact that from one end of the country to the other, in all trades, in all callings, the cry has been raised, only confirmed your own convictions that "to that complexion it must come at last;" and have you not wisely guarded against the "coming event?" Of the first argument of the workmen, namely, the rise in the price of all necessaries, it must be admitted that standing alone it is an unsound argument, but as a sign that the circumstances tend to, an increase, it is worthy of notice, because if there is a rise in the price of all manufactured articles, and none in the rates of labour, it is clear that there is an increased profit to the capitalist in which the operative does not share; but the workman has a right to his proportion; and time and justice will inevitably grant his request, supposing the alteration to be a permanent one. But this rise in the price of general articles may be a certain, though almost imperceptible depreciation in the value of money, in consequence of the gold discoveries, and in that case the fact itself would be a logical argument in favour of an alteration.

It has been urged that the more general a rise in workmen's wages becomes, the less benefit it is to them, and that, when it becomes universal, that benefit ceases altogether, because it causes an equal rise in all articles of consumption. All history disproves this, or there would never have been any rise, and workmen would still be paid at the rate of a shilling a day, with a social and moral position to match. But even if this were the natural result, all the surplus income of the workman would be increased in proportion, and the savings-bank and freehold land societies' returns show that the working-man can and does save; and it is this fund saved out of his earnings that is, after all, the most important, for anything which tends to add to his stock of comforts, or even luxuries, tends also to raise him in the social scale, a fact which, however little it may seem to apply to a question of a builder's Saturday pay-table, is nevertheless worthy of consideration, when you reflect that it means not only raising a rival to share your privileges and your profits, but also a companion who will materially assist your struggles in life, and, what is of more importance, will help to pay your *taxes*.

A word or two in conclusion on the conduct of each party during this discussion. A great deal has been said and written on the subject of strikes. Mr. Crawshay declares he will close his shops if he is not to be the sole arbiter of what his men's wages shall be. This is nonsense. No one prevents him from exercising his judgment. He is evidently still impressed with the notion that the working-men of to-day are what they were many years ago when his men struck. They came with sticks and stones to storm him in his house. And he sallied forth, armed with pistols, and told them that to their numbers he must eventually yield, but the first two men who crossed a certain line should die. This was courageous and manly then. It would be simply melo-dramatic now, for there will be no occasion for it, unless the men of Merthyr Tydvil are very different to other workingmen. Mr. Crawshay might as well threaten to close his shops, unless the public would buy his wares at more than the market value. The men have a perfect moral and legal right to retire from work, unless they receive what they consider a fair remuneration; but what they have *no* right to do, and what they have, nevertheless, unfortunately done; in some instances, with the London builders, is to make partial strikes—namely, to leave one builder, because he refuses an advance, and go to another meanwhile at the old rate. This is an unmanly, un-English system of *guerilla* warfare, which all honest men should discountenance. On the other hand, do not let us hear of the masters combining, and simultaneously closing their shops, because it would be an act as suicidal to themselves as it would be unjustifiable towards the men. Few of them could bear unmoved the unpleasant effects of suspended operations. No instalments, no money on account of work in hand, rent continuing, all their long bills turned into short ones, and all their short ones into ready-money; could they expect either the good-will or respect of either the mechanics or the public, by adopting a course which imitates the worst features of the strikes of olden times, without the extenuating plea of ignorance and want of education? There is every hope, however, that to this pass it will not come. The better class of builders are granting an increase to their best men; and though this may appear a kind of compromise, it is one that the workmen would do well to accept, for it is adopting a right principle, which has hitherto not been observed in compacts of this nature. It is treating with each individual workman according to his merit, instead of, under the old "standard of wages" system, buying a lot of slaves at an average rate of 5s. per day per head. I enclose my card.

B. H.

BUILDERS' BILLS.

SINGULAR DISPUTE.

Whitechapel County Court.—Lappet v. *Masters.*—The plaintiff in this action is a builder, and defendant is a merchant. The sum sought to be recovered was 28*l.* 14s. 10d. balance of an account of 115*l.*; and the disputed items involve some questions in the relationship of workmen to their masters, so far as employers charging more for men's time than is allotted to the men themselves.

The plaintiff stated that he was engaged to repair the defendant's house in the country, and no written agreement subsisted between Mr. Masters and himself, nor was any understanding arrived at as to the charges. He had received 86*l.* 5s. 2d. and defendant refused to pay the balance which was rightly due to him.

By Mr. Roberts.—Had three carpenters, two bricklayers, and two labourers at work for defendant. Charged 5s. 6d. per day for the bricklayers and carpenters, and 4s. per day for the labourers; and also 3s. per week each for lodging-money. They were all at work twenty days. They were only at work eighteen real days, and the other two days were overtime. Never did a country job like this before. Do not consider when a man has done ten hours' work he is dead-beat, and the remaining hours after he works are hours thrown away. Does not consider, as a tradesman, he is justified in publicly stating what wages he paid the men. Refuses to do so. The plaintiff here called two builders, who deposed to the custom of the building trade to charge for lodging-money for the men when a country job, and also to charging extra for their services. In cross-examination they said that it was the masters, and not the men, who generally reaped the advantage of the extra charge, and that on long jobs they never gave the men the lodging-money.

Mr. Roberts said his client was perfectly ready to pay that portion of the balance disputed, which related to the men's time and to the lodging-money, if the plaintiff could satisfy the Court he had paid the items charged to the working-men. It was a monstrous act of injustice for masters to charge their customers for wages which the working men never received. [Nonsense.] He should show from the men themselves that the plaintiff had only paid the carpenters and bricklayers 4s. 6d. per day each, and had not paid them one farthing for the three weeks' lodging-money charged. The other item in the dispute referred to charges for cartage of materials, and to 7s. 6d. per day the plaintiff had charged for his own services, although he was not on the premises two perfect days the whole time the job was about.

John Abbott, Charles Green, William Mackey, and others were called, who deposed to working at the defendant's house, and only receiving 4s. 6d. per day each, with over-time; and that they did not receive any lodging-money. In cross-examination, they admitted that they were not first hands, and that 4s. 6d. per day, with over-time, was more than they usually got in the country.

Mr. Gent, in reply, said it was customary for tradesmen to charge more for their workmen than what they paid them. If such were not the case, how was the master to get a profit upon his business, and what was to pay him for superintending and laying out his money.

Mr. Roberts.—Why, you here charge us 7s. 6d. per day for superintending; that is enough, in all conscience, for about half an hour's work a day.

Mr. Gent considered that the master was fairly entitled to be paid for his services in overlooking the men, and that 7s. 6d. per day was not at all out of the way. With respect to the lodging-money, he considered that as to the men receiving it or not, the point of non-receipt could not vitiate the custom of the trade. It was the legitimate profit of the master, and the question as to the right of the men to it was not in the province of the defendants to inquire. The defendant employed the plaintiff to do certain work, and the plaintiff employs others to assist him. If the plaintiff had not paid the journeymen one farthing, it was no concern of the defendant's. The men could not make the defendant pay them for their labour, and the plaintiff as master was *de facto* and *de jure* the sole servant of the defendant, and entitled to all privileges and profit arising from the defendant's order. Supposing the plaintiff had paid the men the lodging-money; and they had gone to their own homes and not expended it for the purpose stated, could defendant have repudiated, on the ground of misapplication of moneys allowed? No: and if the master chose to retain it, he had an undoubted right to do so, and to charge for it. If a tradesman sold an

article which did not pay the master of such article half-a-crown a day, and charged a profit of labour at a pound a day, could the purchaser say I will only pay you for the value of labour you have paid for it, but if you will show me that you have paid the mechanic who made this article the full labour value you have charged me, I will pay you your demand? The dispute here was analogous, and he submitted that the plaintiff having shown that the charges were according to custom and fair and reasonable, he was entitled to the full amount claimed.

The Judge.—I remember a case of this nature some years ago being argued in the Superior Courts, and this confirms my conviction that masters are entitled to charge more than they pay for the services of their journeymen. I also am of opinion that masters are also entitled to charge for their superintendence. With regard to the lodging-money, I consider its bearing opposite to the question of wages profit. If lodgings were necessary upon the spot, the men should have been there. They were not, and nothing was paid them for lodgings, which they might fairly, perhaps, have had. I shall not allow for the lodgings.

Judgment for plaintiff, less sum charged for men's lodgings.

CONSTRUCTION OF ROADS.

I FIND by a paragraph in your journal of the 3rd ult. that Mr. Hadley, of Birmingham, has patented an invention for an improved system of street paving, consisting principally in forming the roadway into sections by divisional plates, &c. the whole being supported on gravel or concrete; the object being to secure a level and equal surface. It so happens that the above is part of a proposed plan of my own, but is only a part, and I doubt much its success as it now stands. An unyielding foundation is required in all weathers: this, if obtained by Mr. Hadley, could only be retained while the roadway was left untouched, which, I think, would be a very short period of time when we consider the general activity of our gas and water companies. These companies being the great antagonists of all good and durable paving, the question naturally arises, can we rid ourselves of them? To effect this great desideratum I would propose to build good strong walls on each side of a street, and one or two, as the width of the roadway required, in the middle; along these walls I would then lay iron girders, and from them iron arches to be thrown across from wall to wall, all being strongly united together. Stout iron plates, as a kind of flooring, could then be laid down, and then the paviors could commence their operations.

The great advantage would be, that between these walls an underground roadway would at once be made, in which could be carried our gas and water pipes and electric wires, and all repairs of the same effected without even our knowledge.* JOSEPH CLARKE.

THE METROPOLITAN COMMISSION OF SEWERS.

AT a general court held on the 6th inst. the chairman read a statement of the affairs of the commission, from which it appeared that when, previous to July, 1852, the power of the previous commission to call for a rate of 6d. in the pound was reduced to 3d. 200,000*l.* was the sum required for their ordinary annual expenditure, but that after this they were empowered to raise not more than 100,000*l.* although they had entered into contracts which could not be withdrawn; that when the new commission was issued, in July, 1852, after giving credit for all the rates, there was still a balance of 36,000*l.* against the commissioners; that in the last twelve months, the present commission had executed, at the public expense, brick and pipe sewers, to the extent of 28½ miles in length; contracted for or put in hand 12½ miles, making a total of 41 miles in length, at the cost of 142,853*l.*; but there were many other works considered as public, though constructed at the expense of proprietors of property abutting on public roads; there had been 11½ miles of these public sewers constructed in that period, at a cost of 36,413*l.*; these sewers were built at private expense, but afterwards became the property of the public, and were cleansed and repaired at the public expense, the original proprietor receiving a contribution towards the expenses from all parties who drained into them; that besides these works and those executed at the public expense, there was a large amount of pipe sewers that could hardly be separated from public works. The length of these pipe sewers was 70 miles, executed at a cost of 44,108*l.* The works superintended by the commissioners cost 80,521*l.* and the new sewers executed by themselves, 142,853*l.*; making a total for works superintended during the year of 223,374*l.* The works of the commissioners, however, did not end there. There had been repairs, and the cleansing of open and covered sewers, and on these three objects they had expended a sum of 36,880*l.*

The statement then proceeded to the main drainage question. All the works now carried on by the commissioners were executed in reference to a scheme of intercepting sewers by Mr. Frank Forster, and would fall into that system whenever it should be executed. The commissioners were prepared to carry out Mr. Forster's scheme of interception if they had the funds at their disposal, which at present they had not.

Powers, continued the statement, had been given to the commissioners to raise funds not exceeding 200,000*l.* and it would be their duty to consider how they might spend that money to the greatest advantage. They should look more to public than to the local objects of those who required sewers.

The Chairman concluded by moving that the secretary be instructed to take steps for obtaining sums of money on the security of the rates, according to the provisions of the Act of last session.

Colonel Dawson was of opinion that they should receive tenders through the means of public advertisement.

This was acceded to, and the secretary was instructed to draw up an advertisement for that purpose, to be submitted to the next meeting of the commission.

The following financial statement for 1854, has since been made up. It consists of an estimate of the amount of the available balance for extraordinary works in the several districts for the year ending June 30, 1854, after providing for the current extraordinary expenditure of the commission during such year, and for the amount of extraordinary works already ordered, including those not commenced, or only partly executed up to 30th June, 1853.

State of funds in the entire thirty-one districts on 30th June, 1853:—Credit, 35,754*l.*; debt, 29,407*l.* 12s. 7d.; available balance, after taking credit for outstanding rates, 81,418*l.* 14s. 9d.; current ordinary expenses per annum, 59,177*l.* 5s.; estimated amount of extraordinary works ordered, 66,429*l.* 10s. 10d. Total prospective expenses, 125,606*l.* 15s. 10d. Available balance for further extraordinary works:—Credit, 8,723*l.* 16s. 9d.; debt, 52,911*l.* 17s. 10d.; amount to be derived from new rates of 6d. in the pound, 216,370*l.* Of this latter item an amount of 140,000*l.* might be collected within the year. Amount unprovided for, to be met by new rates, 44,188*l.* 1s. 1d. This statement does not embrace the following liabilities:—Permanent loans, 99,492*l.* 13s. 1d.; claim for Ordnance survey, 24,212*l.* 17s. 5d. Total, 123,705*l.* 10s. 6d. Special contracts to the amount of 46,508*l.* have been entered into, and duly executed during July and August, in respect of the most important of the works ordered, but not commenced, or only partly executed up to 30th June, 1853. The following are the amounts produced by a 6d. rate on the larger districts:—Ranelagh, 24,000*l.*; western division of Westminster, 37,000*l.*; eastern ditto, 21,000*l.*; Holborn, 23,000*l.*; Finsbury, 24,000*l.*; Spitalfields, 17,500*l.*; Surrey and Kent, 39,000*l.*; Counter's Creek, 5,200*l.*; Greenwich, 4,000*l.*; Fulham and Hammersmith, 2,500*l.*; Ravensbourne, 2,000*l.*; Richmond, 1,000*l.*

* The proposition, in another shape, has been often made in our pages.

GERMAN DOMESTIC ARCHITECTURE, AND ITS INFLUENCE ON THE SOCIAL CONDITION OF THE COUNTRY.*

OUR private town-houses of the sixteenth and seventeenth centuries open to the comer at once large areas, halls, and courts. Often the whole ground-floor is only a vast hall, and the dwelling-rooms begin only in the first story. Those large spaces, however, were for the use of *all* the members of the household. The same may be said of the galleries and covered verandahs, which, at least those of the interior, extended over all the stories of the dwelling. Here the household could meet and walk about; here children might play and romp. In the warm season the whole family often messed on the open area of the first-floor. This, as it were communal space, was, in Catholic families, furnished with a sort of chapel, the *Crucified* looking down over the congregated members of the family. In the houses of rich citizens, these halls were ornamented with columns, carvings, and paintings, and the fountain in the court was rarely without the adornment of water-spouting nymphs, playing dolphins, &c.

In the *modern* residences of the wealthy citizen, however, all the spaces belonging to the *communality* of the family and household have been reduced to the least possible compass; the broad passages and galleries have shrunk to a beggarly, narrow corridor, and the courts converted (especially in densely-peopled districts) into narrow, wet, musty nooks and corners, where no sun and moon ever shine; the homely interior galleries have entirely disappeared, and where, once before, the whole family messed conjointly in the hall, some poor of the house only masticates his meal of pittance. On the other hand, the house of a noble, or a castle, was formerly distinguished from the wealthy citizen-house—even if not larger, by wider courts, galleries, halls, and open verandahs—while we now see in our cities even princely dwellings, which have not even an adequate court, far less a wide, stately hall; and which are best distinguished from other rent-houses by the presence of either a porter or sentries.

If we look at dwellings themselves, we find that the family-room (*Familien-Zimmer*), the common abode of man and wife, children and domestics, has become in succession smaller and smaller, or has disappeared altogether. On the other hand, the *separate* rooms of the members of the family become every day more numerous and distinct. Father, mother, and children claim now a whole set of different rooms; each of these is to be furnished in a particular way, while the substantial family furniture has become antiquated. Parents dwell separate from each other, and the cradle of the children stands no more close to the couch of the mother. The nursery, especially, cannot be distant enough from the abode of *polite* parents. The guest-rooms for the friends of the house (*Gast-Zimmer*) have either ceased altogether to exist, or have been considerably reduced. A quite new sort of space, however, has absorbed the greatest part of even the citizen's house—the drawing-room (*Salon*). All ornamentation, formerly divided between court, hall, and family-room, is now vested in the drawing-room. This, however, is no more at the disposal and for the enjoyment of the *family*, but for company (*Gesellschaft*). This miserable social fiction of so-called society, comprising a group of elegantly-dressed, nice people, abstracting of every civic, domestic, or moral qualification, called *la bonne société*, implies the dissolution of all rational society. Thus the centre of the drawing-room being situate outside of the social home, the whole house has lost its social equilibrium. On account of all these reasons, all experiments to find a modern style of civic architecture have been and will be vain. It is not till the *new family* has been found, that the house and home of modern times will make their appearance.

* Translated from the German *Quarterly*.

Notices of Books.

Remarks on the Purchase, Value, Management and Letting of Landed Property. By GEORGE JOHN RHODES, Surveyor. London: Effingham Wilson. 1853.

THE object of the author in issuing the *brochure* now before us, is to bring to the notice of those who may be contemplating investment in land, such observations as are necessary to enable them to judge of the principal features of such a transaction. They will not, however, content themselves with this if they are wise, although useful as far as it goes, but will take professional advice on each special case until further study and experience enable them to dispense with it.

The value of land is rising every day, and if we mistake not, will continue to do so. Sellers should be more wary than buyers need be. Mr. Rhodes' pamphlet contains a useful table for calculating the rental of parcels of land per acre, rood, or perch.

Moyen de créer des Sources Artificielles d'Eau Pure pour Bruxelles et pour d'autres grandes Villes, d'après le nouveau Procédé Anglais. Par F. O. WARD, Esq. Bruxelles, 1853.

THE best means of supplying Brussels with pure

and salubrious water occupying the attention of that capital, Mr. F. O. Ward has in this pamphlet placed before the Belgians, in very excellent French, the advantages of soft water over hard, and the theory of supply from gathering grounds—as at Farnham, Sandgate, and Ottery St. Mary—and points out sandy heaths in the valleys of the Demer and the Dyle, as promising a much better fluid than the calcareous water of *Lillois-Witterzée*, with which they are threatened.

In his preface he alludes to what has been done at Paisley as to the supply of water by means pronounced impracticable, and ends it thus:—"A chaque erreur qu'on aura la bonté de me signaler, je renoncerai franchement, et avec reconnaissance. Mais à ceux qui pour tout argument, se serviront des épithètes 'chimerique' et 'illusoire,' je dirai simplement—le doigt sur la carte d'Ecosse—que la chimère d'aujourd'hui est souvent le fait accompli de demain."

The Dwellings of the Labouring Classes; their Arrangement and Construction. By Henry Roberts, F.S.A. Architect, 21, Exeter Hall. Third edition.

In this edition of Mr. Roberts's Essay several fresh plans are given, with an appendix, containing particulars of the author's hollow bricks. Amongst the illustrations, now very numerous, there is a want of sections.

From the appendix we learn that the model-buildings, Bagnigge-wells, have given a return of 4·33 per cent. on the cost of the buildings; the Streatham-street model-houses, for fifty-four families, 5·75 per cent.; Charles-street lodging-house, for eighty-four single men, 17 per cent.; and the Hatton-garden lodging-house, for fifty-seven single women, 7½ per cent.—let as a depôt for female emigrants.

Tyler and Son's Illustrated Net List of Prices of Brassfoundry, Baths, Pumps, &c. Warwick-lane, Newgate-street.

This catalogue, which appears to have been prepared with much care, contains about 500 illustrations, and will be found exceedingly useful for reference, especially on the subject of baths.

It must be borne in mind that the prices are those actually paid by builders, so that in making out bills a proper per-centage for profit, risk, &c. must be allowed.

The Home Companion; The Family Tutor; The Family Friend. Orr and Co. London.

Very cheap publications, which can be safely recommended.

Bradshaw's Illustrated Hand-book for Travellers in Belgium and on the Rhine. Fleet-street.

The principal feature in this guide-book is the series of maps which it contains. The illustrations are very numerous, but are only sufficiently like the places and things represented to recall their aspect to those who have just left them. The letter-press requires careful re-editing from beginning to end.

Miscellanea.

Improvements in Iron Manufacture.—Mr. J. Darling, of Lanark, N.B. has patented some modifications in machinery for producing malleable iron, consisting of a mode of driving rolling apparatus wherein the actuating steam-engine, or prime mover, works at a greater velocity than the rolls; the placing of speed-reducing principle only between the engine and the rolls; a mode of arranging puddling and other furnaces, employed in manufacturing iron and other malleable metals, semi-circularly, in such manner that they may be at, or nearly at, a uniform distance from the chimney; and the application of the heat from the flues of puddling or other furnaces for the generation of steam.

Wire Manufacture.—Mr. J. D. Morries Stirling, of the Larches, near Birmingham, has taken out patent for the manufacture of wire from zinc and its metallic alloys, coated with silver or suitable alloys. The zinc, or its alloys, is first coated and then drawn into wire, or the coating may be applied during the drawing process. When silver is to be the coating metal, a convenient mode is to coat the zinc well by pressure, or to fill a tube of silver with zinc or its metallic alloys, and then to draw the same into wire.

The New Harbour at Holyhead.—While at Holyhead, her Majesty visited the extensive works in progress there; and the *Illustrated News* represents her seated on a truck drawn by horses on one of the temporary tramways in use between the quarries and the breakwater. A brief recapitulation of the extent and progress of the works may not be unacceptable to many of our more recent subscribers. The undertaking was commenced in 1849, and is intended to secure a total area of 300 acres for the purpose of a harbour, two-thirds of that space having a *minimum* depth of seven fathoms at low water. Accommodation will thus be provided for about 400 vessels of all classes, including 70 men-of-war as large as the Duke of Wellington. The north or great breakwater will be 5,000 feet long, and 170 feet wide, and of this work 4,000 feet have already been completed to low-water mark—3,500 feet of it being from 14 to 15 feet above high water. The depth at low water thus filled up is from 45 to 48 feet: the stonework which surmounts it is about 80 feet above the foundation. The smaller, or eastern breakwater, which protects the harbour on the landward side, will be 2,100 feet long, and 1,000 feet of it have already been formed, in a depth of 30 feet at low water, and to a width of 100 feet. Since 1849, when the works were begun, 2,400,000 tons of stone, in blocks varying from 10 tons downward, have been deposited in the sea, at the rate of from 22,000 to 27,000 tons per week, or from 4,000 to 5,000 tons per day. The quarries realize the idea of mountains removed and cast into the sea. As much as four tons of powder is frequently exploded in one mining operation, and thus 20,000 to 30,000 tons of stone are often at once set free. The plan adopted is to blow away a huge section of the base of the mountain, when the superincumbent mass of rock, 150 feet high, being unsupported, tumbles down after it. The rate of progress is 250 times greater than it was in the Plymouth breakwater. This economy of time has been effected by the use of piled stages carrying railways, which project boldly into the sea. The contract contemplates an expenditure of about 800,000*l.* and the outlay so far is under 400,000*l.* This sum, however, includes the purchase of the surrounding land.

American Memorial Windows for Stratford-on-Avon Church.—The suggestion, derived from the recent pilgrimage of some of our Shakspeare-loving transatlantic cousins to Stratford-on-Avon, that some of the windows, designed originally for stained glass, but never filled, should be devoted to offerings from certain cities in the United States, has, it seems, been referred to the vicar, the Rev. Mr. Harding; and our correspondent, "C. F." who before addressed us on this subject, now informs us that the vicar very cordially adopts the suggestion of the proposed memorials to the shrine of Shakspeare as offerings by the American nation, and that it has also been warmly approved by others. We hope, therefore, that the proposal will now assume a specific form, by the choice of as many of the most eminent cities in the States as can well be allowed to enjoy the privilege, due justice being also done to our own. A more graceful or affecting tribute to the memory and the world-wide renown of the bard of Avon could not well be offered than this, from the midst of a region which, in his time, was an unknown and savage wilderness, but which his Anglo-Saxon fellow countrymen have vanquished and have civilized.

The Railway Passengers' Assurance Company.—The eighth half-yearly meeting of this company was held on 7th inst. when the proprietors were congratulated on the satisfactory increase of the business of the company. Single-journey tickets had risen in number from 17,830 of first class, 41,068 of second class, and 59,256 of third class, in 1852, to 31,314 of first class, 56,201 of second class, and 71,317 of third class in 1853. So with double, periodical, annual, and life tickets, all of which had much increased in number. A sum of 1,901*l.* 13s. 7d. which had been disbursed during the half-year, had been paid as compensation for one fatal case, and eighteen claims for personal injury, and affords convincing evidence of the utility of the company, and its means of alleviating by pecuniary assistance the distress consequent upon railway accidents. The total number of claims on the company since its establishment have been twenty-one for fatal cases, and 343 cases of personal injury, involving the payment of 11,246*l.* 2s. 10d. for compensation, and medical and other expenses. The tickets of the company are now adopted by every line in the United Kingdom with two exceptions, namely, the Brighton and the South-Eastern lines, though these are as liable as any other to accidents. Every one who risks his life on a railway ought to patronise this very useful company by insuring his life *pro tem.* at least, since the trifle necessary can scarcely be regarded as any addition to the cost of travelling, even though there were little or no risk; while, in fact, the risk is rather too appreciable on any line of railway yet in use.

Condition of Holyrood Palace.—The picture-gallery of this palace, according to the Edinburgh papers, is in such a state that when the Scottish nobility meet in it for the election of peers to Parliament, the floor requires to be supported by strong beams in the apartments below, to the disorder of the principal portions of the palace. On the arrival lately of her Majesty, this could not be done, and accordingly the number of tickets for admission to the gallery on the day of election was limited to 150, instead of 700 or upwards; and it was even doubted whether the floor were able to support the limited number. This is a disgraceful state of matters to be allowed in the chief palace of her Majesty in Scotland,—a palace actually inhabited occasionally by her Majesty and by her representative commissioner, as well as occupied in the election of the Scottish peers.

Telegraphic Progress.—The Mediterranean Electric Telegraph, it is said, is in a fair way of execution. Some contracts have just been entered into for the construction of the materials that are to become the vehicle of intercommunication between Europe and Africa; and it is confidently believed that before the end of next year the electric force will be travelling to and fro between Europe and Africa, over land and under water, in the service of commerce and civilization. The importance of the line will increase a hundred-fold when its contemplated continuation to India shall have been carried out. 6,000 miles of telegraph now under construction in India will be brought into connection with it.

Danger from Asphalte.—A reader draws our attention to a circumstance reported in the *Bucks Herald*, and which is said to have occurred at Kensall, in Herts, where a farmer, Mr. Nunn, while examining an asphalted tank, after being emptied of water, stood in imminent peril from an explosion of inflammable gas, ignited in the tank by the light used in examining it. The ignited gas set fire also to the asphalte, and it was with great difficulty that Mr. Nunn escaped. It is rather a singular circumstance, that a previous occurrence of the same kind took place some time ago in nearly the same part of the country. Since the Claridge Seyssel patent has expired, the asphalte work has fallen, it is said, into a variety of hands, and caution should be used in the selection of what is now prepared.

Operative Sawyers.—The sawyers of Liverpool are soliciting their employers for the following rate of wages:—yellow pine, 29 inches deep and upwards, 3s. 8d. per 100 feet; ditto, under 20 inches deep, 3s. 4d. per 100 feet; red pine and red Baltic deal, 4s. per 100 feet; all foreign white hardwood, except American ash, 6s. 8d. per 100 feet; all single flat cuts, double measure; English white hardwood, American ash, and all oak billets, 6s. per 100 feet. Best cut for all in all kinds of wood, and extra cuts, as usual; planking ash for felloes to be paid for by measure the same as the above. Sweeping felloes immediately after being sawn, ¼d. per inch clear; ditto dry plank or planked in the country, ¾d. per inch clear. All labouring, including taking down boards, loading and laying loads, and getting in timber, to be paid for at the rate of 4s. per day, or 5d. per hour. The employers have had a private meeting on the question, but what resulted has not yet transpired.

Sydney.—The streets of London, quoth the *Sydney Empire*, are said to be paved with gold. The streets of Sydney are slubbered with slush. The principal thoroughfares are in a most filthy state, and the pavements are far worse, because, besides being filthy, they are absolutely dangerous. In the parts where there are pavements, those pavements are generally in a very dilapidated state, while other portions of the pavement are repaired with a slippery substance, on which people may be seen sliding and slipping, unless they prefer going into the street to avoid the dangers of the footpath.

Town of Wicklow Improvements.—The Town Commissioners have decided to accept a plan for laying out a portion of the town, known as Irishtown, in building lots, &c. designed by Mr. J. J. Lyons, architect, Dublin. A premium of 10*l.* was awarded to the plan, by which it is proposed to extend Irish-street to the Black Castle, and confine the ground adjoining same by a continuous balustrade; and erect crescents, first-class double villas, cottages, labourers' dwellings, &c.

The Patent Law.—By an Act of the late session copies of provisional specifications lodged are to be open to public inspection, and certified copies are to be evidence in Scotland and Ireland.

Wells Cathedral.—The dean and chapter intend at once to take the necessary steps for the purpose of securing the large statues in the west front of the cathedral from the danger of falling from their niches. The dean, we hear, has taken up the subject personally, and it is understood that not only will the statues be secured in their niches, but also repaired and restored.

A LONDON EISTEDDVOD.—The Cambro-Londoners have been discussing the feasibility of holding a Grand National Eisteddfod in London; in the spring of 1855; such Eisteddfod to partake more of the character of a national exhibition than a mere bardic festival; its object being not only to cultivate the literature and music of the principality, but also to develope the energies of its inhabitants in improvements in agricultural husbandry, mechanical skill, and manufacturing productions, to foster a taste for artistic and scientific pursuits, and to encourage all efforts at mental and manual cultivation and progress, as well as to display before the public such specimens of ancient and modern sculptures, carvings, paintings, implements, manufactures, and mineral productions as may be sent up for exhibition. Judges will decide on the merits of the different productions, and award prizes, &c. according to the plan adopted by the Council of the Exhibition of 1851.

ROMAN REMAINS AT LINCOLN.—Workmen employed in sinking a well at the back of a house erected on the Park, have come to a lot of Roman remains. Amongst them, says the local *Chronicle*, was the largest brick we have yet seen; a fibula, a fine specimen of Samian ware, the handle of a Roman urn, &c. The old Roman wall ran down the site of the houses on the park, and the ditch on the outside has been filled in to the depth of 8 or 9 feet. At this depth the relics were found, all of them broken, so that no doubt some resident in the Roman city threw the articles referred to over the wall into the ditch when they were broken and useless. These relics may have been buried something like 1,500 years.

AERONAUTICS EXTRAORDINARY.—Mr. Wise, the American aëronaut, proposes to take advantage of an air current from west to east, and establish a line of balloons between the United States and Europe. True, they cannot return by the same route, but Mr. Wise is at no loss on that account: there is, he says, nothing to prevent them going forward, and reaching home by going clean round the world! He undertakes to circumaëronaut the globe at 3,000 dollars each trip.

ANTIQUITIES FOUND AT CAMBRIDGE.—A great many Roman and other coins have been found of late near the tumulus of Castle-end and the circumvallation which almost surrounds it. Pottery and human remains have also been discovered, and the soil in one place seemed to have been used as a site for cineration of human remains. Among the coins was one of Hadrian, another of Vespasian, some of Domitian, and so on. There was also a coin declared to have belonged to the Venetian republic.

BRITISH ASSOCIATION.—The British Association for the Advancement of Science, have met at Hull. Various papers of more or less interest have been read, and the meeting altogether has proved very satisfactory. The next annual meeting, we believe, will take place at Liverpool.

THE CITY MONUMENT TO WELLINGTON.—The various sculptors applied to have sent in designs in competition to the Guildhall Committee, of which we hear various rumours.

ELECTRIC WEAVING-MACHINES.—The Chevalier Bonelli, of Turin, director of the Sardinian telegraphs, has invented an electric weaving-machine, to replace the frames *à la Jacquart*, for weaving figured stuffs. Details are as yet wanting respecting this invention, but the *Correspondence*, of Turin, says that it appears destined to produce a great change in industrial matters.

THE LAST PROPOSITION.—A gentleman in Iowa proposes to keep the cities free from thunder-storms "for so much per year." To most people this offer will be looked upon as preposterous, and yet it is not. We have no doubt whatever that an outlay of 10,000 dollars would keep New York as insulated as a glass table with sealing-wax legs. What a gentleman in Iowa proposes to do for us, has already been done for the vine-growers of the south of France. By means of a well-arranged system of lightning-rods, a whole district has been rendered inaccessible to those destructive hail-storms which so frequently follow in the train of thunder-storms. What has been done in France can be done elsewhere. If we can teach lightning to write, we can surely teach it to behave itself. —*Lowell Courier*.

[ADVERTISEMENT.]

TO THE EDITOR OF THE BUILDER.

SIR,—In perusing your valuable journal of the 3rd instant, my attention was again drawn to the remarks of your correspondent, H. Howard, respecting the injurious effects of gaslight upon the health and sight of persons engaged in printing-offices. In addition to the remedy you propose, I would beg to suggest the adoption of Chappuis' Patent Daylight Reflectors, which, if judiciously placed, would entirely obviate the necessity of burning gas during the daytime, and thereby avoid that close and sickening heat, which causes those nauseous and injurious effects upon the human system. Much may be done in future erections by a good system of ventilation, but the close proximity of adjoining buildings, especially in London, almost excludes the natural light of day from many printing-offices and other buildings for business purposes, unless assisted by artificial means. In such cases Chappuis' Patent Daylight Reflectors are invaluable, and their general adaptation throughout London and the large provincial towns, is the best guarantee of their efficiency and durability. In conclusion, I would caution the public against certain spurious imitations of my Patent Reflectors, which, after a very short period, will prove totally useless to the purchaser. Trusting to your kind feelings in behalf of the general health and comfort of those engaged for the press as an excuse for my encroaching on your valuable space,

I beg to subscribe myself, with respect,
Your most obedient servant,
AUBIN CHAPPUIS.

Patent Reflector Manufactory, 10, St. Mary Axe, Leadenhall-street, Sept. 12, 1853.

TENDERS

For the completion of five houses at Limehouse, as advertised in the *Builder*, July 16.

Glenn	£1,487	0	0
Nichols and Son	1,444	8	6
Bateman	1,424	0	0
Abbott	1,360	0	0
Sands and Emery	1,310	0	0
Chapman	1,297	0	0
Tubby	1,281	18	6
Bryant	1,254	0	0
G. J. Watts	1,235	0	0
Richards	1,226	8	6
Goodman and Lucas	1,220	0	0
J. Cliff	1,150	0	0
G. Day (accepted)	1,041	0	0

For alterations, additions, and repairs to the Swan Hotel, New-street, Birmingham, for Mr. Thomas Phillips. Messrs. Thomas Norton and Son, architects. Quantities taken by Mr. Wm. Lea.

Horton	£2,378	2	5
Messrs. Nowell	2,200	0	0
Barnsley	2,185	0	0
Cresswell	2,100	0	0
Briggs	1,990	0	0

For a carpet factory at Kidderminster, for Messrs. H. J. Dixon and Co. Mr. T. G. Bland, architect. Quantities supplied.

Cresswell	£9,582	0	0
Hardwick	9,340	0	0
Smith	9,310	0	0
Briggs	9,190	0	0
Barnsley	8,950	0	0
Binion	8,500	0	0
Ankrett (accepted)	8,257	0	0

For a house to be erected at Desborough, for J. L. Douglass, esq. The same architect.

Martin	£3,964	0	0
Haddon	3,730	0	0
Thompson and Ruddle	3,650	0	0
Burdett	3,294	0	0

For chapels and dwelling-house at Hanwell, for the vestry of the parish of St. George, Hanover-square. Mr. R. W. Jearrad, architect. The quantities supplied by Mr. T. Pearson.

Carter	£4,795	0	0
Sanders and Woolcott	4,737	0	0
Reading	4,493	0	0
Wilkinson	4,440	0	0
Higgs and Callingford (accepted)	4,375	0	0

For villa for Lieut.-col. Clark, East Greenwich. Mr. John Blyth, architect.

Rudkin and Scott	£1,549	0	0
Skinner and Haynes	1,470	0	0
Clever	1,375	0	0
Roberts	1,299	0	0
Treharne and Son	1,287	0	0
Sewell	1,236	0	0

For constructing roads and sewers for the St. Pancras and Marylebone Land Society, on their estate, Upper Holloway. Messrs. Rowe and Simpson, surveyors.

Phillips	£3,407	0	0
Pound and Co.	2,705	0	0
R. Docwra	2,696	0	0
Radley and Co.	2,669	0	0

TO CORRESPONDENTS.

"S. H." Herts (the preliminary arrangements are now in progress we believe). "T. L." or "S. L." (we should not use it for that purpose). "W. B." "W. P. G." (under our mark this time) "E. C." (ditto). "A. B." (dit o). "J. N. W." "An Old Subscriber" (folding rests with the news agents). "T. P." "P. P." "F. R." "H. de N." "W. Y." "P. P." "Vatican." "T. J." "J. R." "H. H." "Cirus." "Ely" (hereafter). "J. B." Cheapside. "One of the Competitors." "Constant Sub." (6s.). "W. D. B." (the suggestion has been several times made in our pages). "W. S." "E. L." "J. L." "J. N." "W. H. F." "Crystal Palace" (shall be glad to receive it). "W. H." "W. B." "W. A." "T. C." "G. K. F." (shall appear). Re, lies to "Notes and Queries" next week.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE. All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

SALES BY AUCTION.

ROTHERHITHE, Surrey, adjoining the Gasworks.—By MR. ROGERS, on TUESDAY, SEPTEMBER 20, 1853, and following day, at TWELVE for ONE o'clock each day, on the PREMISES, the ground being sold for building purposes, the extensive STOCK of New and Old Oak Timber and Plank, oak tops, posts and slabs, ships' beams, floors and futtocks, knees, chocks, and carlings, oak quartering and sillion, stacks of oak edging, African oak slabs, firewood, quantity of casks, &c.; erections of greenhouse, 36 feet by 12 feet; summer-house and sheds. To be taken down and cleared away by the purchasers.—May be viewed the day preceding the sale. Catalogues had on the Premises; and of Mr. ROGERS, Auctioneer and Valuer, Lewisham, Kent.

CROYDON, SURREY.—TO CONTRACTORS, BUILDERS, COACH AND WHEEL WRIGHTS, AND OTHERS.

MESSRS. BLAKE will SELL, by AUCTION, upon the PREMISES, immediately opposite the West Croydon Railway Station, on TUESDAY, SEPTEMBER 20, and following days, at TWELVE each day, a large assortment of capital OAK FENCING, and other materials, consisting of sawn oak posts, in various lengths, oak rant rails and cleft pales, gravel plank, field gate and posts, oak plank in thicknesses, scantling and sash stiles, elm board, ash, beech, and cherry plank, railway fencing, fellies, spokes and stocks, split ash, navvy barrows, pick shafts, oak wattles, and various useful converted timber.—May be viewed and catalogues had at the Fox and Hounds Inn, adjoining the place of sale: at the Inns in the surrounding neighbourhood; at Garraway's; and of Messrs. BLAKE, Croydon.

SHREWSBURY.—Very valuable and extensive Freehold Property, in the heart of the town.

MESSRS. DANIEL SMITH and SON will SELL, by AUCTION, at the LION HOTEL, in SHREWSBURY, on THURSDAY, SEPTEMBER 29, in 1 te (by direction of the executors of the late Right Hon. the Earl of Liverpool), the important and very extensive BUILDINGS and BUILDING GROUND comprised in the vast area of the famous old Talbot Hotel, yards, stabling, and other appurtenances, commanding extensive frontages upon several streets near the market-square. The old hotel is an immense pile of building, containing numerous spacious rooms, having double frontages and back entrances, with capital vaults, &c. presenting a most eligible site for any public institution or great undertaking, or, by subdivision, for eminently prominent, choice, and important spot for a safe building investment. The other portions of the property offer similar advantages, but upon a less extensive scale. The estate may be viewed, and particulars, with plans, may be had at the Lion Hotel; at the offices of the *Midland Counties Herald*, Birmingham; *Manchester Courier*, Manchester; *Chester Courant*, Chester; and *Gloucester Journal*, Gloucester; of Messrs. FREERE, GOODFORD, and CHOLMELEY, Solicitors, New-square, Lincoln's-inn; of Messrs. BENNETT and FIELD, New-square, Lincoln's-inn; at the Auction Mart; of Mr. TUDSALL, Surveyor and Architect, Mardol Head, Shrewsbury; and at Messrs. DANIEL SMITH and SON'S Offices, in Waterloo-place, Pall-mall.

TO RAILWAY LABOURERS AND OTHERS

CONSTANT EMPLOYMENT can be given to a large number of good workmen for the next four years on the Western Railway of Switzerland.—Apply for further particulars at the Commercial Institution, 8, Fore-street, City.

A FOREMAN of PATTERN-MAKERS WANTED, in an Engineer's and Founder's Works. He must have filled a similar situation before, and be able to undertake plain and other work.—Address, stating situation last filled and wages expected, to Y. P. Office of "The Builder."

A VACANCY for a Respectable Person as TRAVELLER or AGENT in the Stone Trade.—A Person with a practical knowledge of Masons' Work, or retired Master Mason or Builder in want of employment, might be ENGAGED for the SITUATION.—Apply, by letter only, to T. C. "Builder" Office.

TO CARPENTERS AND JOINERS.

WANTED, in a shop within three miles of the metropolis, a steady, sober, and competent Man as SHOP FOREMAN, where there are averaging ten men employed, one that will act in that capacity and fill up his time at the bench.—Address, by post, stating terms and reference, to B. B. B. the Office of "The Builder."

TO GLASS-CUTTERS.

WANTED, a respectable Man, who thoroughly understands the GLASS CUTTING and GLAZING; he must be able to produce good testimonials as to character and ability.—Apply to Mr. S. TUCKER, House Decorator, 234, High Holborn.

TO PAINTERS, &c.

WANTED, a PAINTER; one who has a knowledge of the plumbing, glazing, or paperhanging preferred. All or any who has been used to the trade.—Apply to Mr. AMOR, 19, David-street, before nine in the morning or after seven in the evening.

TO BUILDERS AND OTHERS.

WANTED, by the Advertiser, aged 34, an OUT-DOOR FOREMAN'S and TIMEKEEPER'S PLACE. No objection to country; terms moderate. A most satisfactory reference can be given. The advertiser is a good builder and cabinet-turner, and would be glad to engage himself, if required.—Apply by letter, P. P. (prepaid), No. 14, Holland-crescent, Barrin to-road, Brixton.

TO SAW-MILL PROPRIETORS, BUILDERS, AND OTHERS.

WANTED, by a steady, experienced Man, a SITUATION as ENGINE-DRIVER.—Address, H. R. No 7, Charles-street, Islington-green.

TO ARCHITECTS AND BUILDERS.

WANTED, by a Young Man who has served in a Builder's establishment four and a half years in the shop, and five and a half years in the office, a SITUATION in or near Liverpool, as an improver in an architect's office, or draughtsman, &c. in a builder's office.—For particulars, address J. B. *Chronicle* Office, Liverpool.

WANTED, a SITUATION as GENERAL FOREMAN, or SHOP FOREMAN, in a large firm, a thorough practical and experienced man. Satisfactory references given.—Direct, A. M. P. Mr. Steels, 2, Spring gardens, Charing-cross.

TO ARCHITECTS, BUILDERS, AND OTHERS.

WANTED, by a middle-aged practical Man, who has had many years' experience under the first architects and builders in London, a SITUATION as CLERK of WORKS, or General Superintendent, well acquainted with all the branches of a building. No objection to the country. Testimonials of the first character.—Address, prepaid, A. Z. Post-office, Stoke Newington.

TO LIME AND CEMENT MERCHANTS AND OTHERS.

WANTED, by a Young Man, a SITUATION as TRAVELLER or BOOKKEEPER, having previously filled similar situations.—Address, A. B. 4, Clarendon-cottages, Fairfield road, Bow.

TO BUILDERS, &c.

WANTED, a SITUATION as SHOP or OUT-DOOR FOREMAN. The Advertiser, aged 36, is well acquainted with the business in all its branches.—Address, X. Y. care of Mr. Haycock, 2, High-street, Stratford, Essex.

The Builder.

SATURDAY, SEPTEMBER 24, 1853.

IT will probably be admitted that we have done our part towards making known the miserable condition of many districts in the metropolis, and the frightful dangers attending it. The more recent series of papers on the Homes of the Poor * (sad mockery in the term!) have had the advantage of the circulation of most of our contemporaries: the statements remain uncontradicted, the deductions unquestioned. And yet, if we are asked what practical good has up to this time resulted from them, we must, with shame, reply,—none—positively none!

And now the cholera is upon us. It has passed as if by electrical agency over certain lands, almost depopulating places peculiarly circumstanced, and is making its fatal way towards London. At Newcastle-upon-Tyne and Gateshead it is established in all its terrors, and is carrying hundreds to the grave.

The authorities of these towns are up and doing: they are closing grave-yards, cleansing lanes and alleys, which, for filth and neglect, we venture to say are not to be surpassed in the kingdom, and using other measures to stop the pestilence. *But why did they wait until the plague came?* Surely the intelligent and scientific men of Newcastle must have known what a magazine of dangerous material had been formed by their neglect, and which only wanted the touch to destroy hundreds of lives.

The cholera is spreading in Shields and Sunderland, where it before raged, and is exhibiting its signs in other well-known localities.

Are we to wait in London until the disease is firmly fixed among us, before proper measures are resorted to to stop its course? Surely this ought not to be so. London should at once undergo a systematic inspection, and be put into a proper condition to resist the pestilence: we feel certain if this were done in a proper manner, it would lead to the most important results and benefits. It will be of no use, however, to send the beadles and such-like functionaries, but a staff of intelligent persons, who are capable of appreciating the peculiarities of the various means of death so plentifully strewed around the metropolis, and accustomed to these inquiries. Expense should not be considered: let the cost be what it may, it will produce a saving. Every vestry and board of guardians should at once initiate proceedings: every man should feel himself, as he is, personally interested in seeing them properly and effectually carried out. Many of the places which we have seen with our own eyes, cry shame on the institutions of the nineteenth century.

We would, however, on this, as on other occasions, restrain our expressions of feeling, and confine ourselves to some plain categorical statements, which can be practically disposed of. Let us look again at one or two of the localities already illustrated and described by us as ready for any bad seed. Take, for example, the neighbourhood of "Paradise" (fallen), at King's-cross. A very active assistant in this inquiry went to that locality one evening last week, in company of Mr Sutherin, a surgeon of this neighbourhood, well known for his zeal in the cause of the suffering poor: this gentleman, having been frequently called professionally into this pestilent neighbourhood, has become familiar with nooks which might escape the attention of the general observer. Our readers, by referring to page 137 of our present volume, will be able to form an idea of the condition of the buildings.

* See pp. 137, 171, 201, 277, 337, 465, &c. *ante.*

The first place visited—a large yard surrounded by houses—contained about twenty cart-loads of oyster-shells, kept there in store for laying the foundations of roads. The smell of these was most offensive: the proprietor of the yard was out of the way, and his wife could not think how any one could complain of "clean oyster-shells,"—forgetting that large particles of the fish adhered to each shell, and were left there to putrify. In another part of the yard was a stack, containing many cart-loads of cow-house and stable refuse, piled up against the back wall of a house: here (in this very house), the doctor had at the time a case of typhus fever.

The water here comes in on Saturday night at six o'clock, and there is no more until *six o'clock on Monday night.* On Sunday night there was no water in this or the adjoining houses. In one of the houses, within a few yards of that attacked by fever, we learned, by the peculiar and dismal howl, that the Irish inmates were "*waking*" some one dead: it is, we fear, a too well-known and familiar sound in this locality.

You may wander on amid scenes of dilapidation, and enter rooms with miserable atmospheres: it is a sad sight to see young and helpless infants in such places. To all our inquiries, "there was *no water last Sunday*" was the reply, and of course none during the greater part of Monday. There are numerous pig-styes, giving forth foul odours, close to the doors, and below the dwellings of the people, although it is contrary to the laws of the land to allow these animals to be kept in populous towns. It is also illegal to stack up mountains of vegetables and other refuse; and as these illegal acts are the undoubted cause of many deaths, a heavy responsibility must rest on the guardians of parishes, whose duty it is to see the sanitary laws for the welfare of the poor carried into effect.

In a dilapidated house, but too well known to Mr. Sutherin, thickly inhabited, and for which the inhabitants pay about 27*l.* a year, the backyard was disgraceful: a cesspool was overflowing and spreading over the ground, and deep pools of stagnant and poisonous matter filled the cracks of the pavement. No description can give an idea of this place. There was no water last Sunday, "not a drop of water in the next yard, nor in the next and the next." There are cesspools open or closed below and adjoining the houses. One or two streets have lately had drains made through them: in the large remainder all lies on the surface;—heaps of the refuse of piggeries, cowsheds, and stables, vegetables, fish, &c.—with bad pavement, great poverty, and for nearly two days in the week the people left without water! Even the dumb animals—horses, cows, pigs, asses, &c.—must also be equally ill provided with this necessary. Such are the notes of a neighbourhood, which we venture to say is not much exceeded in ill condition amongst savages, and is certainly disgraceful to the parish of St. Pancras.

This "Paradise," and parts adjoining, are positively worse now than at the time of our first visit six or seven months ago.

Being in this neighbourhood, let us mention a curious and instructive instance of the consequence of sanitary neglect. In a narrow passage lined with houses, leading from Clarendon-square to the New-road, passengers that way may have noticed a small manufactory of yeast for the use of the London bakers. The owner of this place has always been a pattern of cleanliness: many have remarked the healthy and pleasant look of the old-fashioned little garden, the stone pavement so cleanly washed, forming "quite a picture." Opposite this place are stables for horses, in the possession of a greengrocer, who, in spite of remonstrance, stacks up his decayed vegetables, &c. in his yard until they cause a decided injury to the surrounding persons. It is well known that all the processes of brewing require scrupulous attention to cleanliness, and that want of care in this respect is almost certain to stop fermentation. The manufacture of yeast is little different from the brewing of ale: the ingredients are allowed to boil for a certain time: when that is done and they are mixed, if the atmosphere is in a proper state, fermentation will go on. The accumulation of filth had become great in the yard opposite the yeast manufactory, and at the time of carting it away the smell was offensive. The yeast-brewer was at work, and instead of the fermentation going on as it ought by covering the liquid with a thick, deep yellow coat of yeast, the surface was stagnant as ditch-water, and covered in parts with a blue mouldy-looking scum. On another similar occasion, the yeast-brewer seeing the fermentation nearly checked, removed the vessel of liquor through the garden to the back of his house, at a distance from the smell, and the brewing at once went on in a thriving manner. This seems a simple matter, but it may serve to bring to the minds of some who shut their eyes to the fact, that the air, although they do not *see* it, is a powerful agent: it can destroy the functions of life as surely, and in some cases as instantaneously, as a cannon-ball.

Some time ago we mentioned the condition of the "Coal-yard," at the top of Drury-lane,—a spot near which the Great Plague of 1665 first made its appearance. After the publication of that article, some in authority came to look at the place, saying, as we hear, that "as Mr. Builder had been at them, the filth and refuse must be removed." This goodly resolution has, however, gone to pave a well-known place. At a recent visit the place seemed even worse than formerly. At one end of these dwellings is a building occupied by the parish poor, and here a fire-engine is kept. At the time of our visit, about eight o'clock on a Saturday evening, the people opposite this place complained of their neglected condition and inadequate supply of water. They had then none in their tank. Suddenly a cry of fire was raised, and the engine was brought forth for use "*Thank God,*" said one of the women, "*there is a fire: we will soon get some water.*" Presently the water ran into the empty cask, the turncock not being able to prevent it from coming into the houses at the time he supplied the engines. Surely they *must* be ill supplied with water—one of the greatest necessaries of life—when they "*thank God for a fire.*"

We could lay our finger on a map of London and trace the districts which will be ravaged by cholera; and it is certain, by proper care and management, that the evil might be lessened, if not prevented altogether. Will it not be infamous if endeavours be not made?

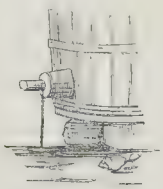
It has been shown that the cholera can be battled with by sanitary measures, and that fever in the same way can be abated. The model lodging-house in Charles-street, Drury-lane, is a striking example of the advantages and effects of proper means in one of the worst neighbourhoods. This house has now been open about eight years, and occupied by from seventy to eighty lodgers daily; and yet during that period, although cholera and fever have killed numbers on all sides, there has not been here a single case of either in it. A good supply of water, proper drainage, and ventilation, have stopped disease; and it is not a little gratifying to find that the example of this building, in such a place, has not been without its effect on the landlords of the adjoining houses.

If, then, human life can thus be saved, it becomes a matter demanding the care of all persons in authority, and they should at once put a stop to the species of wholesale murder now going on.

Early attention should be directed to the supply of water, the more so as the impression prevails that this is ample. Our readers

already know how untrue this is, and we will add some further proofs. The other evening, between six and eight o'clock, we examined Rose-street and the courts adjoining, with this object in view. Rose-street is near Covent-garden, with several narrow passages which lead to Long-acre, and is thickly inhabited by a poor, and in some instances bad class of people. Having before described many of the dwellings of the London poor, we will not now enter into particulars in that respect, but content ourselves by stating that all we have said will only give a slight notion of their miserable condition. At No. 18 Rose-street they said, "We don't have a drop of water on the Sunday; we have to go to Covent-garden. There are not so many people in the house now as at other times; they have gone to the hop-picking." There are eight rooms in this house, each let to separate families: although we did not get at the exact numbers, we may at the very least put the population, even at the present, at five in each room; that will give forty persons; the water-cask would contain 120 gallons, and is filled on each Saturday afternoon between three and four o'clock; there is then no further supply until Monday at about the same hour,—about forty-eight hours!

It will be seen that this supply is totally inadequate, but, says an inhabitant, "Go to the other house, Sir; the poor craters there are starving for want of water." At No. 13, in the same street, we found a dilapidated water-cask, the "tap" leaking, as shown below, at about the rate of a pint a minute.



The closet is close to this water-cask. The premises in which these water-starved people live, belong to Combe and Delafield, the brewers. Inquire in this description of neighbourhood where you please, and the answer will be, "We have no water on Sunday; we are obliged to beg for it." "The poor creatures (said one) do not know what to do for water on a Sunday; it is very troublesome, but one cannot refuse the poor things water; bless you, they come begging and begging until I am often without myself," and so forth from many.

What is the condition of the drainage in this neighbourhood? we inquired of one who has a manufactory near—"Drain, sir? here is my drain," pointing to a wooden spout lying near the ground. "There's my drain, sir; it runs into the street there, on to the surface, and down through that court into the 'Acre.'"

Angel-court, Long-acre, is a wretched place. The six houses have one spot for water, closet, and dust-heap.

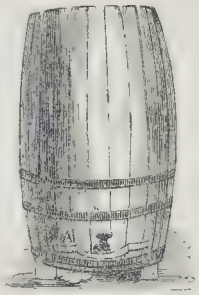


The place containing these conveniences for say 150 persons, is in a small yard or court. Here, the people state, they are not short of water; on inquiry we found that there is a tank for the reception of water somewhere under ground; we were unable to discover the exact position, but it is not likely to be far from the pump shown in the engraving. Here there is nothing but surface drainage, and in consequence the refuse of the closet (A), &c. must pass into a cesspool, most probably in the neighbourhood of the subterrancan water-tank.

It is a curious circumstance, and we have before alluded to it, that the people living in these places are slow to acknowledge the unwholesomeness of their condition. Inquire how their children are in health, and they will (although you may see disease written on their faded countenances) almost invariably say, "Quite well, thank God." Let those persons, however, whose business it is (or at least ought to be) to look into these houses, not be content with this off-hand reply. Let them inquire the number of times that fever has visited the family; how many friends they lost by the last attack of cholera; *how many children they have living, and* HOW MANY DEAD. The inference will be very different.

Wild-passage, Drury-lane, is a narrow court, thickly inhabited; and we may say in passing, that this and other neighbourhoods in London are certainly more densely populated since the dispersion of persons in many places by the Lodging-house Act, and the removal of numerous dwellings, without any more suitable provisions being made, than they were before.

Here is a drawing of a water-cask in Wild-passage, which reminds us of the withered condition of the ship mentioned so graphically by Coleridge in his "Ancient Mariner;" and let it be remembered that this vessel is provided by the landlord of a house for eight families.



A. is an iron apparatus to prevent any person from taking out the tap.

In this place the people say they have "a very bad supply of water," "on Sundays have no water at all," "have to hunt for it on Sundays, and even in the week days are often without water." In one house they had no water for six weeks. In another house we found the water-cask, dust-bin, and closet in a cellar. In these underground places they generally have plenty of water, and sometimes at the cost of the neighbours: the parties who lived in the two houses adjoining the underground water-casks complained of their short allowance; they said they got no water until the place below was supplied, and that often just as the water was beginning to come into their casks it was turned off. Sometimes, in case of spite or quarrel, the people below will let the water run away, and so stop the other supply.

The underground arrangement of water-cask or tank, closet, and dust-bin, cannot be too much reprobated; it is unwholesome in the extreme. Several persons, not only here but also in Rose-street, occupy cellars. One woman in Wild-passage said that she had been driven by poverty and distress to rent an underground back-kitchen or cellar, for herself and three children, for 1s. per week, and that they had all been laid up at one time with fever, but recovered.

In the neighbourhood of Marylebone police station, Berwick-street, a district already referred to, there is no water in the courts and alleys on the Sundays. Here many of the people complain, not only that the water-casks are deficient in size, but that the water is frequently turned off before the cask is full. In one of these little courts, the people hearing us make inquiries respecting the water, rushed out from all sides, speaking with bitter rage of the inadequate provision. We managed to gather amid the din that they suspected a person who keeps a small general shop (one of those curiously squalid attempts at trading met with in these neighbourhoods), and through which the water-pipe passed, of "thieving the water on the way to them." On examining the shop, we found that the shopkeeper had bored a small hole in the water-pipe, to prevent him, as he said, from struggling and fighting with the people in the court when the water came in, "there being so many of them, and so little water, that they were often like so many devils."

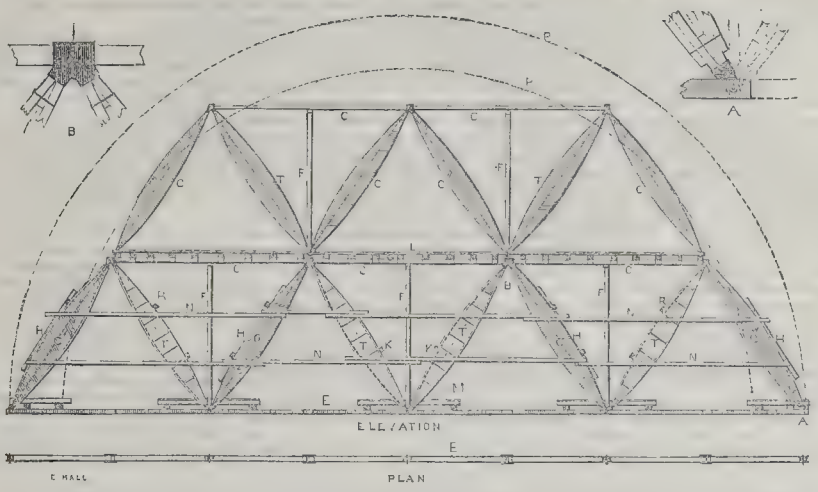
We are simply telling a plain tale, and have used unvarnished facts, in the hope that our observations may at the present time direct attention to the water supply amongst the poor. It is a matter of necessity and justice, which should be attended to even without consideration of the cholera. Water should be supplied, if not constantly, at least every day, Sunday of course included; the receptacles should be examined, covers should be put to them, secured by locks, and the water should be removed as far as possible from the closets and dust-bins.

One more fact before we conclude. The cholera is now killing 100 persons a day at Newcastle, where the population is about 90,000. If it attack the metropolis with similar violence, and the mortality bear here the same proportion to the population as at Newcastle, we should lose 20,000 persons in a week, or *double the number of the soldiers who were encamped at Chobham!*

We say this not as ground for alarm, but as a reason for preparation; and we again exhort all who have power, immediately to take those steps by which, under Providence, as science and experience show conclusively, the evil may be mitigated, if not altogether averted.

AN INQUIRY INTO THE ACCIDENT AT SYDENHAM.

REFERRING to the remarks made in our last,—it has to be considered, in a case of far greater magnitude, whether the elements of weakness which were set forth as especially avoided in ordinary cases, can be counteracted by supplementary contrivances, or whether the larger span is not beyond the utmost limit of understood application. In the latter event, an entirely fresh arrangement would have to be devised, or the idea of trussed support abandoned altogether. The designers of the Crystal Palace truss seem not to have been governed entirely by one consideration or another. Where the ordinary queen-post truss is resembled, there are separations in the length of a compressed member of the framing, and want of rigidity in the tie, the disadvantages of which do not seem to us sufficiently counteracted in a truss of great span, exposed to all the casualties of the situation, and which was not at once erected in its position, but had to be moved at each end, by levers, a distance of 24 feet. With reference to the arrangement of strutting, that can hardly be considered to have the strength of the ordinary diagonal cross-bracing; nor till we see a drawing of the bridge on the Birmingham Railway referred to at the inquest, and discover that what appear defects here are elements of strength in that case, can we feel otherwise than doubtful about



THE NEW CRYSTAL PALACE: CENTRE TRANSEPT TRUSS TO STAGING FOR ERECTION OF ARCHED RIBS.

the matter. We say this the more, because the bridge over Joiner-street, Tooley-street, was also referred to as upon the same principle; and this bridge, it will be recollected, once broke down, though the girders there were of small size, properly connected transversly, and permanent works; and being of iron, were moreover not subject to the defects of timber. The diagonal pieces were cast with the top rib—several triangles in each casting in the length of the girder—and the bearing points and support to the tie, seemed to us better than in the case at Sydenham.

Now, that there is no difficulty in executing a truss to span far more than 120 feet, has been shown on many occasions; on such principles, too, as might have answered the special requirements in carrying out the work, as here practised. That is to say, one truss might have borne the weight of another in progress, and, when completed, possibly might not have been vitally injured by the racking and twisting of removal,—though we should not like to *suggest* this plan in any case. Amongst other suggestions which have been made, a correspondent of our own refers to the suspension-bridge principle, which indeed is worthy of more attention than it has received in the case of roofs, centres, and staging in England. In truth, however, as it seems to us, every lattice girder and system of diagonal bracing partakes of this principle. (We referred to the view apparently taken by Tredgold; and being sincerely anxious for the truth, we are open to other correction if we are wrong.) In the Sydenham roof, the boat-shaped braces lettered T in the cut, are supposed to be holding up the tie-bar as well as the next posts, F, and struts, C. They are therefore hung from an oblique angle; thus causing one of the very worst strains to which a joint can be exposed. They are hung, indeed, from a cast-iron shoe. This, if adequate to its purpose, does away with the disadvantages of the timber material; but the principle seems to us unaltered. Whereas in the ordinary diagonal cross-bracing, besides the advantage of cross-strutting, the first of the suspending braces (if not the others) hangs from a right angle. This could not be shown by printers' type in our last, the perpendicular ends of the girder being omitted. But the difference in this respect between ordinary braced girders and the Sydenham truss will be clear. On the principle of a simple girder, built of diagonal cross-bracing, vast spans have been intersected, as in the American bridges. One at Chambly, in Canada, was illustrated in a former volume.

With the sketch and the reference to it, and the particulars which have already appeared in the *Builder*, we need not go into any very lengthened description of the Sydenham truss. We may remark that we have not measured heights; but in all matters important to a fair judgment, our illustration may be depended upon. The iron ribs are stilted on standards of about 8 feet, though not so shown in the diagram; and the blocks between the tie bars are at distances of 15 feet.

The double trusses erected or in progress were seven in number, placed 24 feet apart; and the upper and lower trusses together rose to a height of 60 feet. In erecting these the work proceeded towards the centre of the building; and in the case of the three which failed, the upper trusses had not been fixed. Therefore, we have to look at merely the lower of the two trusses shown in the sketch. This was 30 feet in height. It may be thus described. Two main supporting struts, C', were fixed each at the lower end into a shoe, bolted to the ends of coupled wrought-iron ties, and at the upper end into another shoe, which received the end of a member of the framing answering to the collar or horizontal strut of the queen-post roof, but which was in three pieces, the butting ends being received by shoes. These arrangements will be clearly apparent by the details at large. As in the ordinary roof, the whole safety depended upon the security of the abutment and the integrity of the collar. The tie bars were adequate to the resistance of the direct tension. The collar had to be kept from sinking in the middle, and from buckling sideways. The former object was proposed to be attained by the arrangement of diagonal struts and braces. Hung from the oblique angle at the head of the first strut, C', on each side, was a suspending brace, T, intended to hold up the next compressed strut, C, and by it the shoe at the junction of ends of pieces of the collar. From this last was suspended another brace supporting the tie bars. The tendency of the struts unrestrained would be to come to the perpendicular. This, however, the tie-beam would prevent, provided no other strain than that of tension were called into exercise. But to assert that no cross-strain came upon the bars is more than we could venture to do.

The whole theory of compound girders is yet very inadequately understood, even in matters quite apart from unequal contraction and expansion by temperature. Viewed simply in connection with the theory of cross-strain and the position of the neutral axis, it would seem that no girder could receive on its lower edge any other strain but that of tension. This we could suppose to occur were the framing homogeneous or solid, or were the lower edge a line freely moving round the arc of deflection. But the very attempt to fasten the tie in any intermediate part, seems perforce to involve cross-strain, provided there be any settlement through weight above. The question then seems to be resolved back again, into that of the sufficiency of the collar to sustain itself and all struts inserted with the object of maintaining it, and without assistance from the tie-bar.

The means of preventing the truss from buckling may be thus enumerated: — the binders, G, the diagonal cross-bracing intersected by binders, H, and the braces, N. The last mentioned would be of great service, provided they were properly placed and spiked in the truss which broke, and the ends of the several lengths adequately bonded. The binders, G and H, and the diagonal cross-bracing, it is difficult to see could have been of much use, until the truss was placed in its proper position. The binders, G, might be fixed at one end, and were no doubt useful in steadying the truss, and keeping it upright whilst moving it; but if lashed with ropes, as they are in the third and fourth trusses, and not spiked, as in the first and second, it is questionable how far they could have adequately resisted the varying strains to which the framing was exposed. The diagonal tie-rods at the same level, mentioned at the inquest, it does not appear were actually inserted, judging from the fact that they were only partially so between the third and fourth trusses at our last visit. If the connections to prevent buckling had been adequate, the remaining trusses could not have resisted with comparatively little injury, the dragging downwards of the falling trusses.

Such considerations seem to us to be suggested by the principle of the framing, supposing no other peculiarities of arrangement and no contingencies to be applicable to the case. That such points may alone involve the destruction of the most scientific system of work, every one who is acquainted with the nature of materials is aware. In the present case these may be said to be, the principle of the joints and shoes, the construction of the struts and braces, and the particular mode of fixing the girders in their position, and of carrying on the permanent works. The principle adopted in the struts seems well calculated to get a certain amount of strength with great lightness. It was, we believe, first brought to notice in this country, in a paper read at the Institute of British Architects, by the inventor, M. Laves, architect, of Hanover, who had employed it with

great economy and success. The defects may be said to be the danger of destroying the elasticity of the timber by bending a piece 2¾ inches thick at most, and the difficulty of inserting securely into one shoe two such pieces. In the roof at Sydenham, although these ends may have been inserted in shoes of sufficient depth, it is doubtful how far the ends of the timbers would resist the various strains to which they were exposed, perforated as each was by two ⅝-inch bolts, entering, not within the space of 7 inches, but at the 2¾ inches of scantling. As to the moving the trusses into their position, it seems difficult to see how this could be managed by levers, without, at least, so much twisting as would impair the integrity of the connecting joints. The very parts which, for the success of such an operation, should be rigid, as the collar and tie, have here not the firmness of those parts of an ordinary queen-post roof of small span. The main dependence must have been on the braces N. The bars of the tie were, indeed, coupled together and blocked; but they have inherent defects, both as to their capability of preventing buckling at moving the trusses, and also to resist even the ordinary cross-strain. Even blocked and connected at short distances, it is not only difficult to prevent the action of that which is generally considered as a distinct species of strain, and one which is yet little understood, namely, torsion; but when and weight, as a plank, is supported between the coupled bars of two trusses, the slightest deflection in the plank will inevitably throw the weight upon one bar only of each couple, and so call into exercise but half of the strength anticipated.

That such causes were in operation would seem to us sufficiently shown by the position of the gangways M Not only did these rest on the tie-bars, but, as we read, each truss in construction was supported upon the tie-bar of that which had preceded it, and it was actually (as all accounts agree) whilst the seventh truss was so supported, that the sixth truss gave way. It seems, therefore, impossible to understand that the tie had not to sustain a very large amount of cross-strain; and though this might not break it, it would cause an amount of deflection dangerous to the permanence of the parts above, even were not the elasticity of the iron itself impaired. If the reports are correct in saying, that the materials of the three trusses which fell amounted to twenty-five tons, it would seem to follow, that the weight of only one truss bearing upon the tie, and probably, as we say, only on one bar, must have been not much under eight tons. Such weight, it must be fairly recollected, was distributed over the whole length; but when we find from Barlow, "On the Strength of Timber and Other Materials," that a bar of 2 inches deep by 1·9, or about 4 inches of sectional area, with a bearing of 2 ft. 9 in., has its elasticity impaired with 2½ tons upon it, it seems difficult to see how these bars of less sectional area, though 6 inches in depth, and 30 feet at least between supports, could have born without injury even that part of the eight tons or other weight, which came upon them.

Moreover, there are many matters in the execution of a great work, to which it is impossible to get the requisite attention. The safety of the whole roof was endangered, we believe, one night by some mischievous person, who cut the guide ropes, and we one day saw the foot of a pole placed as a buttress, resting against one of the tie-bars over the gallery, so as to bend it to an extent we should not have liked to run the risk of in one of the unsupported trusses.

A former accident would seem to have conclusively shown, that the original scantlings were too weak. Additions were, therefore, made. The end struts, C′ especially, received additional timbers, certainly not disposed in a very scientific manner, since the ends, as shown in the detailed sketch, remained with all the original weakness. With this opinion the evidence is quite consistent. One witness said the struts appeared to break up as they fell; another, that he heard the ends giving way.

We think, therefore, although it may be impossible to say what was the *immediate* cause of the terrible calamity, enough has been said to show that the *accidental* character of the occurrence has not been "placed beyond a doubt," and that the trusses were *not* "formed on the principles generally adopted," nor "in the usual way with struts and wrought-iron tie-bars." As compared with such methods, the principle can only be treated as an untried one; as compared with what was called for by the special case, it can at present only be considered as wanting in the requisite invention. It was not certain that the principle had been employed in the same way in a similar case; and where a lopted it had not been without cause for suspicion. Clearly, if the principle be right, the consistent course would be to do what one of the engineering witnesses proposed, namely, repeat the same course again. The mere hap hazard of public opinion should not force an engineer from what he holds to be right. It is equally clear, however, that the interests of the public should have some more efficient protection in cases of this kind. The coroner, where disposed to pursue his duty, should not lack the power of appointing the most eminent surveyors, who would report fully and impartially on the occurrence; and proper time should be allowed to elapse for them to form their opinions. On the want of sufficient consideration alone can we found a reason for those which were given.

Were we disposed to rebut assertions which have been made, as to the inferiority of architects in matters requiring what is called engineering skill, the present case might give an opportunity. In truth, however, we know not on whom, in place of architect, the responsibility of this building rests.

But there is one point that we may allude to before we conclude, and which may be well given in the words of Tredgold himself:—

"But while I most earnestly recommend the study of the principles of construction, I must as earnestly protest against its abuse. It is necessary that an architect should understand geometry and mechanics, but dangerous for him to make either of them a favourite study; lest, like Father Guarini (a Tuscan architect), 'he trifles with his knowledge,' and employs himself 'in inventing grotesque vaultings and honeycombed cupolas, which have neither solidity nor beauty.' It should be the architect's care to avoid everything of the kind, and to aim at that simplicity of design which is most easy in the execution, and forms the most economical and the most durable structures. In this consists the true excellence of the art of construction; but I am aware that this kind of excellence seldom secures praise. Men are better pleased with apparent artifice, or with a hardiness of design which nothing but the most profound ignorance of the art would allow any one to venture upon."

The truth is, in the ordinary business of an architect the inventive faculty finds its vent in decorative design; and we have no doubt that the separation into two professions, has contributed to the heavy expense of railway works—such expense as, whatever were the extenuating circumstances, would hardly fail to be heavily visited upon the designers of houses and public buildings, but which seems to be slight cause of complaint against engineers.

REFERENCE.

A. Parts shown to a larger scale.
B. Ditto.
C. Boat-shaped struts, formed by curved pieces 7 inches by 2½ inches, kept asunder by short pieces, and united by ½-inch bolts, and boarded over:—calculated to be under compression.
C′. Ditto, ditto, with the addition of an extra piece to each curved side: these pieces not inserted in the shoes.
T. Ditto, ditto: boarded where shown; calculated to be under tension.
E. Tie-bars coupled; 8 inches apart: each bar 6 inches by ½ inch, blocked and rivetted, with connection-plates at the junctions of pieces in the length.
F. Posts, with short pieces transversely at the top, for support of each boat-shaped piece of the head of the truss.
G. Binders, spiked to the first and second trusses, but lashed with ropes in the other cases.
H. Diagonal cross-bracing, intersected by binders, and bolted at intersections. No diagonal bracing to other struts.
K. Binders, which are inserted between the third and fourth trusses only.
L. Smaller tie-bars to the upper truss.
M. Gangways resting on the tie-bars.
N. Braces.
PP. The main ribs, 72 feet apart, occupy about this position relatively to the truss; but are stilted upon cast-iron standards, about 8 feet high, and not as shown. The actual height of the trusses is about 60 feet.
R. Binders.

*** ⅝-in. bolts, placed horizontally and diagonally between the heads of two trusses, and rivetted to the iron shoes, appear to have been contemplated; but few of these were actually fixed.

STATUES.

WE are unable to discover any great merit or beauty in Mr. Gibson's statue of the late Sir Robert Peel, which has been put up in Westminster Abbey at the junction of the north transept with the aisle of choir,—an admirable position. The statue, as it seems to us, shows marks of haste. It is above life-size, and exhibits the statesman, in loose drapery, in the act of speaking: he stands on his left leg, the toes of the right foot merely touching the ground behind him, and he is "knocking down" an argument on the palm of the left hand with a scroll. The likeness seems good, and from an ordinary man the statue would pass muster, barring the upper part of the right arm, which is, surely, too short.

Mr. W. C. Marshall's monument to Sir Robert Peel has been cast in bronze at Mr. Robinson's statue foundry in Lower Belgrave-place. It consists of an upright figure of Peel, 10 feet high, in his habit as he lived, with a cloak over the right shoulder, and two sitting female figures, one representing Commerce and Industry, the other Science and the Arts, indicated by a bale, rudder, corn, &c. in the one case, and a book marked *Ars et Scientia*, a lyre, pallet, wheel, &c. in the other. The principal figure, which was cast in one piece, contains about two tons of metal. As a composition, when in its place, it will, we have no doubt, prove very satisfactory, but the *likeness* is unfortunately doubtful.

Mr. Behnes's statue of Peel, for the City of London, is now in the mould at the same foundry ready for casting. This is 12 feet high, and is to stand opposite the Mansion-house.

The Wellington Memorial Committee for Liverpool have decided to recommend the erection of a column surmounted by a statue of the Duke, the cost of which is estimated at 10,000*l.*; and the East-India Directors have commissioned Mr. Noble, of London, to execute a statue of the Duke in marble for them, 6 feet high, and on an appropriate pedestal.

CAMBRIDGE AND ELY.

ONE night away from home, and both these interesting places seen with great advantage! Let me aid your endeavour, Mr. Editor, to point out instructive trips.

As an architectural and archæological visit, I know of nothing, occupying so short a time, more useful and more enjoyable. By the half-past eleven train from Shoreditch to Cambridge, where substantial hot and cold refreshment is always ready; in a fly—where there are ladies of the party—to the several colleges; back to the station in time to catch the half-past five or half-past six train to Ely; sleep at Ely, see the cathedral next day, walk through the meadows, not omitting the view from "Cherry Hill," and back to London by the afternoon train.

Nor would I pass over in silence the comforts of the "Lamb Inn." A scrupulously clean house, civil waiters, and a good cook, are inestimable recommendations; to which we may add, its close proximity to the cathedral.

At Cambridge, the first place visited was the Fitzwilliam Museum. The interesting, though by no means important, collection of pictures there grows, but not rapidly. The effect of small cabinet pictures in a large apartment may be well observed in the left-hand room on ascending the staircase. Two "Morlands" on one side, and a portrait of Pope—our Pope—on the other, are worthy of observation: the latter, however, is hung too high for so small a picture

to be seen to advantage. In the large room there is much pretence, and the pictures have very large names: there are some nice Canalettis and a Carlo Dolce, though, to my depraved taste, the copy of the same subject—a Madonna—recently exhibited at Gore House, by a student at one of the schools of design, was preferable.

In the large room below is arranged Mr. Disney's collection of ancient sculpture. The room is dark, and has an uncomfortable appearance, but some of the specimens are of exquisite beauty. In the adjoining rooms are some good casts from the antique.

King's College grounds and chapel attracted the usual attention, but here there is nothing new. We may again remark on the dining-hall as being in good condition, and as having a most cheerful gentlemanlike appearance, which cannot be said of all the colleges, where some "feeding-places" more resemble those of the "union."

After visiting some other places, and tasting the mulberries from Milton's tree at Christ's, we inspected minutely the restorations now in progress—or rather recently in progress, for we regretted to learn the works were stopped for want of funds—in the chapel of Jesus College. It has been discovered that what was formerly considered the College Chapel was in reality only the choir of a large church. Much has already been done, but much still remains to do. While the rubbish has been partially removed from the other parts, service has been performed in what was formerly considered the chapel, this being separated from the other portion by a new screen by Rattee, of Cambridge, of good design and workmanship, but totally different in every respect from that at Ely, by the same artist. Indeed, these two screens agreeably illustrate how entirely two things bearing the same name and answering the same purpose, may vary in design and effect.

An agreeable walk through St. John's grounds and a noble avenue of lime-trees, brought us to Trinity, where Roubilliac's masterly statue of Newton, in the chapel, justly claims admiration. No one visiting the University should fail to devote a few minutes to the inspection of this masterpiece of art. A bust, said to be of Locke, by the same artist, is perched up too high for inspection, being placed on a ledge some 15 feet up. It looks as if it and its fellows in the like precarious situation, must needs tumble down. With the exception of what we have noticed, there is but little building going on at Cambridge, in or out of the University—less even than in almost any other favoured town.

On returning to the railway we passed the Fitzwilliam Museum again, and could not but regret that the interior sadly disappoints, after the promising elevation and proportions of the exterior.

Arrived at Ely, the first impression is wonder at the extent of the cathedral; then comes delight that any material could have been found apparently so indestructible, which has lasted for centuries, and has preserved its colour so agreeably. The stone mostly used for the exterior came from Barnack, near Stamford, and exhibits such proofs of its soundness and durability, that the spectator feels assured that what has perished was destroyed by violence rather than decay. In the interior, as your readers know, much has been done, mainly through individual contributions, in the way of repairs, renewals, and additions. On the right, immediately on entering the nave, the old work in the south-west transept has been brought out cleared of its veil of plaster and whitewash, and looks as fresh and solid as possible; indeed, only as Norman architecture, to my mind, can look. This transept is to be used as the baptistery, and a font in corresponding taste is being completed for it, Wren's Italian one, now in the nave, being under order of banishment, from its unsuitable style. Proceeding down the nave, visitors are agreeably impressed with the careful and cleanly condition in which the building is kept, notwithstanding the dusty work in progress.

Various artists in stained glass have exercised their talents on the windows, and in the nave on the south side their respective merits may be easily compared, from the proximity of their works. All persons interested in "presentations" of this sort would do well to inspect these various specimens of chromatic aids in fenestration. They are principally after ancient patterns, but in Bishop West's Chapel, in the extreme south-east corner of the building, is a window in modern drawing by Evans, of Shrewsbury, which deserves attention. The faces are very successful.

The choir is altogether and entirely new. The screen carved by Rattee and designed by Mr. Scott is an elaborate and skilfully-executed work, known to readers of the *Builder* by the engraving which was given of it. The brass gates and the brass work generally by Hardmann, of Birmingham, reflect credit on his skill. The stalls and lower seats by Rattee are works for him to be proud of.

The whole effect within the choir is admirable, and leaves no room for maudlin lamentations over lost arts. I observed an angel put up in the arch of the screen to try the effect, but I do hope it will be removed.

A new altar-screen is to be erected, the centre part of alabaster and the sides of stone tracery. Portions of it are already completed, and are stored away in Bishop West's Chapel; those we saw are very satisfactory, and make me sanguine as to the result. Oras.

THE EXECUTION OF FLINT AND RUBBLE WALLING.

Good construction is of such importance, not only to those who are immediately employed in the erection of buildings, but also to capitalists and the public at large, that it behoves every one intrusted with carrying out these objects to consider well every feature, so that the desired intention may be attained as substantially, yet as economically as possible; and if we neglect this, we prove ourselves unworthy of our position. It is therefore a duty incumbent on all of us to make public any practical information that may be of general use. For how often are brought under our individual notice matters of vast importance, which are passed without the least concern beyond our own private knowledge of them, and which may be of little or no use to us when the means and will of diffusing it among others would render it of the utmost value to them.

My object is to bring under notice, and to offer a few remarks on the mode of constructing either flint or any other kind of rubble walling with Bath or Caen stone, or chalk dressing, as the case may be, in which I have had considerable experience, and which, if I may be allowed to judge, require as much attention as any other kind of building. Careful consideration should be given to the selection and judicious application of the materials which we have to use; and this cannot be fairly accomplished without considerable information, resulting from experience.

When I went first into the flint districts, I had every inquiry to make about the materials, and usual mode of treating them, consequently I found it desirable to visit some old as well as new buildings in the neighbourhood. At length my attention was drawn to one then in course of erection, of the same kind, built of precisely the same materials, and requiring the same method of usage as the works I was about to commence. I was determined to pay this a visit, and to my astonishment found it in a most deplorable state. The arches of the tower were the first which attracted my notice; they had given way, and the jambs, which were built of chalk, were being removed, and replaced with Bath stone. I found, upon inquiry, that the cause assigned for the failure was the action of frost upon the green or wet chalk; and doubtless to some extent this was the case, and as I have myself experienced a failure of the same nature, I can now sympathise with their misfortune; but after a more close investigation, I satisfied myself that there must be another and more important cause, viz. a settlement in the flint walls. Of this I was perfectly satisfied upon examining the arches and tracery of the windows, many of which were being taken out and replaced. Now, from the appearance of the tracery (it being in Bath stone), there could be but one genuine opinion formed, viz. that the lower parts of the walls had given way, and thrown the superincumbent weight above in a racking direction upon the arches, which caused a shifting on the bed of the arch stone and tracery, and, consequently, flushed out large pieces.

Being aware that it was a common occurrence in buildings of this description, of which we have proof in many instances, such as the falling of towers, spires, &c. &c. I was determined to proceed with every precaution, and on my return my first object was to satisfy myself with some simple experiments, well knowing that many of those failures were caused entirely by the want of the knowledge required in the mode of using the materials. I therefore built two piers, one with dressed quoins backed in with flints: the other was built entirely of flints, which I will endeavour to explain in the following manner:—

Having raised 4 feet, I let it remain in that state for three or four days, and then built 4 feet more upon it: the result was, that the first 4 feet had sunk and thrown the quoins out of perpendicular.

The next pier was built entirely of flint, and in precisely the same manner as the former.

I made a standing gauge to the first 4 feet of this pier, and when the weight above was placed upon it, I found that the flints had sunk below my gauge half an inch: now this being the case in so small a quantity, what must the result be in an immense structure, where we have small jambs closely bedded together tailing into those walls which are sure to sink more or less. This is an evil we have not to contend with in London, otherwise it would be better understood. I will now endeavour to explain the manner in which I proceeded, and which proved successful, not having the slightest settlement throughout the entire works.

In commencing the footing, I thought it desirable to run a course of brickwork through the whole thickness of the walls immediately upon the concrete, of which I had about 18 inches in depth, and we repeated a similar course about every foot in height until we came to the window-sills, taking every precaution in leaving apertures in the bottom for the water to pass from the walls to the main drains; otherwise you will find that, upon any sudden change in the weather, the damp will rise up the walls for several feet in height, the flints themselves being of a damp nature, and this will affect the plastering in the rooms.

By this arrangement we have the flint work going up regularly, the different courses properly levelled, and the suction of the bricks had the effect of drying the flint walls, and kept the rain from percolating through.

Where the walls were thickest, and had to carry the most weight, I occasionally ran two courses of bricks selected of the best quality, and so continued them occasionally to the top of the building. In all cases I took the precaution to bed the iron hooping (which should always be used in works of this kind), upon the level courses of brickwork. This was much better than doing so upon the irregular courses of flint, and as the brickwork should not appear on the outside of the walls, it was necessary that long flints should be selected and tailed on to the brickwork for the purpose of bonding the work well together.

It is necessary that flint or rubble walls should be carried up as simultaneously as possible, and kept well covered from the rain and frosts: this is of course desirable in all kinds of building, but more especially in flint wall, and great care should be taken in flushing every course: by this means you prevent the rain water from percolating through, which, if once admitted, cannot be easily stopped afterwards, and often causes a dampness in the building.

In all works of this kind such as stringing, labels, and dressings of every description, the greatest precaution should be taken in working the beds of the stone full to the square (as masons from custom, unless particularly cautioned, will surely work the reverse or the slack of the square): this with a little care in fixing, will form a drip, and instead of the water passing to the inside, which, with heavy storms, it most assuredly will do, unless guarded against in this manner, it will by this means continue down

the outside, and so pass away from the walls into the drains.

Again I have to remark, before I close my paper on the subject, that in building flint walls, unless of immense thickness, there are innumerable difficulties to contend with, and one not the least among them is that of the flues. For suppose, on an average, we may have three or four of them to form one stack, each of them taking up 11 inches in diameter, the wall must be unnecessarily thick to give any degree of solidity to them. Now the method which I adopted, and it was not a very expensive one, was this. I used the terro-metallic drain pipes 9 inches in diameter, which I found sufficiently large in ordinary cases: in those of the kitchen, or where large fires were kept, we used them 11 inches in diameter: this precaution, with the use of a little vat hooping judiciously arranged, will be found invaluable, more especially if we have heavy weights of stacks to place upon the chimney breasts, which is invariably the case in rusticated buildings where flints are used.

You have probably noticed in most of our ancient baronial, as well as ecclesiastical buildings, the adaptation of chalk and flint work most successfully applied with (after centuries of exposure to our varied climate) little or no settlement in them, while, on the contrary, you may see many of our modern buildings crumbling or tumbling to pieces almost before the scaffolding is struck: the only reason which I can assign for this difference is, that the ancients were paid for building well and the moderns are paid for building quickly; the ancients used to collect the drift off the flint roads in the winter, which they preserved for building purposes in the summer; the moderns, if they cannot conveniently and inexpensively procure road drift, take the more speedy, and, to them, the most economical method of applying to the loam-pit.

Chalk, with proper management, may be successfully applied for external as well as internal purposes. In the first place, it should be quarried in the autumn or spring, and left exposed to the summer's heat, so that it may be completely dried before the frost sets in, and when worked, the greatest care should be taken in keeping it well covered over from the rains, for if the slightest moisture remains in the crevices, when the frost sets in you will find them separate in all directions. I was sadly annoyed once with a misfortune of this kind, for, with about three hours' frost, which set in at an early season—I believe it was on the 4th of October, 1849, when we were not at all prepared for it—it so damaged our work, that we were compelled to take the whole of it down and rebuild it. Therefore I trust you will not blame me for mentioning errors in others while I mingle my own with them.

Chalk, like all other materials, requires great care in selecting: some, being of a soft and soapy nature, should not be used in buildings under any circumstances.

The thickness of flint walls should be governed mainly by the weight they have to carry, the number of flues they have to receive, &c. Where buttresses can be applied, they add considerably to the support of such walls, and the thickness, in consequence, may frequently be reduced; but where you have heavy timber-roofs to carry, too much care cannot be taken.

One thing more I have to state; that is, with regard to the consistence of mortar. It should be used in equal proportions of lime and sand, quite fresh, beat up as stiff as possible, and the quality of the sand should be specially attended to: grouting should be avoided, and every care should be taken in flushing in the work.

It happened some time ago, while visiting my friends in Wales, my attention was drawn to the walls of a large, and, indeed, fine-looking building, which had been raised subsequent to my leaving home, and a large sum of money had evidently been lavished upon external appearance without the least concern about the main supporters, viz. the walls. It had a noble Doric portico, with bases, columns, caps, and entablature of solid Bath stone. The main walls were constructed of rubble walling, faced also with Bath stone ashlar, which averaged in thickness, from what I could learn, about 5 inches, which was carried up with and cramped into the rubble walls.

Now, from the description which I gave you of the flint walls, you may easily conceive what the result would be in this case, where little or no precaution had been taken in the construction. Why, of course, the ashlar facing is bulged out in a horrible manner, having scarce one bit of even surface in the entire building.

What a specimen of false economy. Here is a building erected, which, with proper management in the construction, ought to endure for centuries, in a dilapidated state, in say ten years, and, in fact, the defect was observed before the works were completed. Would it not have been much more judicious to have done away with this grand portico, and expended the money in strengthening the walls, if they were so poor? Yet the fault does not rest wholly with them, as a clerk of the works was employed, who should have attended more to his duties during the absence of the architect, who must have been sadly annoyed at having placed his reputation in the hands of those who disregarded it.

I will now endeavour to give you my views in constructing works of this description, for, although we build them successfully in the usual way, still I do not think we should be doing wrong in trying some more effectual means. All being now aware that the thick mortar joints and closely-bedded stone joints settle unequally, must be also aware that this cannot be avoided, unless the one is carried up quite independent of the other. My plan would be exceedingly simple to prevent this. In the first place, I should carry up the rubble walls quite irrespective of the facing or dressing, leaving corbels in rough blocks when convenient, and projecting sufficiently far to admit of paring off in cleaning down the works. With this arrangement, few if any cramps would be necessary, which all architects, from good cause, have a decided objection to where they can be avoided. You have merely to fix slate dowells where they join the corbels, or if necessary all the joints may be served in the same manner. Before putting up the ashlar facing, perpendicular lines should be drawn from one corbel to the other, by which means the whole front may be finished without using a line, which is always so much in the way, and cannot be depended upon in stormy weather. You merely place a straight edge from one block to another, by which you may work with the greatest accuracy: you may also carry up one bay or portion without the least inconvenience or injury to the other. In building in this manner how much less difficulty we should have to contend with in case of a restoration at any time. I noticed this particularly when employed by Mr. C. H. Smith, in Devonshire, where we found some difficulty and great danger in taking down the old work and recasing it. They would also have found many advantages if this method had been adopted in building St. Bartholomew's Hospital, where there have been extensive restorations lately.

In conclusion, I may add, many evils would not occur if the rascally system of low contracting was done away with, which is now carried on to so ruinous an extent, and every tradesman received a fair value for the different portions which he may have to execute: then the person who did his work best would be best paid, which would materially benefit the employers and employed, and the architect's reputation, which is so much engaged, would meet with some degree of protection.

Wm. Thomas, Clerk of Works.

IMPERIAL KIOSK, TOPHANA, CONSTANTINOPLE.

Some of our readers will remember that Mr. W. J. Smith, of her Majesty's Office of Works, was sent to Constantinople a few years ago, to erect a building for the British Embassy. During the time of his residence there he has designed and superintended several works for the Sultan, which will not fail to advance the arts in that country. Moreover, at the request of the Sultan, he has instructed five young Turks in architecture. Every circumstance which can give us an insight into the condition of things in Turkey is particularly interesting at this moment, and we have engraved a view of one of the buildings thus put up.

Architecture is at a very low ebb in Constantinople. The simple rules of art are unknown there, and it is very difficult to get the native workmen to make a straight line; they have, however, considerable taste and intelligence, and, with perseverance on the part of the instructor, made good workmen.

The building, of which the engraving gives a representation, is called in Turkey a kiosk,—and what we should in England call a casino,—a building where his Imperial Majesty the Sultan Abd'ul Medgid passes his afternoons, and ofttimes gives receptions or levees. Our view is engraved from a calotype. Here, too, he oftentimes dines, enjoying the exquisite views which this building commands of the Bosphorus, the Seraglio Point, and the entrance to Constantinople by sea. It is erected on the Artillery-parade, called Tophana: the foundations are on a swamp, with springs of water issuing from every part. The foundations were concreted, the first example of the sort in Constantinople; and the Turks watched this work with great interest, but were incredulous of its results. But for the sultan's confidence in the architect it would have been stopped. The system there, under similar circumstances, would have been piling. The building is now called the "Bijou of Constantinople." His majesty, while the kiosk was in construction, requested Mr. Smith to furnish it; so English upholsterers were sent to, and the sultan has now a complete European edifice. There are English stoves in every room. The interior walls and ceilings have been artistically painted in colours. The roof forms a terrace, and is covered with lead. The staircase is lighted by nine compartments between the capitals of the columns, filled in with crimson stained glass. The building has about 75 feet in frontage, and is 40 feet deep: it is erected of stone, with the exception of the plain walls, which are of bricks stuccoed with lime and sand. The lime in the country is excellent. The carving was done by native stonemasons. The principal front has a portico of square pillars, and faces the Bosphorus. Bas-reliefs in the square columns of the portico represent the arms used by the artillery. The upper floor is for the sole use of his Imperial Majesty; the lower floor for the Sultan's suite.

The covered balcony on the back front, seen in our view, is an addition, and is in stone, with a projection of 6 feet. Here his Majesty reposes on *fête* days, and views his subjects enjoying themselves in the large square, which the balcony overlooks.

On the opening of the kiosk—for nearly every building is opened in state—his Imperial Majesty expressed his personal admiration of the whole work to the architect, and invited, on a subsequent day, all the pashas and grandees of the empire to visit it. This building was erected at the recommendation of his Highness Ahmet Fethi Pasha, a brother-in-law of the Sultan, and one of the greatest admirers of modern civilization, when it is legitimate. The work is as satisfactorily executed as if it had been done in London. The whole cost of the building was about 10,000*l.*

The same architect has erected a modern theatre for Italian operas in Constantinople, and was invited by his Majesty into the imperial box, on a representation given by command of the Sultan before the opening; and after the opera received from him a diamond snuff-box. Just before his departure from the East, he completed a winter garden for the Sultan, with rooms attached, furnished and fitted up with articles of English manufacture, made expressly for it. In the centre of the winter garden is a crystal fountain of large dimensions. Mr. Smith has done other extensive works, but we regret to hear that he has been badly recompensed, and has exercised his art for the advantage of others rather than himself. Against this, however, he has to put the "honour" of private interviews with the Sultan, never granted, as we are told, to any European before.

Kensington.—Some works have been going on at the church here. Alterations and additions are to be made to the National School House, in High-street. The following are the tenders:—W. Hunt, 779*l.*; Carver and Goodacre, 695*l.* 15s.; Brown and Longhurst, 679*l.*; Mayhew, 621*l.* 15s.; Cowland, 611*l.* 15s. Mr. Cowland's tender was accepted.



THE SULTAN'S NEW KIOSK, TOPHANA, CONSTANTINOPLE.—Mr. W. J. Smith, F.S.A. Architect.

PROVINCIAL NEWS.

Aylsham.—The church restorations here are proceeding, but there has been a little straitening from want of sufficient funds. The vicar having besides his large contributions presented an organ, built by Mr. Howlett, of Norwich, at a cost of, it is believed, about 400*l.* the opportunity was taken last week of aiding the deficiency (about 150*l.*) by a formal opening of the organ. The voluntary contributions already raised, and amounting to nearly 1,400*l.* have been and will be expended in reseating the body of the church and chancel aisles. Two small galleries have been removed, together with partitions which filled up an arch at the west end of the church. The vicar fits up the chancel with stalls and benches. Its windows will probably cost him between 700*l.* and 800*l.* The seats are all oak benches. The panelling in the chancel is foliated, and the pews surmounted by carved poppy heads: this part of the edifice is separated from the body of the church by a double series of stalls, placed at right angles with the seats. The seats for the nave and aisles could not be completed in time for the reopening: they will, however, be in keeping with the parts finished.

Thetford.—St. Cuthbert's Church was re-opened on 9th instant. All works comprised in the restoration are in style Late Perpendicular, and comprise new tower, having eight buttresses, a deep ashlar plinth, with base mouldings, and an enriched parapet, having crocketed pinnacles at the angles. That portion of the church which fell down with the tower has also been rebuilt, the walls and masonry restored, the nave, chancel, and porch roofs repaired, and covered with green Westmoreland slates, and a new roof to the south aisle, covered with lead, having new stone crosses and copings. The interior has also been restored and fitted up with new open benches and font. The works were contracted for and executed by Messrs. Boyce and Sharpe, of Thetford, under the superintendence of Mr. Thos. Farrow, by whom the drawings were supplied and the works put to competition.

Godmanchester.—The church here has recently undergone a remodelling of the interior. The old pews have been demolished, the organ loft removed, and the old floor of the church filled with seats of a uniform appearance.

Nutthall.—Some ancient stained glass at the east end of the north aisle of the church here, which was dilapidated and unintelligible, except perhaps to artist and antiquary, has lately been restored by Warrington for the rector, and adapted to the east window of chancel. It now exhibits three figures symbolizing the crucifixion. The space which this window occupied is now filled by a new memorial window by same artist, containing in the centre compartment the figure of St. Mary Magdalen, beneath tabernacle work, and on the centre pedestal the arms of Nixon impaling Hunter.

Cambridge.—The ground for the proposed County Lunatic Asylum has been purchased and paid for contiguous to the town: a plan for the elevation was agreed upon two years ago. The Bedfordshire justices have decided that it would be desirable to unite with Cambridgeshire, and to erect an asylum for Bedfordshire, Hertfordshire, Huntingdonshire, and Cambridgeshire, on the line of the Great Northern Railway, or near it, either at Potton, Sandy, or Hitchin. The Cambridgeshire visitors were to meet on Friday to consider the decision of the Bedfordshire justices.

Bournemouth.—Workmen are busily engaged in preparing the foundations of the Sanatorium for convalescent patients from the Hospital for Consumption, &c. at Brompton. Bournemouth has been selected in consequence of its sheltered situation and genial atmosphere.

Bristol.—The chief stone of a new Wesleyan chapel was laid in Milk-street on Tuesday in last week. Messrs. Pope and Bindon have prepared the plans, and the new building is in progress. Its estimated cost, including 750*l.* paid for ground, is 2,200*l.* Of this sum 1,000*l.* have been raised, and 500*l.* converted into a ground-rent at 4 per cent. The chapel, when finished, will seat from 900 to 1,000 people.

Chester.—The new hide market, at the angle of the cattle market, is now completed. The local *Chronicle* suggests that the thoroughfare known as Hunter's-row, communicating with Northgate-street and at right angles with Princess-street, would form a suitable site for a vegetable market. The property belongs to the dean and chapter. It is said to be pitiable to see the women in front and on the sides of the Exchange, exposed to the inclemency of the weather. The access to the town offices, too, is now impeded by the stalls and the public who purchase at them, and every consideration of convenience and propriety is in favour of this suggested removal. The proposed alteration of place, it appears, is susceptible of a great advantage, namely, a glass roof, so that Hunter's-row might be converted into an arcade, now that glass is so abundant and cheap, and can be manufactured so durably and strongly.

Bilston.—A sufficient number of new Town Hall shares having been taken to justify the committee in commencing its erection, arrangements are in contemplation for laying the first stone of this building in the course of a few weeks.

Liverpool.—It was resolved, at a meeting held on Monday week, to raise subscriptions for the restoration of the chimes at St. Peter's Church in this town. The sum required is 200*l.*

Preston.—The erection of schools in connection with All Saints' Church, in this town, having been resolved upon, and the requisite funds subscribed, on Wednesday last the foundation stone was laid by the Vicar of Preston. The new building (which is to be of brick, faced with stone) will be in the Elizabethan style, with fronts to Elizabeth-street and Isabella-street. The lower part of the premises will consist of an infants' school, 49 feet by 30 feet, with covered play-ground. On the second story there will be a boys' school and a school for girls, combined dimensions 80 feet by 30. The girls' school extends over the play-ground. Accommodation will be afforded for 240 boys, 145 girls, and 250 infants. Mr. Latham, of this town, is the architect, and the undernamed are the contractors:—Messrs. Cooper and Tu'lis, masonry; Mr. Oakley, brickwork; Mr. Coulthurst, carpentry; Messrs. Wilding and Watson, plumbing and glazing; Messrs. Jones and Grundy, plastering; and Mr. George Pye, flagging and slating. The estimated cost of the building is 1,400*l.*

Blackburn.—It has been resolved by poll-voting, almost unanimously, that a public library and museum be established in this town.

Wycliffe.—The old church of Wycliffe, according to the *Darlington Times*, is being restored and renovated. The Gothic windows will be restored with coloured glass by Wailes, and the restorations in other parts of the building will be done, says our authority, under the inspection of workmen sent out by the Rev. Mr. Raine, of Durham. The old pews are about being removed by the parish, and stalls substituted. The east window would have been restored, but that could not be done without elevating the roof. Some curious remains of Saxon and Norman architecture have been dug up, and there are some brasses of the Wycliffe family in a good state of preservation in the church.

York.—The foundation-stone of the new church of St. Thomas in the Groves was laid on Thursday in last week. The site is in Lowther-street. The building will accommodate 500 persons, 250 free. The fabric is to be built according to plans furnished by Mr. G. F. Jones, of York, architect, under whose superintendence the whole of the work will be executed. The contractors are Mr. John Shaftoe, for the masonry, bricklayers' work, and plastering; Mr. John Brown, for the joiners' work; Messrs. W. and T. Hodgson, windows and plumbers' work; Mr. J. H. Cattley, slating of roof; and Mr. R. Bollans, painting work. The walls already reach 2 or 3 feet above the ground. The style of the building is Early English, and the whole will be plain and inexpensive, and cost 1,800*l.* exclusive of site, &c. The estimates of the tradesmen were slightly within that amount. The building will be cruciform in plan, having nave, transepts, and chancel—the latter raised three steps above the body of the church, and separated from it by a moulded and corbeled arch, 18 feet wide and 23 feet high. The nave will be 70 feet 6 inches long, and 28 feet 7 inches wide. The transepts, 27 feet wide; and across, from north to south, 50 feet 9 inches. The chancel is to be 20 feet wide by 22 feet deep—the total length inside being 92 feet 6 inches. The roofs will be open and high pitched, being 39 feet 6 inches from the floor to the apex, and 19 feet 6 inches to the top of the wall. The bell-gable is to be surmounted by a cross, 63 feet from the ground. The stone is from the Collingham quarries, and the walls are to be lined with brick and the roofs covered with Welsh slate. The woodwork is to be deal, stained and varnished, and the windows glazed with cathedral glass.

Wigan.—Application is to be made by the Wigan corporation to Parliament for power to erect a market-place, with its appendages, in this town.

Edinburgh.—It has been determined, according to the *Scotsman*, to re-floor the whole of the suite of state apartments of Holyrood Palace, including the picture gallery; the work to be commenced immediately after her Majesty's return to England. This, there is some reason to hope, is only the commencement of more important alterations and improvements on the house and grounds.

Glasgow.—At a meeting in the Council-chambers, presided over by the Lord Provost, and attended by Mr. Cardwell, as President of the Board of Trade, it was urged on the Government that a geological museum should be established in Scotland, and that Glasgow ought to be its site.——A commencement has just been made for building several extensive ranges of suburban villas and cottages at Langside-hill and Shawlands. The laying out of the ground has now been proceeded with.——The foundation-stone of the Wynd church was laid on Monday in last week.

THE FALL OF A HOUSE IN THE STRAND.

THE inquest was resumed on Monday, the 19th, when it was stated that three independent surveyors, Messrs. J. H. Stevens, Dent, and Lawford, had examined the premises, and that their report would be read at the conclusion of the inquiry. Mr. Stevens produced some sections through the rubbish at different spots, but reserved his deductions.

Mr. J. F. Stanford, architect, residing near the building, deposed that he observed the workmen proceeding in a way he considered dangerous, sinking the earth too low, and that he had called on Mr. Phillips, clerk to Mr. Abrahams, and advised him to see to it. Mr. Phillips, however, thought differently, and finding his advice not taken, he withdrew. In reply to the coroner, he said,—

The bottom of the foundation of the wall was undulating in its character, and the earth had been sunk out below the foundations of the wall to a depth of from 9 to 18 inches. There did not appear to have been any underpinning of the wall attempted, neither were there any "jack" shores, which I consider were required. I do not think, however, if there had been jack-shores that that would have been sufficient. In fact, I am of opinion, and was of opinion at the time, that no shoring would have rendered that wall safe. I should certainly never have excavated in that form myself, but should first have secured the wall by taking out a part of the earth nearest the street, and should then have carried up a pier without removing the earth from the face of the wall. I should have removed it a little at a time, and have carried the foundations through in that manner—piecemeal, as you may say. I did not go over the building. I am sure there were no jack-shores—at all events, there were none that I saw.

Shrimplin, the carpenter, being recalled, said there *were* jack-shores, five about 10 feet high, against the wall. A drawing of the shoring being produced, witness said it was correct.

Mr. Sidney Smirke spoke to the perfect efficiency of the deceased Rowe as a clerk of the works.

Mr. Thomas Tatum, dealer in old materials, when on the roof of a house in Arundel-street, had been struck by the appearance of the old wall, and went down to look at it, when he found the men were cutting into it; that they had got the foundation out below the wall, and even below the footing of the shores.

The raking shores did not appear to me to be nearly high enough for such a wall as that. They did not seem to be above half way up the building. In fact, such shores as there were there could be of no use to the building at all. There were three raking-shores, and no jack-shores whatever. There ought to have been a jack-shore where the ground had fallen at the corner, but there was none. The shores did not go so high as shown in the drawing now produced. I believe, though the foundation was very bad, that if the raking-shores had been of a proper length, the house would have been standing now. The excavations came within an inch or two of the party-wall.

George Cove, a carpenter residing in the Strand, said,—Mr. Thompson had several times asked his opinion about the wall, and he had told him it was decidedly dangerous. Mr. Thompson said the surveyors had assured him it was safe. Witness considered the house was not properly shored, to which, and to the excavations which were even below the footings of their own shores, he attributed the accident. The house ought to have been shored up from floor to floor inside. Plan produced represents the shoring fully one fourth too high.

The excavator employed said—In the front, we were in one or two places 15 or 16 inches below the footings of the wall. In the back part we were not below the wall. I did not cut into the wall, nor did anybody else. We were 14 inches away from the wall, except in two or three places, where we cut up to the wall to see where the foundation was. I made three cuts up to the foot of the wall to see where the foundation was. Those cuts were about 12 feet apart. The footing of the shores was below my excavation.

Mr. Samuel Angell, the district surveyor, was examined at considerable length, and deposed that although the plans were shown to him some time previously, he had not received notice; had no personal knowledge that the works were progressing, and did not consider that his duties had commenced. Being asked whether if he became aware that a building was in progress, he did not consider it his duty to direct his attention to that building without having received notice, said—certainly; but in the present case he felt certain that the notice would come in the usual way the moment the works were commenced.*

In answer to other questions the witness said—I think that the district surveyor has no jurisdiction as to the pulling down of houses, nor am I aware that it is his duty to inspect shoring. A penalty attaches to the builder for not giving notice to the district-surveyor. When I inspected the premises on the 19th of August, I saw and apprehended no danger whatever. Whether underpinning is essential depends very much upon the nature of the foundations. The foundations here appeared to me to consist of a good bed of gravel, which is one of the best that you can have to work upon. It is by no means a slippery or shifting foundation. The practice of the trade is, I believe, to give notice to the district-surveyor two days before the "laying of bricks." That appears to be the generally received opinion, and I think it is the fair one, because the Act provides that two days' notice shall be given "before any building is begun to be built." It also provides, "before any party-wall, external wall, chimney stack or flues, shall be begun to be built, pulled down, rebuilt, cut into, or altered:" but that portion of the section does not apply to this case at all. If I find, upon inspection, that any irregularity has been committed by the builders, I cannot interfere, but must give forty-eight hours to them to repair their irregularity. If they fail to do so upon receipt of that notice, I still cannot interfere, but it is my duty to give information to the official referees. Then, upon the receipt of such information, the official referees are to hear the matter, and if there appears to be any danger of the rules of the Act being broken, they may authorise a survey of the premises.

One of the counsel, "amid considerable amusement," then went on to show that let the condition of a building be ever so dangerous to passengers, it cannot be touched by any process of law until about a month's time. This we need scarcely tell the majority of our readers is altogether erroneous. On application by the district surveyor and the overseers, the official referees immediately authorise a survey, and on receipt of a copy of the certificate of the surveyor (forwarded by the referees), it becomes the duty of the overseers (unless in the City, when the Lord Mayor and Aldermen act) to shore up the building securely, or put a proper hoard around it. In an emergency the whole may be done in a day.

The inquiry will be resumed on Monday, 26th.

* Although Mr. Angell exonerated Messrs. Lucas in this case from any neglect in not sending the notice required by the Act, this measure is systematically avoided by a large number of speculative builders. In some of the districts, the Buildings' Acts are very to be utterly unknown; provisions of the greatest consequence to the public safety being altogether disregarded. We shall take an early opportunity to address a few words to the builders of the metropolis.

It seems to be a public impression that the fallen house in the Strand was in so ruinous and dangerous a condition that it became the district surveyor's duty to condemn it. The evidence shows clearly that it was not in such a state as to be liable to be condemned on that account, whatever may have been the occasion of the fall. If that house ought to have been reported as dangerous, you must be aware that a large proportion of the metropolis, where so many thin and tall houses partly depend on each other for support, would be liable to be condemned also. I agree with your judicious remark in your last number, that the condemnation of a building is a serious matter, sometimes involving the ruin of the owner; and I submit that the animadversions of the press may tend to make the district surveyor interfere too much with private property in cases where he ought to use the nicest discretion, and to act, in the words of the statute, "faithfully and impartially, and without favour or affection, prejudice, or malice."

A District Surveyor.

THE ELECTRIC LIGHT.

Having noticed how feelingly you allude to the inconvenience you have sustained from the deadly power of gas in ill-ventilated rooms, I wish to hold out the hope that such evils as those you complain of will be remedied when the electric light is adopted, as *it must one day be*, in many situations where gas is now employed. I will not now speak of the wonderful properties of that mode of illumination as developed by Mr. Staite, except to notice one which applies to your objections to gas, viz. the coolness of the electric light.

To ascertain correctly this point, I wrote to Liverpool on the subject, and I give you the result of my inquiry. I must first premise that the electric light exhibited at Liverpool on the tower at Princes Dock since May 9, is equivalent to 1,000 wax candles, Trinity standard, and that the light itself is in a glass cylinder 22 inches high, and about 4 inches in diameter. This is the answer I received—"The glass over the light is quite cold up to nearly half its height: the only heat is in the direct plane of the light, and is more like a sunbeam than anything else to which I can compare it. The top of the glass, say the upper 11 inches, is too hot to touch, but nothing like the heat of our ordinary gas or oil lamp: the glass has never yet flown or broken." It will therefore be a great desideratum where a light so powerful and so cool can take the place of gas in all buildings where numbers are congregated, and to artists especially the boon will be very desirable, so that they may be able to prosecute their labours by an artificial light, without the head-ache and exhaustion now produced by gas. The electric light requires no supply of air, which, therefore, it neither consumes nor vitiates.

G. R. F.

NOTES AND QUERIES.

ARCHITECTURAL AND ARTISTICAL.

4. *Worship of Baal.*—Lord Lindsay reports in his travels in Egypt and the Holy Land that ther eare at Soaf, Phœnician monuments identical in every respect with Stonehenge. Such circumstance would afford strong evidence of the universality of the worship of Baal at some remote period. Have these remarkable monuments been carefully examined by artists or antiquaries?

5. *Pumps.*—At Nuremberg and elsewhere in Germany the common street pumps are worked with a double piston, so that the handle hanging perpendicularly like the pendulum of a clock, each stroke, whether to or fro, draws water, thus saving the unproductive labour of lifting the handle. What are the advantages (if any) of our ordinary lift-pump over pumps of the above construction?—S.

6. *Binny Quarry, near Edinburgh.*—Have any of the Scotch readers of the *Builder* investigated a fact connected with a quotation in your last number (Sept. 10) from the Reports of the commissioners of Parliament on the Quarries of Great Britain, viz. as to the different effects of the town and country on the well-known and much-used Binny stone near Edinburgh? It differs entirely from Ancaster stone, as the advantage appears on the side of the town, *where it retains its colour*, but in the country, and away from smoke, it becomes of a deep red colour. I have understood the subject to have been for some time under investigation, but have heard of no report.

7. Can one of your correspondents give me a recipe for making elastic or gelatine moulds, to cast plaster ornaments that are undercut, and describe the process?

ILLUMINATING PUBLIC CLOCKS.

Your "notes and queries" will make an interesting corner to many a reader. I am happy to be able to tell how the hands are lighted in the great clock at Havre.

Having for years devoted much attention to the best mode of illuminating public clocks, I was as much struck as your querist with the admirable effect of the dial, of which I first saw one in 1851, at the Tuileries. In that the fault continually found in the ordinary mode of lighting by a circle of gas jets showing behind a *ground* glass dial-plate is effectually removed. It was always impossible with all previous methods, to get just light enough. Thus, the dials were either dismally dark, or when a blaze of gas was turned on, the excess swallowed up figures, hands, and all. The great feat accomplished in this case is the illuminating *the hands* as well as the figures, and leaving the whole of the rest of the dial a dead black. A greater force of contrast cannot be desired, for the hands stand out to the eye as if of fire, and can be easily read at a great distance. I considered this as so superior to any former mode for public purposes, that I at once secured a patent for Great Britain, and the effect can be seen by any one in the upper clock in front of my manufactory in Cheapside, which is nightly illuminated on this principle.

The light is fixed behind the dial, below the line of sight, so as to stream through the clear plate glass which forms the body of the dial without interruption, except where the hands and figures intervene. They being of ground glass, arrest the light in its passage, and are thus alone visible, while the clearness of the rest of the dial is rendered more intense by a background of dead black cloth which absorbs all extraneous rays, and thus produces the most striking contrast. I have no doubt this mode will soon become universal.

Having been entrusted by the Government with the manufacture of the great clock about to be placed in the Tower of London, I hope to be able to show there a fine specimen of this mode of illumination with full effect.

John Bennett.

COMMITTEES AND CLERKS OF WORKS.

At a public meeting held lately at Blackburn, arrangements were entered into for the erection of new central national schools there. Messrs. Sharpe and Paley, of Lancaster, were appointed as the architects, or rather as the designers merely; for a building committee was appointed, with power to appoint and dismiss the clerk of works, and "under whose control and direction such clerk would have to perform his duties," as the astute gentleman who carried this point, namely, "Mr. Stones," expressed it; so that the "building committee" is kindly to relieve the architects of the most onerous part of their duties as architects, viz. as masters of the clerk of works, between whom and his responsible superiors, the "building committee" of course, the sufficiency of the workmanship of the contractors must be seen to, and the future safety of some 900 or 1,000 of the rising generation of Blackburn be secured. If the parents of these children, however, have any regard for the lives of their little ones, they will insist, so far as they have voices in the matter, that the qualifications of Mr. Stones and his coadjutors for seeing

that the stones or bricks of the building are well and sufficiently put together by the builders, with good sound mortar, and timbers of adequate strength, are looked into and found to be satisfactory; or otherwise, that the architects have the full and entire responsibility thrown on their shoulders, by giving them the *bonâ fide* mastery over the clerk of works, who is, in fact, or ought to be, the local, and practical, and ever-watchful architects' check over the contractors, whereas the obtuse meddlers who interfere with and destroy that responsibility, and so overreach themselves and their constituents, appear to imagine that a clerk of works ought to be a "building committee's" check over the architect! as if *he* were the antagonist who required to be watched, not the contractors! It is not the first time that serious mischief has arisen from stupid and self-sufficient intermeddling such as this. In justice to the chairman of the public meeting referred to, we must here note that he unavailingly insisted on making the clerk of works entirely responsible to the architects, and not to the building committee.

ANNUAL MEETING OF GERMAN ARCHITECTS AND ENGINEERS.

Cologne.—On the 16th inst. began the gathering of the above body, numbering 280 members. The first meeting was convened on the *Neumarkt*, whence the members proceeded to view the free port and its new construction. All the crafts in the Rhine had hoisted their colours, and their crews greeted heartily this gathering of scientific men and artists. After having carefully examined this useful construction, the members viewed several of the ancient churches of Cologne. In the saloons of the *Casino*, an exhibition of architectural decorations and ornaments, plans of buildings, and works of sculpture, has been formed, amongst which the works of the Dom-sculptor Mohr, the plant-ornaments from the sculpture-*atelier* of the cathedral, were conspicuous. Of M. Welter some ornaments for the Emperor's hall at Aix-la-Chapelle were to be seen, as also numerous plans for the new Rhine bridge by M. Wallbaum, inspector of hydraulic works. Of works of sculpture, a ciborium of silver, made by M. Horn, executed in a masterly style after a Gothic pattern, was exhibited. The first meeting was opened by a speech of the Lord Mayor of Cologne, M. Stupp, after which M. *Zwirner*, the Dom-architect, read a paper on the topography of Cologne from the earliest period down to the present time, depicting the various styles of architecture of its buildings in a most lively manner. The afternoon was spent in the viewing of the churches, St. Maria in the Capitol, St. Peter, Sta. Cecilia, and the *Civic Hospital*, a building and an institution which is the finest memorial of the beneficence of the burgesses of that ancient city. On the second day (17th Sept.), the other curiosities of the town were viewed, especially the picture-gallery of M. Architect Weyer, one of the best in Germany. At the following meeting many interesting papers were read, as on the new hydraulic works in Hamburg, on the climate and physical and art history of Egypt, &c. On the 18th, the Association made an excursion on the Rhine to *Remagen*, where the church of St. Appolinaris, built by M. Zwirner, attracted general notice. Great praise was bestowed on the frescoes of Messrs. Deger, the two Müllers, and Deger, of which the latter are amongst the finest lately executed in Germany. M. Zwirner ascended the platform and gave a short description of the church and the frescoes. Subsequently, the orchestra, placed in the crypt, executed the *Stabat Mater* of Rossini. The next and concluding business of the Architectural Association will be the examination of the cathedral.

THE ARCHITECTURAL ASSOCIATION.

THE Architectural Association will commence their session with a *conversazione* at Lyon's Inn Hall, on Friday evening, October 7th. Any member of the profession who desires to attend may doubtless obtain a ticket by writing to the honorary secretaries. We heartily wish the association a successful season, and that each member in his own practice may be able to carry out their collective motto,—"Design with beauty: Build in truth."

Miscellanea.

RAILWAY MATTERS.—Mr. J. Roche, jun. the inventor of a patented double-tiered passenger-carriage, noticed lately in the *Builder*, writes us to say that he has ascertained that such a carriage would not be interfered with by either tunnels or bridges on the present lines of railway. We had cursorily referred to the risk of such an interference while noticing the carriage in question. Though unwilling to express any adverse opinion on a subject which we have not examined, we can scarcely avoid remarking, that we fear such a form of carriages would not tend to increase their safety, a desideratum much to be wished for in any new modifications of passenger carriage.——It is proposed to construct a railway round the quays at Bristol, in connection with the Great Western, the Bristol and Exeter, and Midland, which companies have intimated to the Chamber of Commerce that they are favourable to the proposal.——A convention has been concluded lately at Lausanne between the delegates of Sardinia, of the Valais, and the Canton du Vaud, according to which the line from Martigny to Aosta by the Great Saint Bernard is to be completed in five years. Sardinia will form the line through its territory entirely at its own expense: Le Valais will form that up to the tunnel, and the Canton du Vaud will pay 200,000 francs for the construction of the tunnel, and obtain an equal sum from the other cantons and the federal government.——The Great Indian Peninsular Railway Company have received a notice from the India House that they will be allowed to make an addition to their capital of 1,500,000*l.* Their present capital is 500,000*l.* which has been found sufficient to construct the experimental line of thirty-five miles from Bombay to Callian. Of the fresh sum to be created, 500,000*l.* is for a continuation of the experimental line to Shawpoor, a further distance of eighteen miles. The remaining 1,000,000*l.* is to be employed for the commencement of two main lines, one to proceed south-east to Poonah, and the other north-east to Khandeish; it being understood that, while the newly-projected Central India Railway Company are to survey a route for a junction with the Bengal Railway at Agra, by way of Baroda, the Great India Peninsular Company are to perform a similar service for a junction at Allahabad or Mirzapore.

DINNER IN MONTREAL TO MR. R. STEPHENSON, M.P.—On the 20th ult. a public dinner was given in Montreal to Mr. Stephenson, who has gone to Canada to design the bridge at Montreal, accompanied by Mr. Jackson, M.P. the contractor. The Hon. Peter M'Gill presided at the meeting, which was addressed both by Mr. Stephenson and Mr. Jackson. The Canadian papers state that there is quite "a Jacksonphobia" there at present. Mr. Stephenson stated at the dinner that in his opinion the bridge would completely withstand the force of 30 to 40 feet of piled ice which it would have to cope with in winter, and that the site ought to be above the town, and not far below Nun's Island. Mr. Jackson drew the attention of the Canadians to the advantages of railway extension.

WANT OF HOUSES IN MELBOURNE.—The *Australian Gazette* says that so great are the privations which new emigrants are put to on first landing, that they are glad to sleep in the iron boilers that are lying about there in all directions, and for which "accommodation" there are regular rents for "ground floor" and "upper story." Immigrants of all sorts speak of the immediate prospects of the building trades there as comprising something like a town "diggin," at which few have as yet set to work.

ELECTRICITY IN WEAVING.—Having seen in your journal a paragraph stating that the Chevalier Borelli, director of the Sardinian telegraphs, has invented a system of applying electricity to the Jacquard loom for weaving figured patterns, I beg to state that Mr. Woodcock, of Islington, explained to me, ten or twelve months ago, a plan for directing a Jacquard loom by the electric current. His plan was to have the pattern painted with some non-conducting substance, such as varnish, on a metallic roller connected with a galvanic battery: a row of wires was to pass from end to end of the roller, corresponding with the number of threads in the cloth, so that as the roller slowly revolved by the machinery, the threads would be raised or depressed, according as the current was cut off by the wires coming in contact with the painted pattern. By this means one application would work any number of machines. I understand Mr. Woodcock also described the invention at the time to several gentlemen in London, and also wrote to several houses at Manchester, requesting them to take up the invention or render assistance to bring it out. Now, Sir, believing, as I do, that the invention will be of vast importance, I hope you will be kind enough to explain this matter, and not allow a foreigner to take the credit which really belongs to a countryman.

C. NICKENSON.

LIME FLOWERS.—At the meeting of the British Association, on Monday, Mr. Pearsall noticed some peculiarly formed substance called "lime flowers," taken from the brickwork of the reservoir of the Hull waterworks, before they were completed for use. He said that when the reservoir of the waterworks was constructed, the water was let in; but it was soon discovered that it was necessary to relay the whole of the brickwork. The water was let out, when, for the extent of about 150 yards of the slope on one side of the reservoir only, was found several rows of stems and bulbs—formations of curious structure, some closely resembling the stems of vegetables and flowers in the bulb shape of tulips. It was found that these curious formations were from the materials of the cement and mortar which had not set, and they had grown upwards in the water. They dissolved in water with effervescence, and by other tests it was clear that they were chiefly composed of lime. Some of the stems were upwards of a foot in length, being tubular, having a free space throughout, and at the upper extremity expanding to a sort of bulb about the size of a small egg. It was a remarkable circumstance that the production of these substances took place only on one side of the reservoir, and none at the other side, and none at either end; nor had any reappeared since new brickwork had replaced the imperfect bedding and bricks of the first construction, and on that side of the reservoir the whole of the excavated earth, to the height of 18 feet, had been placed. It was thought if the rapid production of these forms were quite understood, they might throw some light upon the production of silicified nodules in chalk. The similarity of some flints with some of these calcareous forms was remarkable. Professor Andrews considered that these formations were analogous to stalactites, and in some degree their fantastical shape might be owing to some extraordinary physical characteristic. [Might they not have been simply vegetable fungi growing out of the lime as a soil, and saturated or grossly charged with it throughout?]

A "FLYING CHARIOT."—Lord Carlingford has sent a model of an invention of his so called to the Dublin Exhibition. It has two expanding wings to bear its weight, and two screw wings to draw it forward. His lordship calls on the scientific to disprove if they can, the soundness of the theory of this "flying chariot." His lordship, while complaining, in the *Dublin Mail*, of the place assigned for his model in the Exhibition, says, "Yet I imagined, in placing it at the Great Exhibition, that the new system which it introduces would at once be admitted, and that I should have found in Ireland men scientific, or, perhaps, I should say, courageous, or generous enough to admit that in it they see the accomplishment of a new, simple, and clear principle, and that I should not have to wait to make the *trifling alteration* or disposition to its powers for that acknowledgment, or until I had made it quite evident to the eyes of all; but such is not the case."

THE CAMBRIAN ARCHÆOLOGICAL ASSOCIATION.—The meeting of this association was held last week, under the presidency of Sir Joseph Bailey, bart. The grand jury-room in the Shire-hall was fitted up as a museum, and adorned with paintings and sculpture furnished by Mr. J. E. Thomas. The first meeting took place in the Town-hall on the Monday evening. The objects of the society were explained by different members of the association in lengthened addresses. In course of the week the members and others made excursions to visit objects of interest. In the evening lectures were delivered in the Town-hall,—by Mr. Longueville Jones, on "certain desiderata in the study and preservation of Welsh Antiquities," Mr. Davies, on "Herefordshire, British, Roman, and Saxon;" Mr. Moggridge, on "Two small Roman Camps near Swansea;" and papers, by Archdeacon Williams, on "Carngoch and Carreg Cennen Castle;" Mr. Stephens, on "the Antiquities of Merthyr and its neighbourhood;" Mr. W. Rees, on "Two Druidical Circles and a large Roman Camp on Trecastle Mountain;" and Mr. Moggridge, on "Culver Hole, Gower," &c. were read.

THE CAMPANILE IN TRINITY COLLEGE, DUBLIN.—This new building is now progressing. As described in *Saunders's News Letter*, a square base, built of granite, with four perforated arches, will rise to the height of 40 feet, on the angles of which will sit four colossal statues, executed by Mr. Kirk. Above that rises a circular building, surrounded by Corinthian columns, over which is raised a smaller circle, forming a balustrade of open stonework, crowned by a lofty dome, beneath which will swing the bell, the whole surmounted by a large metal cross. The total height from the ground will be 95 feet, about the height of Nelson's Pillar. A temporary studio has been erected on the ground for the sculptor. The statues are emblematic of Law, Physic, Divinity, and Science. They are 9 feet high each, and are carved in Portland stone. Mr. Lanyon is the architect.

THE GROANING OF ST. PAUL'S CHURCHYARD.—I am old, and should like my voice to be heard by the Corporation of London. The New Cannon-street West is to be opened very soon. Alas! I expected it twelve months ago; but what a disorder it will bring into my south side by the immense weight of traffic coming from the north and the east, as well as from the west and the south, all meeting in confusion in this narrow part of me. A very small artery it is, indeed, and not wide enough to admit a quarter of it, yet the City doctors appear determined to force it through me, but I wish you to tell them this is a draught I cannot swallow, without doing great injury. Why don't they carry out the proposed street from Earl-street, and in a line with the opening into the New Cannon-street West, by the end of Great Trinity-lane? This would be a great relief to me, and ought to have been now nearly ready, so as to have been opened at the same time as the New Cannon-street.—OLD ST. PAUL'S.

NEW BURIAL-GROUND FOR LAMBETH.—On Thursday in last week a large meeting of ratepayers was held to discuss the propriety of purchasing a piece of land for the new burial-ground for that parish, when Mr. Taylor submitted an offer of land at Garret-lane, Wandsworth, at 300*l.* per acre, with roads of approach. Mr. Taylor urged the desirability of closing with the offer, as some parishes were asked 600*l.* per acre. The size of the land was 30 acres. According to the estimate of the contractor of the works at the Abney-park Cemetery, the expenses for the necessary erections would be about 9,850*l.* He then moved a resolution in accordance with the above statement. A conversation ensued concerning the charges of the various cemetery companies, in which the solicitor to the Woking Cemetery Company and others took part, but ultimately Mr. Taylor's proposition was unanimously carried.

THE YORKSHIRE ARCHITECTURAL SOCIETY'S VISIT TO RICHMOND.—A general meeting of the members of this society was held at Richmond on Tuesday in last week. The first place of rendezvous was the Parish Church, whence the members proceeded to visit the ruins of the Priory. The Castle was next visited, and Holy Trinity Chapel, in the Market place. A public meeting was then held in the Town-hall. Sir William Lawson, bart. in the chair, in the absence of Lord Zetland. Mr. James Raine then read a paper on Easby Abbey, and the Rev. James Turner one by the Rev. A. W. Headlam, on Wycliffe Church. The party afterwards proceeded, in company with some of the ladies and gentlemen of Richmond, to view the ruins of Easby Abbey. It was announced that on the following day (Wednesday) an excursion would be made to the churches of Melsonby, Wycliffe, and Staindrop; Raby Castle and Barnardcastle; Egglestone Abbey, Stainforth, and Kirby Ravensworth.

COMPETITION AT CARMARTHEN.—In your esteemed publication, No. 542, July 25, 1853, the Town Council of Carmarthen advertised for plans, &c. for a cattle market and slaughter-house. I perceive that the plans of a gentleman of Neath have been accepted and are to be carried out. Surely if the first premium has been awarded, the one entitled to the second ought ere this to have been made acquainted with it, and the unsuccessful competitors have had notice that their plans might be had on application. It seems that the good folks at Carmarthen are rather phlegmatic in their decisions.—A COMPETITOR.

DEMOLITION OF ENGLISH TOMBS AT BOULOGNE.—The British Consul at Boulogne has received formal notice from the Maire of that town of the intention of the authorities to demolish the tombs of British subjects buried in the cemetery of Boulogne, unless the ground be purchased according to the rules of the cemetery, *à perpétuité*, in such cases. The municipality of Boulogne are acting, it is said, precisely as the churchwardens of an English parish would in the circumstances. Four months are allowed from the 25th of this month before anything is done. With regard to one particular grave the French authorities have displayed a kindly feeling. The *Amphitrite* monument the municipality will allow to remain without purchase, and will present it, and a certain portion of ground round it, to the English public, on the simple condition that four pillars and an iron railing or chain be placed round it to protect the spot. With regard to the other tombs, the period of concession, in some instances, expired some thirteen or fourteen years ago.

BIRMINGHAM SCHOOL OF ORNAMENTAL ART.—The annual meeting of this institution, late the School of Design, was held on Tuesday in last week, at the rooms in New-street. There was a large attendance, principally of ladies; and the rotunda was studded with the labours of the students. Lord Lewisham, M.P. occupied the chair. The Hon. and Rev. G. M. Yorke read the report of the committee, which was considered satisfactory, and was adopted. Prizes were distributed to the students, and various appropriate resolutions passed.

THE METAL TRADES.—Iron is steadily recovering from the late plethora, if we may so call it, of the price-list, but it will be some time ere it be fairly convalescent; and it is to be hoped it will not "get up" too soon. Lord Ward has announced a rise in our iron an increase in the rate of wages, and coal lime from an increase in the rate of wages, and coal and ironstone are both looking up. Some anxiety is felt in the neighbourhood of Rowley, Heyley, and Broomsgrove, respecting differences which are likely to arise between the nail-forgers and their employers. It appears that the workmen have appealed to their masters for an increase of wages, owing to the high price of coal and provisions. A large meeting of forgers has been held at Broomsgrove, to consider the propriety of striking for an advance of 10 per cent. upon the present prices, when it was determined to give the masters a week's notice of the advance; and if they did not consent, a general turn-out was threatened. The copper trade is also showing a tendency to recover from the oppression of high prices, and the demand from Australia is said to be great.

FIRE-PROOF CEILINGS.—A correspondent suggests to builders that in erecting houses they ought to make the ceilings not ignitable, as they are when the plaster cracks and loosens and the laths take fire. He remarks that some years since a fire-preventive plaster was patented which he saw resist flame on Kennington-common. There is a patent in which woven wire is used in place of laths, and we took care to bring it before our professional readers some years since, and, in consequence, it came at length to be extensively used abroad.

STRIKERS.—The *Times* makes the following statement,—"We presume, too, that there will be so much honour among those who strike, especially among the foremost, that they will not desert their comrades, particularly those they have misled. We happen to know a case, which we believe to be by no means singular, strongly illustrating the notions of honour apt to prevail in these quarters. A young, but very clever and accomplished carver in wood, by the recommendation of a friend, procured employment at the works for the new Houses of Parliament. As soon as he got to the works he found that, by a rule of the men themselves, he could not be put to the higher branches till after a certain period, and accordingly could only be allowed plain work, far below his powers, and only a certain quantity of that every day. This was at a time when the public was crying out loudly against delay; and a large proportion of the men who imposed these arbitrary rules were foreigners. After a time they struck for an advance of wages, and the new hand, who, having a wife to maintain, would gladly have gone on at existing rates, was obliged to go out with the rest. By and by they came to terms with the authorities of Bankside; but, so far from insisting on the employment of the whole of those who had gone out with them, they sacrificed all the new hands, being themselves glad enough to diminish the competition. This, we repeat, is by no means a singular case: on the contrary, we have frequently met with men who complained bitterly that, after being compelled to strike against their will, they subsequently found that the originators and leaders of the strike privately arranged with the masters for their own return, and left the others in the lurch."

ELECTRO-MAGNETIC WASH-BOARD.—Among the novelties at the New York Exhibition, Mr. O. Rice, of Cincinnati, has exhibited an "electro-magnetic or lightning wash-board;" that is, a board used in the United States by laundresses, which presents a surface of ridges, against which to rub the linen, and thus save much manual labour. But the surface of this board is metallic, composed, we presume, of zinc, with some other metal, and partly framed with copper. The inventor claims that this wash-board is strictly scientific in construction, and of great benefit to the operator, as well as an economical labour-saving machine, the electro-magnetic current assisting in decomposing and detaching the grease and dirt from the clothes, by which operation there is to be a decided saving in time, labour, and soap, and, of course, less wear and damage to the fabric. Ladies suffering from nervous complaints, stiffness of the joints, &c. are slyly advised to practise upon it in place of the washerwoman.

THE METAL IN SOLOMON'S TEMPLE.—It has possibly not occurred to many of your readers that the temple at Jerusalem was most probably indebted for a great part of its ornamentation to this remote island of ours. That it was so, I would thus endeavour to show:—The principal workman engaged by King Solomon was "Hiram, out of Tyre. He was a widow's son, of the tribe of Naphtali, and his father was a man of Tyre, *a worker in brass*; and he was filled with wisdom and understanding, and cunning *to work all works in brass*, and he came to King Solomon and wrought all his work."—1 Kings vii. 13, 14. The extent to which brass was used in that matchless edifice may be learned by a reference to the chapter just quoted. Now, if I do not greatly err, brass (properly so called) was then unknown, and *bronze*, a mixture of copper and tin, was the article so lavishly made use of. Whence, then, was the requisite quantity of tin procured? The readers of the *Builder* need not be told that the merchants of Tyre, the native city of Hiram, obtained by far the greatest portion of it from Britain and the Scilly Isles—"the tin islands,"—Spain contributing a smaller share.—BETA.

TENDERS

For erecting a dwelling-house (exclusive of offices) Brixton-hill, for Mr. Chas. Clement. Messrs. Willshire and Parris, architects. Quantities supplied.

Locke and Nesham	£2,793
Higgs	2,655
Jno. Willson (accepted)	2,543
Howard	2,359

Delivered for the erection of an infirmary, &c. at Gravesend, as recently advertised in the *Builder*. Mr. Jno. Gould, jun. architect.

Cobham	£2,365
Lillestone	2,210
Marchant	2,185
Pink	2,100
Wood	2,083
Carley	2,050

For repairs of Mountfield Court Lodge, Sussex.

Young, Hastings	£1,790	0	0
Balstone, Hastings	1,600	0	0
Vidler, Hastings	1,557	0	0
Harvey, Hawkhurst	1,345	0	0
Horscroft, Clapham (accepted)	1,279	10	0
Harman, Hastings	1,047	0	0

TO CORRESPONDENTS.

"N. and Co." "H. H." Vienna all right) "A Constant Reader." "J. J." "O. J." "T. M. E." (consult a respectable patent agent), "G. T. C." "W. A." we do not participate in his objection), "Alpha" (the clause in question has long been in use. It is of course open to a builder to refuse to sign a contract containing it), "H. G. C." (will appear), "G." (ditto), "Fairplay," "Mr. De S." "A Common Observer" (the circumstance is perfectly well known), "G. R. F." "A. and W." "J. J. S." "H. C." "W. N." (we have so often proved our forces from religious bias, that comment on the letter is unnecessary), "F. F." "Subscriber" (we cannot say), "X. Y. Z." "H. M." (view will be engraved), "W. T." "J. S. S." "Aberdour," "W. T." (an advertisement would probably be successful), "W. J." (ditto), "R. H." (when will there be a meeting? We are looking anxiously for one), "P. B. D" (we must decline giving an opinion), "H. M. P." "Q." "J. W. B."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher

ADVERTISEMENTS.

THE NATIONAL PROVIDENT FREEHOLD LAND SOCIETY.—Offices, 472, New Oxford-street, Lond-n.

Shares, 30*l* each. Entrance-fee, 1*s.* 6*d.*; and Monthly payments, 8*s.* per share. Interest on completed shares and payments in advance. No quarterage. No book or extra payments. No fines on unadvanced shares. Prospectus and rules gratis.

PETER WILLIAM CLAYDEN, Secretary.
Agents Wanted.

FINSBURY & GENERAL FREEHOLD LAND SOCIETY, established 1850. Enrolled pursuant to Act of Parliament. Office, 48, BEDFORD-ROW, HOLBORN. Hours of business from 10 to 4, and 6 to 8, and every alternate Wednesday from 6 to 9.

PRESIDENTS.
T. S. Duncombe, esq. M.P.; John Williams, esq.; James Wyld, esq.

The Fifth Public Ballot for Rights to Allotments on the Wood Green Estate recently purchased by the Society, will be held at the Gray's Inn Coffee-house, Holborn, on TUESDAY EVENING, OCTOBER 11, 1853. Chair to be taken at Half-past Eight o'clock precisely. All shares issued up to Half-past Eight o'clock that evening, on which one month's subscription has been paid, will be eligible for the ballot. – Monthly subscription, 4*s.* Entrance and rules, 1*s.* 6*d.*

R. A. MARCH, Secretary.

THREE PLOTS of FREEHOLD LAND, close to the town of Dover, with fine view of the Castle &c. near the new church in the Folkestone-road, each lot with a frontage of 66 feet, 180 feet deep, suitable for the erection of villas, which are in demand. Also Four plots at Ashford, in Kent, 33 feet front, 100 feet deep. Price 40*l* each, title-deeds included.—Apply to F. J. 24, East-road, City-road.

LEASEHOLD ESTATE for SALE, to pay 14 per cent. producing a net income of 170*l* per annum. The houses have all shops, let to good tenants, and in thorough repair, held on lease for an unexpired term of about 27 years.—Apply to Mr. MAY, 90, Leadenhall-street.

VERY EXTENSIVE and IMPORTANT FREEHOLD PREMISES, comprising numerous Buildings, and about Six Acres of Land, in the city of Bristol.—TO BE SOLD, either together or separately, the ST. PHILIP'S IRON-WORKS, situated close to the Great Western, Midland, and Exeter Railways, having a water frontage of 1,150 feet. The buildings are on a large scale, and were used by the late owners for engineering purposes; have been recently erected in a superior manner, of the best materials, and may be easily converted into several and separate suitable premises for a soap-house, chemical works, brewery, tan-yard, cotton, flax, saw, or grist-mill, or any manufactory requiring extent, securing to each valuable water frontage.—The portion constituting the forges and smithies of the long-established firm of Acramans and Co. cannot be improved on; it has a water-dock within the premises, and coal can be obtained within a few hundred yards, altogether presenting a singularly advantageous opportunity to re-establish the lucrative business carried on by the late proprietors in this department.—For plans and particulars, apply to Messrs OSBORNE, WARD, and Co. Solicitors, Bristol; or to EDWIN NAISH, Auctioneer, 7, North-street, Bristol.

BUILDERS of the highest order, or of the lowest, are respectfully informed that MORE ADVANTAGEOUS TERMS than any hitherto known in the trade are offered to them on a splendid ESTATE close to a railway station six miles from London. The freeholder may be met with personally at ten a.m and five p.m. daily for at any time by appointment, at the City Arms Coffee-house, 34, Chichester-place, King's-cross, or answer any letter addressed there to P. B. MERLAT, Esq.

The Builder.

SATURDAY, OCTOBER 1, 1853.

SMOKE is a more tangible opponent to fight against than some people think. "It will all end in smoke," is a common expression to describe something which is, after all, nothing. This is a great mistake. Smoke is not nothing: it is a something which the public find it very difficult to get rid of,—an obvious, avoidable evil,—one of our disgraces. According to the Parliamentary Reports, we are to have another year without any reduction of its extent and blackness; and it is too much to be feared that the enactment on the subject, even if passed next session, will be one of those trimming measures which serve but to put off the effort to a future day.

The innocent animals sketched from nature, and placed at the head of this article, are the one polluted, and the other astonished.

If, however, the country sheep wonders at the blackness of his neighbour, how much more must the sheep of experience be astonished (himself living in the neighbourhood of the court) to find by comparison with the coat of his new friend, fresh from verdant plains, the blackness of his own. Our sheep, perhaps, has a power of observation, and may consider if this amount of blackness attaches thus to the coat of wool, that his daily food (the peculiarly-coloured grass of the London parks) must not be altogether wholesome: he will also consider the nature of the air thus loaded with large and distinct flakes of soot, visible to the eye, and think of unwholesome matter swallowed into his lungs, and that to an extent which could only be fully understood by comparison with the country atmosphere, by the display of collected particles, or by means of the microscope.

If sheep cannot thus estimate the effects of London smoke, at all events, we can, and must view with horror delicate children and invalids, and indeed people of any sort, to the extent of two millions and a half and upwards, put in and obliged to breathe, not only the pestilent airs of bad drainage, and other matters to which we have often referred, but also the sooty atmosphere which the Hyde-park sheep illustrates.

The soot of the metropolitan chimneys is injurious in various ways.

It injures to a certain extent the health of every one. It tinges with its duskiness the palace and the hovel: it coats and spoils the works of great painters and sculptors: it disfigures the works of our architects; and it causes a large unnecessary expenditure in washing. Even the London sparrows show its effects; and then the softer sex, how they suffer from the effects of smoke. This should not be. In the olden time, the other "*dark* ages," it was part of chivalry to prevent the discomfort of women. We lords of the creation in this enlightened A.D. 1853, have now at our fingers' ends the means of putting an end to *smoke*, not only that smoke said to have been introduced by Sir Walter Raleigh (an introduction generally by the ladies abominated, and with good reason), but also that of sea-coal, and yet we let them suffer.

Have we no chivalry in this practical age? Cannot the knights of the present time manage to relieve the ladies of Britain from an evil greater than were the dragons and enchantments of the times past, and not half so annoying?

Let us for one moment consider a few of the numerous annoyances to all classes arising from the effects of "sea-coal" smoke.

We will refer to the Hyde-park sheep for the serious consequences likely to arise to the fair



A. *An inhabitant of Hyde-park.* B. *A stranger clean from the country.*

Yokel (*in alarm*).—"*Thou beest wondrous grim, sure!*"
Londoner.—"*To this complexion we must come at last.*"

countenances of the ladies themselves, *things well worthy of attention*. Moreover, even amongst the ladies of the highest schooling, the effects of London smoke cannot fail to be most trying to the temper, to say the least of it. Look lower, and we find the evil increased to an immense extent. The wife of the careful and persevering tradesman finds the clothes and goods of her family blacked and disfigured with soot. There are some startling statistics on record touching the effect of London smoke: we have ourselves contributed some calculations of touching import to all who pay washing-bills, and which show that the damage done to clothes and furniture by our smoke is immense,—enough to astonish any one who has not thought seriously on the subject, and also enough, considering how particularly this evil presses on the female portion of the community, from the highest to the lowest, to stir up amongst us the latent spirit of chivalry already alluded to. Down with the Smoke! That is, let us never allow it to go up.

Smoke, as we have often shown, can be avoided, and the appearance and atmosphere of London may be completely altered. Ascend the principal tower of the Crystal Palace, at Sydenham, in the middle of the day, and all London lies shrouded in a dense haze, although at four in the morning from the same spot you may see every church in the metropolis; the City churches ranging in long rows, St. Paul's, Primrose-hill, Highgate and Hampstead, the Queen's Palace, Westminster Abbey; in fact, all the materials which form this great abode of humanity are distinctly in view, as distinct almost as a scene in Italy or on the Rhine. London "*gets up*;" and then the gas-works, the brewers, the bakers, and various other manufacturers, as well as the good housewife, soon, by their united exertions, envelop London in a cloud which can be seen hanging over it for miles off, like a sable pall or a sad thought.

If any of our country readers not living in manufacturing towns, such as Manchester, Birmingham, Leeds, Newcastle-on-Tyne, and some other places, think that our illustration of the Hyde-park sheep is too highly coloured, let them, if they happen to visit London, remember the condition of clean shirts and gloves after a day's use in the country, and compare them with those used at their metropolitan visit: let them also look at their hands and face: wash as often as they choose, the water will be of such a distinct blackness that no mistake can possibly be made respecting the extent and properties of London smoke.

If, however, London is so grim, what is the condition of Manchester, Leeds, and the banks of "Coally Tyne?" The accompanying sketch of Manchester when they are getting the steam up will be recognised by all strangers who have visited that seat of industry. As to Newcastle-on-Tyne, it is infinitely worse: we remember meeting with a Londoner in the latter town who was almost speechless with astonishment at the numerous and immense volumes of smoke pouring out from all quarters—an effect only to be understood by actual observation.

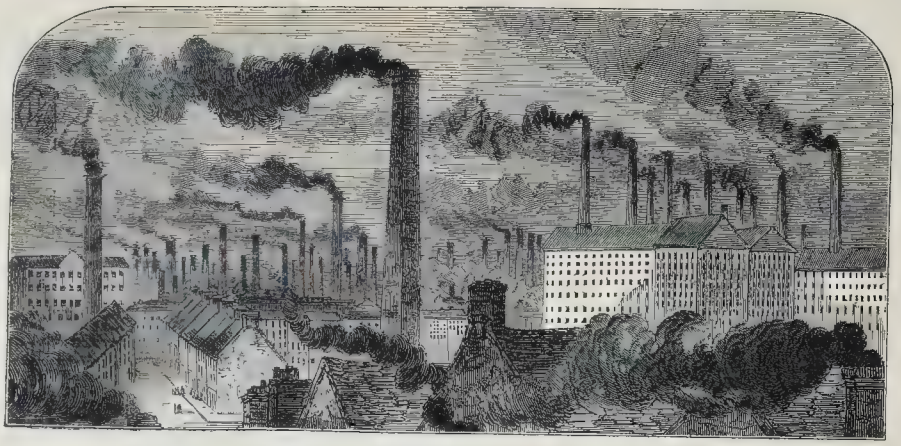
Hoping that this nuisance and *great waste* will be wisely and firmly dealt with, not only in London but elsewhere, and that the present condition of affairs will be soon looked upon as one of the curiosities of the past, it may not be uninteresting to glance at a few of the circumstances connected with the introduction and present extent of the trade in "*sea-coal*," as it was called in the olden time, from the circumstance of its being borne over the seas in ships.

On the gradual and necessary destruction of the forests surrounding ancient London, the necessity of fuel for the increasing population must have become strikingly evident. It is, however, shown in the old histories that the introduction of sea-coal, although absolutely needed, was not effected without much opposition.

In 1306 (reign of Edward I.) the brewers and dyers of London, and others whose professions require the use of great quantities of sea-coal, burning great quantities of that article, the air was so infected by the smoke arising therefrom, that the health of the inhabitants was thought to be in danger; whereupon, at the request of the nobility and gentry, the king issued a proclamation, strictly forbidding the use of sea-coal. But little regard being paid to this proclamation, a commission of oyer and terminer was appointed to punish the delinquents, who were fined for the first offence, and had their furnaces and kilns destroyed for the second.

From this time until the reign of Queen Elizabeth we find sea-coal gradually becoming recognised as one of the comforts and necessaries of life, and frequently mentioned amongst the accounts of pestilence, warfare, &c.

In the year 1544, Alleyn, the lord mayor of London and privy councillor to the king, when he died, gave a rich collar of gold to be worn by his successors, and 500 marks to be stock for *sea-coal*, and the rents of his lands he distributed to the poor of each ward for ever.



MANCHESTER, GETTING UP THE STEAM.

In 1590, the owners of the coal-works at Newcastle entered into a combination to enhance the price of that commodity in London from 4s. to 9s. the chaldron. And the Lord High Admiral of England, in the year following, claimed a right to the coal-metage in the port of London; but the mayor and citizens showing their prior right to the same, he receded from his pretensions. To prevent all controversies in that respect for the future, the citizens applied to the queen, who confirmed their rights.

In the third year of the reign of James I. this right was further confirmed as follows:—"And notwithstanding they, the mayor and commonalty and citizens, of late times thereof, have been disquieted, and in some measures aforesaid unjustly hindered, and especially in the said office of measuring coals—supposing that office to the mayor and commonalty and citizens anciently not to appertain and belong, whereas in truth it doth manifestly and plainly appear that the same offices and all other premises to them of old time appertaining, and do now of right appertain, and that they lawfully received and enjoyed, and ought to have, take, and enjoy the wages and rewards, fees and perquisites thereof—we therefore to take away all controversies, and remove all doubt in this behalf, and to the intent that the said mayor and commonalty and citizens may securely, freely, and quietly use, have, exercise, and enjoy, the offices aforesaid, and the fees, wages, rewards, and profits of, and measuring belonging," &c.

In 1614, the citizens were greatly distressed by "monopolizers, regrators, and forestallers in coals." The king, in another charter, after confirming the privileges already mentioned, says as follows:—"And further we do hereby, for us, our heirs, and successors, give, grant, and confirm to the said mayor and commonalty, and citizens of the said city, and their successors, that they for ever have and enjoy the office of weighing all coals called stone-coals, pit-coals, earth-coals, and all other coals, weighable, of what kind or sort soever, at the port of the said city of London, coming or brought upon the said water of Thames, in any ship, boat, barge, &c."

At this time the sea-coal from Newcastle and the northern counties had become indispensable in London, and supplied the city with firing, both for the dressing of food and for the operation of divers trades and manufactures. About 1590, as we have already observed, the price of sea-coal, by the arrangement of the parties in the north, advanced higher than it had been previously known; and besides (it is reported) the coals were not so good as formerly, in consequence of the merchants sending the best coals to foreign parts.

The increase in the price of coals from 4s. to 9s. the chaldron was caused by "a leasing of mines," and is explained by Strype, in his edition of "Stowe:"—

"The leases were called the grand lease, which grand lease was assigned to Mr. Sutton, and then the price came to 6s. the chaldron, and so continued during the time that Sutton enjoyed the lease. Then it was assigned over to the town of Newcastle, and then the price began to increase to an excessive rate,—first to 7s. then to 8s. and was now grown to 9s. Neither could be had, unless the buyer would be content to take of both sorts, viz. good and bad together.

Of this the Lord Maior made complaint to the Lord Treasurer Burley against the town of Newcastle, setting forth the causes of these abuses, and then the remedies for their reformation. The chief causes were certain inhabitants of Newcastle—called Frechosts—to whom the grand leases were first made over to the use of that town, being to the number of sixty persons, or thereabouts. Those of later times had compounded, and made over their whole right to a far less number, viz. some eighteen or twenty men, who having before coal-pits of their own, engrossed the whole commodity, and reduced the trade to a few men's hands, combining together to sell their sea-coal at their own prices, and so advanced the price, as we have said, to 9s. the chaldron, one with the other. The said few persons, being of great wealth, had, besides the grand lease, taken and engrossed all the coal-mines about the said town."

The remedies proposed to meet this evil were, that the lords of the Privy Council would take orders that all owners and farmers of coal-mines might open them and make such sale of their coals at such reasonable rates, not exceeding the price of 7s. the chaldron, to load the same at the most opportune places without restraint, and "that they be enjoined to have great store of coal digged beforehand, and ready to be laden, whereby the shipmasters might not be enforced to stay for their loading, as they had sometimes for five or six weeks together, by which the price of coals became increased."

The use of sea-coals is frequently alluded to by Shakspeare and contemporary authors, showing that sea-coal had become an important article of consumption, and it cannot be a matter of wonder that the town of Newcastle at an early period derived great benefit from the coal trade. Even in the time of Queen Elizabeth there were shipped into several places in the realm and beyond the seas by computation 500,000 or 600,000 chaldrons, the toll of which, at the rate of 4d. the chaldron, would amount to the sum of 10,000*l.* (say 60,000*l.* at the present day), which went to the chamber and corporation of that town, besides the revenue which grew to the inhabitants of that place by the sale of their coals.

Although in the later part of the reign of Queen Elizabeth the price of coals had been 9s. the chaldron, they were bought in the reign of Henry VIII. at 2s. 2d. the chaldron, "for one Thomas Barnaby, a merchant" (says Stowe), "exciting a great courtier in King Edward's time to promote shipping and increase the number of mariners, which would add so much to the strength of England, he showed how the sending of coals into France from Newcastle would set 6,000 or 7,000 mariners at work, whereas the French had the advantage. For in time of peace there would be from three to four score ships of Normans and Britons at once, as soon as the fishing was done, fetching coals, and as soon as they departed would come as many more. The advantage of that trade to the English would prove very considerable, for as he, the said Barnaby, had bought coal at 2s. 2d. the chaldron, so he sold them in France for 13 nobles, and this for the commodity of sea-coal."

In the year 1698 a tax of 5s. the chaldron was put by the Government on sea-coal: this gave such displeasure to the citizens that loud complaints were made and also pamphlets written against this tax, which was repealed the following year, and laid on again almost immediately after: one of the pamphlets alluded to shows that at this time 1,400 ships were occupied as colliers, as the author learns by the coast-books of the Custom-house in the port of Newcastle-on-Tyne.

It appears also from the amount of duty at 12d. a chaldron coast duty on coals at Newcastle, that there were then exported from that place 200,000 chaldrons of coals, Newcastle measure, and Newcastle had but two-thirds of the coal trade.

Without pursuing the inquiry further, let us add that the quantity of coal now yielded by our coal fields is called 32,000,000 tons annually, of which about 3,500,000 tons in the year are brought to London. It would not be difficult to estimate how much of this is wasted by our present unscientific mode of burning it, and is sent off, in the shape of very finely divided carbon, to contaminate the air, shorten the duration of daylight, and destroy property. That these evils may be avoided is certain, and it is much to be desired that manufacturers and others should not wait for legislative enactments, but should forthwith direct their attention to the subject, satisfied that although there may at first be practical difficulties in the way, these may all be overcome not only with immense advantage to the public, but pecuniary gain to themselves.

ON PHOTOGRAPHY AS A MEANS OR AN END.

PERFECTION AND IMPERFECTION OF SUN-PICTURES. NATURE AND ART CONTRASTED—THEIR REQUIREMENTS. THE CAMERA TO SCIENCE AND ART.

THE remarks contained in the following short paper have now been written some months—with a view to show the boundary-line between Nature and Art—to indicate an art-view of photography—taking as its text the burden of a prior desultory argument, mooted early in the Photographic Society, as to whether loyal photographers should maintain the absolute action of the sun's rays to produce the desired effect, inviolate, and so uphold the manipulative; or whether negatives or positives should be countenanced after they have been aided or touched by the artist; in other words, whether science and art should fraternise—the results or the means be paramount?

That the question is a wide one, and has many phases, I think the division of opinion on a former occasion will show; but until photography becomes a certainty, and Apollo condescends to paint all the minute hues and graduations of the original, the sun-picture will be far from even a perfect representation of nature. At present it can scarcely be said to supply the requirements of the naturalist or man of science—much less those of the artist: that their avocations may be greatly assisted by the perfection of the process, all, I think, will allow.

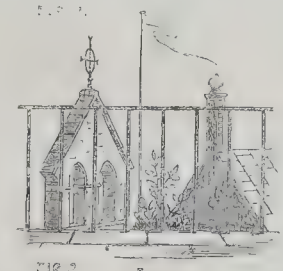
Nature and art differ widely, although they are often confounded, and, indeed, it is extremely difficult to define the boundary-line upon ground so debatable.

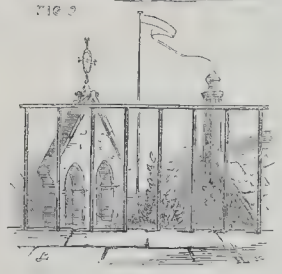
Nature is the handmaid of art, and art in its highest attribute a something beyond—a thing, as it were, distilled from nature—a something founded upon and bearing resemblance to it, being, to draw a familiar similitude, as ale to water: there is a great deal of water in ale, but something besides; so in fine art there is much nature, but a great deal more. Art seeks—at least, fine art (and it cannot be so called unless it refines)—to elevate the imagination, by lofty images derived from nature in its most agreeable form. Nature may be much conventionalized, and indeed is, in the noblest and highest art: the abstract is given without the minutiæ. In sun-pictures this is reversed; the particular is given without the general feature—breadth being sacrificed to detail.

In photography, the naturalist and man of science will seek for exact detail to argue from; for to them the smallest particular is of consequence; every feather, hair, or petal, must be rendered. The architect will require every cornice, boss, and moulding distinct; the engineer every link in his chain of evidence; whilst the artist will not descend to minutiæ, but desire a breadth of effect: he will be enraptured with what others might deem failures: *his* most perfect *pictures* may be out of focus, his distances may fade away, and his foregrounds look indistinct; his trees appear in masses, and his figures be obscured by positive shades. Photography ought to, and will, be rendered subservient to the requirements of the practitioner—to his individual wants: what will answer the purpose of one will not necessarily do so for another: one may delight in keeping his examples pure (and as chemical results they will have their value), another in assisting Nature, by knowing what she ought to be, and charming her to smile: both efforts will be worthy of praise if conscientiously done. The architect, for instance, requires botanical forms sculptured, as they could not, and do not, grow—in spiral lines, springing one out of the other, running round cornices and capitals, to the horror of the botanist—ignorant of the requirements of art—who would have plants sculptured after nature, in all its wild luxuriance, rather springing from the base than the top of a column; just as I have heard anatomists object to the sphynx, centaur, satyr, and mermaid, of the ancient artist, because they could not anatomically exist; forgetting that there is a great deal of true poetry in the physiologically false. Apollo, himself (the patron of photography), as represented by the Greeks, with his head in the centre of the sun, would be charred in the furnace were poetical license not allowed; and angels, with wings as well as arms affixed to their bladebones, cease to exist.

Photographic pictures, at present, are too literal to compete with works of art; containing both near and distant objects—of equal clearness—upon the same plane; backgrounds and foregrounds of equal intensity in the same picture,—things known to our painters not to be compatible with nature as viewed with the two eyes; not but that the peculiarity of the sun-picture (the cameras giving more than the eye can grasp) is a great advantage, at times, to the man of science and the artist, as they there find the material in its pure state,—to reject or select what suits their several purposes.

In the annexed diagrams, fig. 1 is an attempt to indicate objects as we often find them photographically rendered,—devoid of atmosphere, near and distant objects being of equal intensity. Fig. 2 is presumed to be as the spectator *would* see it when looking at the near object,—the background then being hazy, or out of focus. In fig. 3, the spectator's eye is supposed to have alighted on the background, rendering the near object subordinate.







Artists are well aware that forward objects destroy those in the rear: in sketching they make lines fall short of those prominent: this may be observed in Nature by suspending a ball, which when viewed by itself annihilates the background.

In some paintings by the great masters the principal figures appear to have glory round the heads from an exaggeration of this effect.

The naked truth—even did the lens imprint it upon the paper—would require clothing at the hands of the artist to become a work of art: to make a fine picture, he must elevate this and depress that; bring this forward and take that backward; lighten here and darken there; carrying out the proposition of one of our greatest painters,—to paint a picture—*honestly* if you can—but paint a picture. Good works of art are creations in which the artist is more or less apparent: an experienced connoisseur will detect the hand at once, even if it be in fifty different representations of the same object; whilst the like number of photographs, from the same point of view, would vary little. Nature must be taken as we find her, "unadorned;" and, as the poet would have it, "adorned the most:" not that we are obliged to believe the poet, though we may admire him, any more than we are to acknowledge, because Shakspeare tells us, that the toad has a jewel in its head, that it is a literal fact.

Turner is said to have lighted some of his marvellous creations with two suns, and to have contended for the use of three if it answered his purpose: however, as we are not all Turners—capable of turning Nature topsy-turvy,—we may as well be more literal, and remember the adage,—that though some may steal the steed, others may not even touch the latch of the stable-door.

Minute detail, as indicated before, to the smallest particular, is the attribute (and an invaluable one) in the sun-picture, though not so of the work of art, in which you cannot remove a particle without destroying the whole; a rule that holds good in the finest sun-pictures, though many photographs may, and often with advantage can, be divided and subdivided without detriment, and every part be beautiful—for they want unity—which every work of art ought to possess. A picture must have all the attributes of nature without its particularities, being nature in the abstract; and to show you how much art may exist without nature, I will draw your attention to the marvellous works of Flaxman and Retsch in outline, things that have no bodily likeness in nature, so arbitrary, and yet so satisfactory, being no more pictures than maps or plans are pictures; and yet, with all, works of art in the most æsthetic sense,—a few lines indicating a lofty idea may convey the noblest sentiment and highest art, whilst a pleasing effect may be pictorial without elevating—it being pictorial effect that constitutes the picture, refinement the work of art.

An outline drawing, as I said before, is no more like nature than a bit of bent wire might be made, but it conveys an idea to the educated eye, and answers the purpose intended. Photography cannot produce the ideal, although it may aid it. It could not have invented the anthemion, or Grecian honeysuckle, a form that has endured three thousand years; or the Mediæval *fleur-de-lis;* because the abstract is beyond the mechanical: we might as well expect the calculating-machine to write poetry as the camera to supersede the arts, even if we get so far as to realise the hoax advertisement of Sir George Beaumont half a century ago, and *are* enabled to bake likenesses in a looking-glass.

Art cannot rival Nature, and should not attempt to compete with her: its province is quite distinct. The marvellous detail of the microscopic photographs defy the imitation of man, and I hope will, ere long, supersede his endeavours to mimic her wondrous minutiæ, for he can never approach it.

In the lowest forms of art we find direct imitation the object, a painful elaboration of parts most sought after, and the first to be appreciated by the thoughtless observer; as the representation of a satin or velvet robe, the glitter of armour, the hair upon animals, &c.; whilst lofty sentiments, requiring mind to appreciate, attract the least. The true artist will

represent fur as a broad mass, giving all its attributes without any of the particulars: the mean artist will labour in vain to depict every hair: the former will be a Landseer, the latter a painter worthy of copying the lower walks of still life, as three mackerel on a "willow" plate, a section of bacon, or a summer cabbage, to meet the demand of pawnbrokers in vulgar localities.

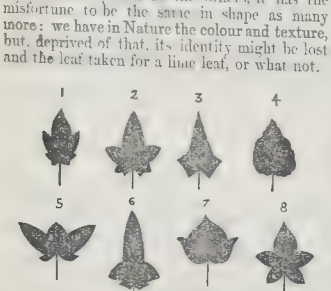
Genius will be assisted, rather than superseded, by photography: he will go to the process as to nature—to choose and render in unity his own: he will look to it as the alpha rather than the omega of his art.

Action in sun-pictures is almost invariably imperfect, the camera delineating figures in repose with greater success. Action is the essence of fine art; the richest works being replete with life, which is not observable in the works of the process: for instance, suppose you take a sun-picture of a man about to strike a blow—cutting with a sword or wielding a club—it is a hundred to one if he appears to be in anything but an attitude, whilst in the hands of a skilful limner nature would have been assisted by art, and slightly exaggerated (if we may so call it), the spring of muscle being carried to the utmost extent, so as to look as if it would strike home: this is not to be done with the camera, but easily with the pencil (the model being unable to put himself in the position except under the impulse of a moment): this the artist knows, and attempts to express.

Photographic and daguerreotype portraits are often wanting in vivacity, individuality, and beauty, bearing but little resemblance to the sitter, who recoils from the libel upon his personal appearance, none the more satisfied on being informed of the infallibility of Nature, who *never* flatters; but, I would ask, does Nature do justice? Is beauty of complexion or expression rendered in the present state of the process? I think not; much doubting if ever sitters can give that power of individuality they possess—that trait of feature the true artist aims to seize, rendering portraits of the most ordinary pleasing and life like, appearing to live and glow again in art, because the painter has sought to condense the attributes of his sitter—a thing the mirror could not even accomplish.

The same, again, holds good in the representation of specimens designed to show the type of a class, whether botanical, zoological, or other: the camera, being unable to give the type of a class, can but portray the individual; hence the skill of the operator in selecting the best he can command. The native of one province may resemble that of another; he must pick the best, for he is unable like the artist to give the attributes of a whole tribe; he must remember that the arm or hand of a powerful woman may look more masculine than the same members in an effeminate man; that elms may resemble oaks, and dahlias look like roses or cabbages under untoward circumstances.

In allusion to the forms of Nature, and the necessity of artistic treatment, I will produce one example, the ivy, to show how varied and infinitely beautiful are her forms, even upon the same plant, affording the designer the choice of selection—enabling him, without copying any, to portray the attributes of all, unmistakeable to the casual observer. Perhaps Nos 3 and 8 are the most agreeable in form; No. 4 would have to be avoided, for although common, and as much an ivy leaf as the others, it has the misfortune to be the same in shape as many more: we have in Nature the colour and texture, but, deprived of that, its identity might be lost and the leaf taken for a lime leaf, or what not.



That sun-pictures may be the means of elevating taste by rendering us more familiar with Nature's infinite beauty, and educate the eye by presenting her transient forms and effects in all their varieties, imprinted by her own hand, without fear or favour, causing true art to be better appreciated and more widely understood, exploding its fallacies and consolidating its facts, showing, as it has, the points in which art and science differ; that though works of art may, and often do stand higher than works of circumstance in intention, the former can scarcely hope to compete with the latter in one essential particular, true roundness, linear perspective appearing comparatively flat as contrasted with binocular perspective, as exemplified in the stereoscope. JOHN LEIGHTON.

THE CARNARVONSHIRE SLATE QUARRIES.

THE demand for slate of certain qualities, which has for many years been gradually increasing, has at the present time become so great that the existing quarries are wholly unable to furnish the supply required. This may be attributed not only to the vast increase in building in the metropolis, its suburbs, and throughout the United Kingdom, but likewise to the appropriation of slate of late years for ornamental and sanitary purposes, together with the continued and increasing demand for exportation, more particularly to America and our own colonies. Some contractors, we hear, are deterred from extending their operations in consequence of inability to obtain the execution of their orders within a reasonable period. Nor has the maximum of demand been yet reached. Unless we are mistaken, slate will be used for many other purposes than those to which it is now applied. Many of our readers being interested in obtaining a good supply of this material, we may mention that the "Carnarvonshire Slate Company" (whose advertisement recently appeared in our columns) are vigorously working their grant of land containing extensive strata of green, purple, and blue slate rock; and such is the favourable position of the vein, that although the works have not been in operation beyond two months, shipments of slate, we are told, will in a few weeks be regularly made,—a circumstance very uncommon in the annals of slate quarrying. We can believe the statement, because we had occasion some time ago, professionally, to examine the quarries, and saw that they were very advantageously placed for working. Of the green slate, so much sought after by architects for buildings in the Mediæval style, and with which the market is barely supplied, being only occasionally met with in patches in other quarries, there is a continuous vein, computed at 100 yards in width, and extending nearly half a mile in length. The quality of the slate is first rate. There are also extensive veins of purple and blue slate of excellent quality, and the mode of operation pursued seems to show that experienced hands have the management of the quarries.

SCRATCHES ON THE ROAD: VIENNA.*

MY DEAR BUILDER,—At midnight I left Venice by one of the Austrian Lloyd's steamboats for Trieste. We had a very rough passage, and experienced both the burra—a strong north wind, that is very destructive in those parts—and a sirocco, which rendered our passage anything but pleasant; and the vessel creaked so fearfully, that doubts were expressed by some with regard to our safety. I afterwards discovered, when on the Danube, the advantage of practical experience, for I was speaking to a distinguished shipbuilder there, and he told me that those fears were exceedingly groundless, as the Austrian Lloyd's vessels are built without a framework of timbers, as most of our vessels are, but are composed of planks, oblique and horizontal, fastened together, and a few timbers inserted. This gives lightness and elasticity, and it was the last quality that had been the cause of our apprehensions. At Trieste the first thing that attracted my attention was the great variety of picturesque costumes. This being the only port of South Germany, it is a busy, bustling place, and people of all nations come to trade—Turks, Greeks, Armenians, all the varieties of the people along the Adriatic; but the most remarkable are the *Slavs*, especially the women, who wear a petticoat of some dark colour bound with bright red or orange, the same or a green bodice with white sleeves, and a white cap with a white pendant at the back, containing some yards. The men wear dark trousers, very broad to the knee, jackets, and a cap made of fur elevated at the back, presenting a very strange appearance. I went to the Greek church, where I saw some hundreds of these, the women arranged on the north side and the men on the south. I also saw at the village of Sessina a *fête*, where every one was clothed in this national Slavonic garb, and the effect was very peculiar. Nowhere have I met with national costume so exactly preserved. Everywhere else, even in Switzerland, the influence of cities, aided by the cheapness of Manchester, have tended to destroy all these characteristics. The duomo or cathedral of Trieste possesses interest, as being built on what was formerly the Temple of Jupiter. Under the tower an excavation has been made, and the plinths and portions of some Corinthian columns are exposed and left for view, protected by a railing.

From Trieste I went by the ordinary road to Laibach, where the railway commences. The carriages are exceedingly inconvenient, and hearing of this, I took a first-class ticket, although people say that second class is always so good on the continent; but the only way to get at this compartment was through the second-class carriage, where the smoking had produced such a fog that it was difficult to find the way, for the Austrians, who have no hesitation in polluting every place they enter by their everlasting smoking, have the greatest possible antipathy to the slightest breath of fresh air; and when I arrived at the place allotted to me, I found a den, containing seats for eight, so "cabined, cribbed, confined," that I thought it would be worth Mr. Macgregor's while to take a trip here, for him to see how much more space might be taken from the crowded carriages on his very expensive and uncomfortable road. I noticed on the way that the churches by the road possess none of the Lombardic style, but are in the character of most of the Swiss churches, that is, the tower is surmounted by a top in the form of what is in England called a Turk's cap. Is this form only peculiar to the churches of mountainous districts, or is it a portion of an oriental type that has been carried westward into Switzerland with the Austrian rule? The railway is only made as far as Murzzuschlag, where the Semmering Pass commences: it is still in progress, and, when complete, of which there are some grave doubts, it will be a great monument of engineering skill. As the height of the Pass is about 3,300 feet above the level of the sea, and Mürzzuschlag about 2,200, while Gloggnitz, the place on the other side of the Pass which it is to join, is about 1,380, some idea may be formed of the work in the shape of inclines and tunnels necessary for this junction. This was the next day but one before the Nativity of the Virgin Mary, and we were met by hundreds of pilgrims, who were proceeding to some shrine to offer up their prayers on that day. Their chanting had a very solemn effect, but their dirt and poverty inclined one to pity, and inquire whether their duty might not have been as well done by the performances at home of such acts as would raise them in the scale of social beings.

I will not delay any more on the road, but arrive at Vienna at once. My first visit was paid to the Church of the Augustines, to see Canova's monument of the Archduchess Christina. It is exquisitely beautiful: it has been frequently described, but no description can give the impression that it produces. There is a pyramid, in the centre of which is a door representing a vault, into which are seen entering a figure representing Virtue, attended by children; then follow Benevolence, supporting an old man, and by his side a child. The figure of the old man is fine: in him you not only see the tottering limbs, but also the palsied mind, unconscious of the loss he has sustained, but still clutching the empty purse with convulsive force. How strange it is that when every other

* See pp. 570 and 592, *ante*.

faculty of the mind fails, there is still always some portion of intelligence left to invoke you to *give;* and I have often, when looking at an old and worn-out being, who has mumbled "charity," the only word perhaps left, marvelled whether this is only a remnant of that instinct which makes us cling to existence with such dread tenacity. Beside the old man is a child kneeling, and I never saw anything more exquisite than the force of this contrast. In its sweet face there is that grief, the "so sorry" of the child, which happily is so evanescent in infancy, and which is so easily changed to a smile upon the slightest provocation. Beyond this, the countenance of Benevolence indicates that sorrow which tears do not show, but which speaks a void near the heart not easily supplied. Altogether, this had more influence over me than any monument I have ever contemplated; and I can well understand, and fully endorse the indignation expressed by the writer in Murray for the vile taste exhibited at Venice in raising what is at best but a burlesque imitation of this beautiful composition, as the monument of the sculptor. Surely the worth of genius was never so tastelessly requited.

My next visit was to the cathedral of St. Stephen's, where my first feeling was of the wonderful fidelity with which Mr. Roberts has rendered this magnificent structure in those two pictures exhibited by him at the Academy in the present and past year. The exterior is as imposing as the interior, but marred very much by the coloured tiles of the roof, of which I spoke in dislike at Basle. Here the effect is much worse, as on the roof on the south side is a gigantic representation of the Austrian eagle, that, whatever may be its influence in other respects, does not, in my humble opinion, conduce to the harmony or elevation of Gothic architecture. From the tower, which I ascended, a fine but not uninterrupted view of the city is obtained, as there is no opening except from the four quarters, from which the fireman watches the city, without intervening pinnacles and tracery. On the south is a miserable hovel, built up against the side of the church. I have always found that in Roman Catholic countries, their best buildings are always desecrated with some wretched additions of this sort. And it would be well for "Young Oxford" to consider whether it is necessary, in consequence of an appreciation of Gothic beauty, that the Protestant church should approximate to Rome in the performance of its ritual, and the garb of the clergy; seeing that where Protestanism has not had the slightest influence, destructions, alterations, degradations, and even whitewashings have been as prevalent as where an inexperienced and tasteless churchwarden has inspired the pious horror of an ecclesiologist.

At the Museum of Antiquities I was most charmed with the cameos and intaglios: among the former is that famous one, the Apotheosis of Augustus. Its delicacy is exquisite. Several attempts have been made to copy it by the photographic and galvanoplastic process, but those I have seen fail to give a shadow of its beauty: the last process is done with copper, and then carefully painted to imitate the original—an imitation indeed! There is also another collection of antiquities at the Ambras collection, where there is a very fine display of armour, among which is that of Alexander Farnese, Duke of Parma, which, from the elegance of the workmanship of the gilt *bassi-relievi*, fully deserves the encomiums that have been passed upon it. Here also are some curiosities in the way of gems of precious stones, among which is a very curious conglomerate, formed of silver, very large emeralds and diamonds, which is labelled as coming from Peru; but my companion told me, from his knowledge acquired by a long residence in the country, that no emeralds have been found in Peru: they are obtained in New Grenada, but never in the former place.

I went to Schönbrun, which is the Versailles of Vienna, and a modest imitation of it. It is the favourite residence of the present emperor. The interior is not shown, but the public are allowed freely to walk about the grounds, which consist of radiating walks with the trees and hedges clipped into the most rigid angularity: at the end of the centre walk is a fountain, allegorical of Neptune, of course. What would the designers of fountains have done without that old gentleman? We shall see, perhaps, at the New Crystal Palace. On the hill beyond is the Glorietta, a triumphal arch, the effect of which is very good as seen from the palace, and upon which a very fine view is obtained of Vienna and the surrounding country. From thence we went to Laxenburg, which was the favourite place of Maria Theresa, and contains "a great sham" in the shape of a Gothic castle, which she erected and made her hobby in furnishing, and we may therefore infer from it what was her taste. What, then, shall we say of that which dictated a copy of "the Chamber of Torture, said to be a *fac simile* of the Justice Chamber actually existing in an old castle somewhere in the Italian Tyrol? In the centre is a circular table, inscribed along its edge with the words '*Discite justitiam moniti, et non temnare divos,*' around which the judges or inquisitors sat. Above the table is a pulley fastened in the foof, to which the prisoner was attached by the arms or legs, and racked, to extort confession."* Below, in the dungeon, is an effigy of a prisoner chained to the wall; and when you enter, the guide slyly remains behind, and by means of some mechanism causes the prisoner to lift up his hands and rattle his chains. Alas! that a woman should have made a model of this wretched mockery on the name of justice! I do not know what estimate Mr. Newman gives in his book† of the character of Maria Theresa; but I think that it shows a taste which is exhibited by her descendant, and which I heard illustrated in connection with the deposition of Haynau. Twenty-six political prisoners were tried after the revolution, and there not being so much suspicion against these as the numerous others that he had sent to their account, he acquitted them, when in less than twenty-four hours he ceased to be governor of Hungary. He has been heard to say "that he hanged and shot thousands without a remark; but because he allowed twenty-six to escape he was superseded." It will be recollected the reception he met with in England; but here he was so shunned, that when he was seen coming on one side of the way, everybody crossed to the other rather than meet him. In cutting throats he only did his duty: for being just he was removed;—and in this do we not see that spirit which copied the Torture Chamber?

The greatest portion of my time has been devoted to the Belvedere Gallery, containing the imperial collection of pictures. There are some fine samples of every school, preserved in the best possible manner. I was curious to observe the way in which the pictures were regarded by the visitors, to see whether "high art" was more appreciated here than with us; and I must acknowledge that those pictures which attracted most attention from the many, were of that class which would be most interesting to our public. The English visitors, of course, go directly to those that are indicated by "Murray." Here and there you find a student rapt in the contemplation of some work; but the majority will be found looking with most intense wonder at the "Jew looking out of Window" (No. 9, in the eighth room), by Hoogstraeten; and on the old man and the old woman (Nos. 103 and 104, in the twelfth room), by Denner; while the "Ecce Homo" of Titian, "Le Repos en Egypte," "La Madone à la Verdure" of Raffaelle, "The Ignatius," and "The Francis Xavier," are but slightly regarded. Whether this arises from the numberless illustrations of these subjects that their places of worship contain, causing them to be indifferent to the productions of greater hands, I will not take upon me to say; but as appreciation of art is as much a matter of education as anything else, I hope to see the time when our galleries shall not only be thrown open to the public, but find also that public instructed in the principles which the exhibition alone of pictures will fail to give.

As Pesth has occupied an important part in the history of our time, I thought I would e'en visit it; of this, however, hereafter.

F. S. A.

* "Murray's Handbook."

† "The Crimes of the House of Hapsburg against its own Liege Subjects." By F. W. Newman.

THE CELLARS IN THE CITY.

While the cholera is so fearfully raging near us, and threatens to attack the great city, will you allow me to draw your attention to the state of the cellars of our principal thoroughfares and important streets by the detail of the following facts? It being near the quarter-day, I, with many others, am employed in inspecting the gas-meters in the city and suburbs of London, and consequently am obliged (consumers placing that important machine in the worst part of their premises) to traverse upwards of 1,500 cellars; and I assure you I find very few (not 150) but what are turned into gigantic dust-holes, which I am obliged to go over and inhale their fearful stench. The accumulation of dust and dirt mingled with the refuse of the scullery, forms a complete mass of fetid matter: in many cases, a drain runs under the heap, adding to the danger, with a water-closet in the corner, in a wretched state of repair. These cellars, it must be told, are not available for commercial purposes, for two reasons—first, because they are dark; or, secondly, because they are too damp: the latter cause is most usual; and I will leave you to judge what the stench must be from the rapid decomposition of vegetable matter accumulating quarter after quarter in this diabolical state. Surely, sir, some means should be adopted to compel people to keep their underground apartments free from pollution in this heated city, where it appears death and destruction are invited instead of being repelled. It may be urged there are the dust-carts to remedy it, but I would ask—first, are they called in to remove the nuisance *in time;* and secondly, will the men take it away when asked? I have seen it frequently refused, and then it got too great a bulk even for four or five carts to load away the mass. It is seldom any but we, and others in like capacity, enter these underground dust-holes; those who do, will say I have not exaggerated. I trust this hint set forth by you may lead to an investigation of the cellars of the City. An Inspector of Gas.

SURVEYORS, BOARDS OF HEALTH, AND COMMITTEES.

The professional offices of the country seem to be passing piecemeal into the hands of committees. Building committees are becoming the practical architects; street committees are becoming the practical surveyors, and so on. Where it will all end it is not easy to see. A specimen of its working has just occurred at Windsor, where the surveyor to the Board of Health has been dismissed, without "casting any imputation on either his professional or his personal character," and merely, it would appear, because he was not a passive enough tool wherewith "the street committee" could "make out" the "surveyor's reports" to the board. Being rather a stiff steel pen, he was cast aside, and the street committee are now on the look out for a more pliable quill. Moreover, the surveyor had the boldness—the indiscreet and self-sacrificing boldness, we must say—to attempt to "report" the very chairman of the street committee himself, in one of these their own reports, as having erected a gate across a street said to be watered, lighted, and sewered at the public expense, but nevertheless still claimed as private property; and had also refused to sanction the conversion of 9*l.* into 12*l.* as amount of rent payable by the board to another of his masters of the street committee, who, by the way, are alleged to be *inter se* at sixes and sevens, or at least at twos and threes. Mr. Rawlinson was probably right in hinting that it appeared to be "a foreman" to some competent engineer that they were in want of rather than a competent surveyor. As yet, however, the local board has no such engineer. As regards competent surveyors, we observe the occurrence of another little circumstance, which seems to show that the nature and the status of their profession are not rightly understood. At Dorchester the local board lately advertised for "a surveyor, inspector of nuisances, and collector of rates," salary in all 100*l.* per annum. No competent surveyor applied,—in fact, no one even under pretence of being able to act as a surveyor at all, unless, indeed, it was the person actually appointed, and who, according

to the very member of the board proposing him, "might possibly be found to fill the office of surveyor as well as any other person,"—inasmuch as he had been all his lifetime a linen-draper, and was doubtless well accustomed to *measurement!* Moreover, in the bye-laws of the board, who, according to the *Dorchester Guardian*—and we do not doubt it—have "some confusion of ideas as to the duties of the surveyor,"—it is required, that that officer, if called on to do so, shall occasionally undertake the more technical duties of engineer; so that, by parity of reasoning, the linendraper, accustomed to the "ell-wand," should at least have also been a boniface acquainted with the beer-*engine* and accustomed to *drawing!* Really, little justice is being done to the Health Act if this be the extent of the general knowledge of local boards as to the functions and duties of their most necessary and important officers. Why do not the General Board write them a circular lecture on the subject, and send it all round, so that no one local board could take anything like special offence at such an endeavour to enlighten them.

DUTIES OF DISTRICT SURVEYORS, AND POWERS OF THE ACT.

You and your readers have no doubt seen the correspondence which has lately appeared in the *Times*, between a barrister and a district surveyor, relative, amongst other things, to the duties of the district surveyor under the Metropolitan Buildings Act, in cases of underpinning party-walls, and I think it will be admitted that, whilst the remarks of "Barrister" are calculated to do good, "our learned friend," or perhaps we should more properly say, "the learned gentleman" has not taken much by his motion. This "turn-up" between a barrister and a district surveyor has led me to look into the statute, and, having so done, I incline to the opinion,—if, being "unlearned, I may be allowed to have an opinion,—that it is doubtful whether the shoring-up and underpinning referred to in section 28 are not matters which, so far as that section is concerned, concern the building owner and adjoining owner only. This section, it will be observed, makes it "lawful" for the building owner to excavate against a party-wall, but upon the "condition" that he shores up and underpins the party-wall; and so, in like manner, section 26 makes it "lawful" for the building owner to rebuild a sound party-wall, but upon "condition" *again* that he reinstates the adjoining owner's house, and pays all fees, compensation, &c. Now it appears to me, Sir, that if section 28 makes the shoring-up, &c. a matter which the district surveyor can require, under section 14, to be done in the particular manner described in that section, so in like manner the district surveyor is bound, in case the building owner fail, under section 26, to reinstate the adjoining owner's house, or to pay the fees incurred or the compensation awarded, to proceed against him under the aforesaid section 14. This latter I think can hardly be the case, and if I am right, it may at first sight seem that many dangerous operations may be performed to the injury of the public; but this is not exactly so, as the adjoining owner has an appeal, under section 82, to the official referees, and moreover the public safety may in a brief space of time (say a day or two), be secured under section 40; besides which, the underpinning being an *enlargement* or *alteration*, is subject to parts 2 or 3 of schedule C, and therefore clearly under the supervision of the district surveyor. I cannot, however, help doubting whether the shoring and underpinning referred to in section 28, is a "rule" or "direction" of the Act, or, indeed, anything more than a *condition* to be taken notice of only by the building owner. The barrister, I observed, referred the district surveyor to the schoolmaster; and I presume that, as it is not now vacation-time with schoolmasters, the district surveyor found that worthy gentleman at home, and was by him advised that, as he read the Act, party-walls must be "shored up" with brickwork, &c. I think, however, that it is not very material to the public whether barristers or surveyors have been to school at all, as they will doubtless find employment in proportion to their competence; but it seems to be very important that the Legislature should have been to school, and not entirely forgotten what they were there taught. This remark leads me to suggest that the afore-mentioned section 28 is not so decidedly clear as it should have been, for while it is evidently meant to refer only to the case of building an *external wall* against a *party-wall*, some parts of it lead to the supposition that if an excavation be made for *any* purpose, the necessity for shoring, &c. occurs. I think, and I believe I shall be borne out in the suggestion, that there should have been an express "rule" in the *schedules* of the Act regulating the shoring and underpinning of party-walls,—indeed, of all walls,—in cases in which excavations are made against the same. It seems to me to be an unwise, if not a bad plan, to have rules scheduled in a given part of an Act, and at the same time other important rules bearing on similar subject, omitted in the schedules, but lying interspersed in the various sections of the Act.

Having said thus much, Mr. Editor, allow me to ask when you think it is probable the Metropolitan Buildings Act (an Act which, after all, is undeservedly abused by parties who cannot, or do not take the trouble to understand it) is to be amended? Having asked this question, I will retire, with the assurance that I am your ancient friend and humble servant,

A Quiet Observer.

PROVINCIAL NEWS.

Grantham.—The site for the erection of the baths and washhouses is now opened out, and the contracts have been let to Mr. Young, of Lincoln, who will perform the whole of the work. The erection of the wash-houses will be deferred for a while, with the view of ascertaining the wants of the town in regard to them, and further information as to their paying. The principal portion of the front is of stone from Wilson's Ancaster quarries. Mr. Oliver, jun. of Sunderland, is the architect.

Middleton (Sudbury).—The interior of the church here has been removed, benches taking the place of pews: a carved pulpit has been erected, which, together with the stalls, benches, and general work, has been executed by Mr. Elliston, builder, under the direction of the architect, Mr. A. Salvin, jun. An east window of stained glass, designed and executed by Ward, has been presented by Mr. Skinner. Encaustic tiles were furnished by Mr. Minton.

Lakenham.—On Tuesday week the opening of the new Infant School, established in connexion with the district church of St. Mark, was celebrated by divine service in the church, and a social tea meeting. The school-room for 100 very young children has been erected close to the other schools, near the church; so that altogether about 300 young persons of both sexes are now receiving instruction here on the National system.

Bedford.—The parish church of St. Mary having long had insufficient accommodation, it was determined to add a new south aisle, throw the south transept into the church, remove the gallery, build a new vestry, a north entrance porch, provide 150 additional sittings, and accommodate children of the Sunday-school; also to light the church with gas. Under the superintendence of a committee the works have been carried out. Mr. Jackson, of Bedford, drew the plans and gave his services gratis. The contract was taken by Mr. Miller; and the alterations, which were commenced on Whit Monday, have been completed within the time and within the estimate.

Windsor.—The Commissioners of Public Works have given direction for the extension of the water mains to every part of the Castle, and the operations have recently been commenced under the superintendence of Mr. Turnbull, the resident clerk of the works. The original expense of carrying the pipes to Cranbourne was 10,000*l.*: the expense of their present extension is estimated at 4,000*l.* which sum has been voted by Parliament.——The directors of the Windsor Royal Society (of which Prince Albert is president) have opened a lodging-house for unmarried workmen and labourers. The model lodging-house formed a part of the original scheme of the society, but the difficulties experienced in procuring suitable premises, and adapting them to the purpose, have delayed until now the carrying out of the intention. The directors leased a large house in Church-street, the residence formerly of noble families attached to the Court, but latterly in the last stage of dilapidation. This house they thoroughly repaired, drained, and ventilated, provided with every convenience, and fitted up with sleeping accommodation for fifty single men. The lodgers are to be admitted at the rate of 2s. per week, in advance.

Oxford.—The baths and washhouses have now been opened twenty-six weeks, and during that time there have been 8,552 bathers—1,560 females. 2,133 women have washed linen and clothes, occupying 4,648 hours, averaging two hours and a quarter each. Thus, for 3d. the clothes of a whole family are washed, dried, and ironed.

Tiverton.—At Park Villa, Tiverton, a house lately undergoing extensive repairs, suddenly gave way, and the whole of the north wing of the building fell to the ground. Fortunately, the day was wet, and the workmen employed had been prevented from proceeding with their work in consequence. The accident is said to have been occasioned by the building having been undermined, and the parties having neglected to shore it up properly.

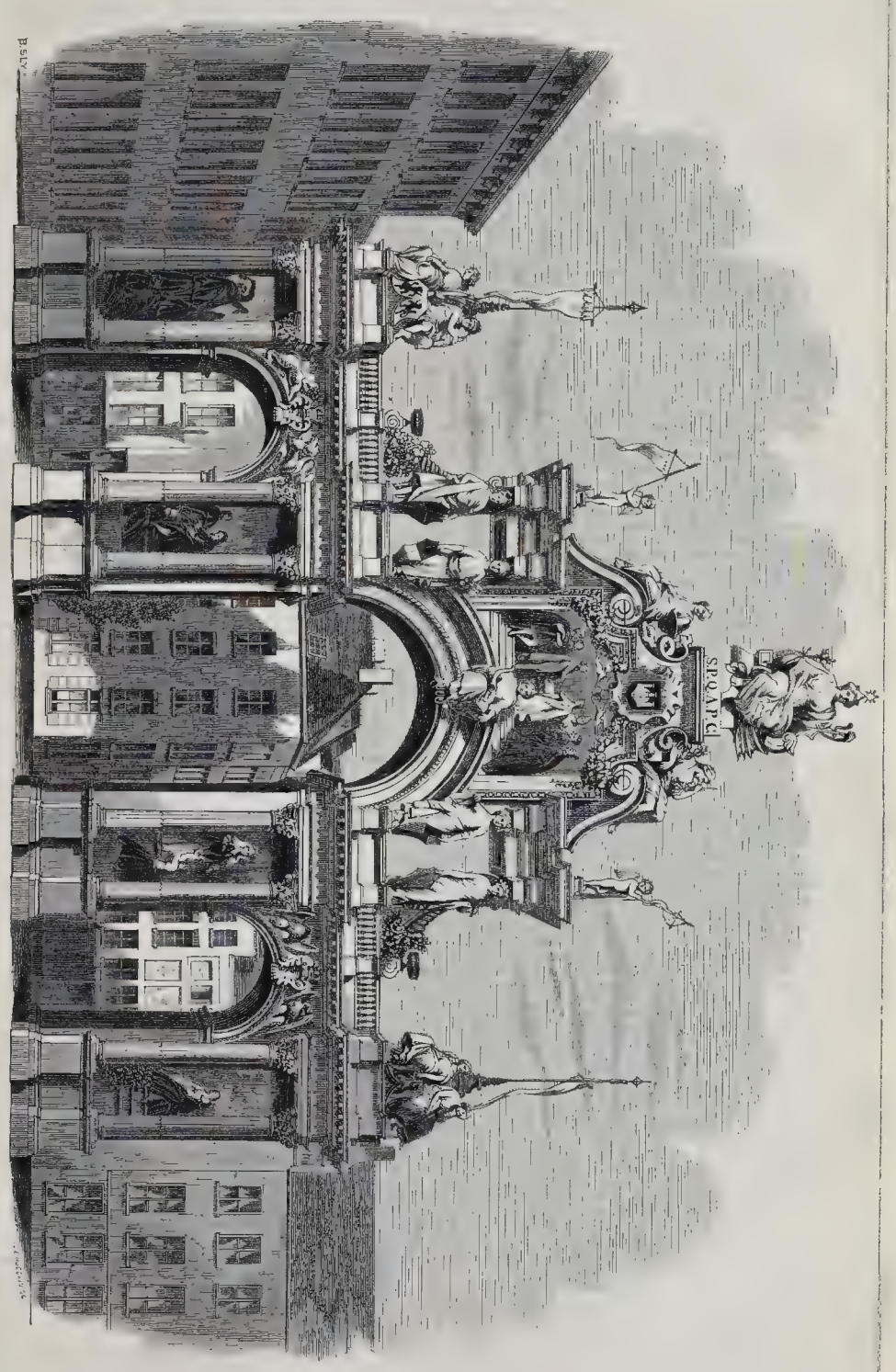
Pennar (Milford Haven).—The contractors for the construction of the South Wales branch railway to Pembroke, and the proposed docks at Pennar, are Messrs. Wythes and Treadwell, who have undertaken to have these important works finished by December, 1855. It is understood they will be proceeded with without delay; and the total cost is estimated at 500,000*l.* The whole capital will be advanced by the contractors, who have agreed to take shares of the company for the amount. The company will advance the sum of 35,000*l.* for the required land. The proposed extension is six miles.

TRIUMPHAL ARCH, ANTWERP.

Our engraving represents the triumphal arch erected on the Place de Meir, on the occasion of the recent visit of the King of the Belgians, and of the Duke and Duchess of Brabant. It occupied nearly the entire width of the Place de Meir, at the broadest portion of this spacious street, and was one of the largest erections of this temporary nature that has yet been executed. The dimensions were 105 feet in height, and about 85 in width. The construction was of timber, painted to imitate stone and marble, enriched with an immense amount of gilding, festoons of natural flowers, painted shields, and standards. The engraving renders unnecessary any description of the general mass, which consisted of three arches, the central one being the largest. On the balustrade, which surmounts the cornice, the statues represent the nine provinces of Belgium, of which Brabant, as the seat of government, occupies the centre. The intercolumniations were painted in imitation of Gobelin tapestry, portraying the various attributes of military glory, citizenship, religion, and private felicity. The other pictures in the upper compartments of the construction portray different episodes of the history of the Low Countries. All these pictures were painted, *con amore*, by some of the ablest artists of the Academy of Antwerp. A profusion of genii, cornucopias, garlands, and every object that could increase its magnificence, were employed in the work. Suitable inscriptions dedicated the monument to the happy occasion of the marriage of the Duke of Brabant with the Archduchess of Austria, which was only symbolized by two angels entwining rings formed of serpents. The ornamental part of statues, genii, &c. are of long standing in Antwerp, where the same have been always preserved to be adopted on great occasions; many of them dating from the designs and period of Rubens. The king, and his illustrious descendants, expressed to the architect, Mr. F. Beeckmans, their great gratification at the beauty of the arch, and expressed regret that it should only have been destined for a temporary purpose.

Our engraving is from a calotype, taken by request of the king, who received it from the hands of the architect: the latter has favoured us with the copy from which the engraving is made.

Preservation of Architectural Antiquities in Wales.—Having read in the 27th of August number of the *Builder*, the remarks of I. H. E. on the progressive decay of Castel Dinas Bran and other remnants of antiquity in North Wales, more through the thoughtless intrusion of "idle urchins" than from the "slow decaying hand of time," I beg to offer my best acknowledgments to the writer for the suggestions contained in his letter, which, as the owner of the above-named ruin, I will endeavour to carry out.—R. Myddelton Biddulph.



TRIUMPHAL ARCH, ANTWERP.—M. F. Beeckmans, Architect.

THE FALL OF A HOUSE IN THE STRAND.

THE inquiry into the cause of this calamity was resumed on the 26th ult. and brought a result which must have surprised most persons. The proceedings have necessarily excited very deep interest, and must have involved a large expenditure, through the number of persons implicated. On each occasion, Mr. Bodkin appeared for the Messrs. Lucas, the contractors for the works; Mr. Ballantine, for Mr. Abraham, the surveyor of the estate; Mr. Robinson, for Mr. Angell, the district surveyor; Mr. Few, for the Duke of Norfolk, the ground landlord of the estate; Mr. Ford, for the Messrs. Smith, for whom the improvements were being executed; and Mr. Hawkins, for the friends of the deceased persons.

The coroner and jury displayed the greatest desire to arrive at the facts of the case, but we could scarcely resist the impression when present, that two or three members of the latter exhibited an *animus* that ought not to have existed. Indeed, on one occasion the coroner evidently felt so too, and expressed himself strongly against it.

Mr. Angell was recalled to say that he considered the building was properly shored when he went on to the ground, on the 19th of August. Did not go into the adjoining house to see if it was shored inside. There were no excavations then at the foot of the party-wall.

Mr. H. R. Abraham, who acted as architect for Messrs. Smith, as well as surveyor to the ground landlord, was then called, and was examined and cross-examined during a period of nearly five hours. He said that when Rowe was appointed foreman by the builders he was thought so good a man that it was determined not have a clerk of the works, and accordingly Rowe took the whole management of the works. The drawing, certified to be correct by Shrimplin, accurately represented the shoring. The witness continued,—

The wall was 18 inches, or two bricks, thick up to the level of the first-floor story, and above that it was 14 inches to the top. The building itself was of the lightest possible description, so that all we had to do was to keep it *in equilibrio*. Anything like a disturbance of the timbers would have been unnecessary and improper, and the purpose of the shores was merely to keep the wall *in statu quo*. We were about to underpin the old wall, and then to build an external wall against it. When Rowe had completed those shores I have spoken of, I required him to put up another one to catch the underside of the bressummer, and the back wall of the house. I also had two more shores put to the part they call the parlour —the one-story building. That was promptly done, and in a very efficient way. That was all that I ordered at that time. There were six jack shores, which were put up, I think, about the 12th of August. The house was one of the oldest, probably, in the Strand, having been built about the time of Henry VIII. With respect to jack shores, allow me to explain that in the building trade "jack" simply means "short." We have jack rafters and jack shores, and so on. It simply means short. There is another shore called a "dead shore," which is a piece of timber placed under brickwork on a plank top and bottom, and used in underpinning. The short shores were, I should think, 10 or 12 feet high, and they were placed, not at points equidistant, but wherever the irregularities of the building appeared to require them. They were put up partly by my directions, and some by Rowe himself. Wherever I saw I had a weak place I had a shore; and if I had seen what, in my judgment, was an insufficient shore, I should have interfered, not because I thought that any responsibility would have resulted to me in consequence, but because it is my duty. I consider that the house was amply shored for the purpose. I never saw a house better shored, and I believe that I have had more experience in this kind of work than most of my profession. Rowe's duty, I conceive, was to take upon himself all the responsibilities that belonged to his master with regard to carrying out the works. My general duty is to see that my design is properly carried out, that the materials are good and sufficient of their kind, and that everything is conducted with safety and propriety, but principally that my designs are properly carried out for the benefit of my employer.

At the urgent request of the tenant, it was arranged that the party-wall should be kept up. On the 2nd of August he told the tenant he would not guarantee safety of the wall. Tenant said it had stood twelve months without any shoring whatever. For one or two days before accident had had difficulty with the excavators, who had undermined house in Arundel-street, and had rendered the back building of the house in Strand insecure. Took various precautions, and warned the tenant that back building was dangerous. Plumbed the main party-wall, and found it practically upright. Left the premises in the afternoon of the day before the accident, with the impression that everything was perfectly safe. The depth of 10 feet in excavations had been reached; but that depth did not, except in one or two instances, go down to the footings. He went on to say,—

Rowe had asked me, before I left, to allow him to go on at once with the underpinning with the old bricks, which were as good as any new stocks that could be procured. However, they were of different sizes, so that they would not bond well together; and, as the specification forbade the use of any old materials, I declined to allow them to be used. Previous to underpinning, the excavations would have had to be carried 2 or 3 feet deeper; but that would have been done a short piece at a time. [In reply to jury]—I do not believe that any of the shores against the house that fell had been undermined, or that there was any excavation below the foundations of the wall that fell. At one part I could see the footings, but the ground was not excavated below them. Elsewhere the footings were some distance below the 10 feet which we excavated. There was no needle shoring, and it would have been an act of insanity to put a needle into that wall; and any operative who would have done it ought to have been discharged from his place. [Being asked by the coroner to what he attributed the accident, witness said]—I think that it is so much open to conjecture that it would be hardly prudent for me to state my own opinion. I should be sorry to lead the jury to believe that they are perfectly correct. I believe that the excavators had undermined the wall; but I did not see them do it. I do not believe that the party-wall was in any way imperilled by the excavations which were made up to the time that I last saw the building; and, when I left, it was perfectly understood between Rowe and myself that no further excavation was to be carried out until I saw Rowe again.

Mr. John Livett deposed that on the morning of the accident, about half-past seven o'clock, he was on the premises in question. He observed men at work near the foot of the wall. At some places they appeared to be about a couple of feet below the footing of the wall; and he remarked that if they did not mind what they were about they would have the house down. He then went away to breakfast, and in a few minutes he heard that it had fallen. It was sand that the men were removing from the foundations; and it appeared to him to be as loose as sand by the river side. A length of 4 or 5 feet of the footings was exposed by the excavations.

John Brown, a coal porter, who was on the premises in company with the last witness, said,—I could see the footings of the house, because it was nicely got out about 2 feet below the foundations, to begin building. There was a good bit of it got out to that depth; I should say as much as the width of this room. The foundation was a nice sandy soil.

Mr. Thomas Bayliss (who volunteered his evidence) said,—I reside at No. 273, Strand, exactly opposite the house that has fallen. I had an opportunity of seeing the works going on for many weeks previous to the accident. The wall of the house had been cut away from one end to the other,—the whole depth from back to front. I saw the bricklayers cutting away at the wall, and I heard them also at it with their hammers and chisels. The whole length of the wall—footings and all, I believe,—were cut down straight. I pledge my oath that that plan which you produce (the plan signed by Shrimplin and Brown) represents more short shores than there were.

The report of the surveyors, Messrs. Dent, Lawford, and Stevens, appointed at the previous sitting to inquire "whether there has been any want of due care and circumspection in shoring up the premises, and whether any means might have been resorted to which would have had the effect of preventing the falling of the house in question," was then read. In reply to the first, the report said,—

"As to the materials used for shoring, we are of opinion that they were ample in dimensions, and of the best quality; that those which were fixed were of proper construction, and in all respects fit for the purpose; but we are further of opinion that, assuming the evidence of William Shrimplin to be correct as to the length of the shores and their distance from the party-wall at the foot, by which the whole weight of the basement and ground-floors was unsustained, additional shores should have been placed underneath, more especially as the whole area on the east side had been excavated to a considerable depth below the kitchen-floor of No. 184, and also was stated in some places to be below the footings of the party-wall, and having further reference to the character of the foundation on which it stood, being composed of gravel and sand, and some portions of clay." And as to the second, "we are of opinion, that provided the floors of No. 184 had been shored up on the west side of the party-wall, to take off the downward pressure, and provided also additional shores had been placed under those fixed in the east side, to secure the ground and basement walls of the east party-wall from pressing out, and that the wall had been underpinned to the depth of the footings of the intended new building, the accident would not have happened."

It further stated that the reporters had learnt that both Rowe and Mr. Abraham had paid all the attention that was deemed necessary, and they believed that there could be no better judges of what is necessary for safety than "those persons in charge of the works, and interested in their proper execution."

Mr. Stevens, when examined, said,—

I attribute the fall of the party-wall to the removal of the ground below the footings, which permitted them to slip out, and think that it might have been prevented if the wall had been gradually underpinned in short lengths as the ground was removed, instead of removing it all at once. If the floors had been properly shored up inside, I do not think that the house would have fallen, even if the party-wall had. My opinion is, that the shoring was not sufficient. I should have placed the raking-shores precisely where they were. Other shores I should have placed under them, and then I should have dug out the earth and have underpinned the wall, piece by piece, in the way in which the lower part of a wall that is decayed is usually renewed. On the evidence of Mr. Abraham, I should say that the wall was perfectly safe upon the Wednesday when he left the premises. I found the ground, however, to be excavated 11 feet, and not 10 feet, below what may be called the datum line; and I found that that excavation was 18 inches below the remaining footings. It would be quite possible to excavate in an hour sufficient to shake that which before had been perfectly secure.

The Coroner, in the course of summing up, told the jury it was their duty carefully to weigh the evidence, and to say whether any criminality attached to any of the parties engaged in the work in progress. He hoped, as this inquiry had created a great amount of public attention, and had occupied a great deal of their time, that its effect would be to show that persons could not engage in responsible undertakings of this description without taking care that the utmost attention was paid to the safety and security of every part of the work. It must be remembered that the Buildings Act, however imperfectly the Legislature might have expressed its intentions, clearly had it in view to protect the public in every shape and way. With that view, it had appointed certain officers called "district surveyors," and the 68th section declared that it was their duty, whether notice was served upon them or not, to inspect works which were intended to be done or that should have been commenced. In this case the district surveyor had made a preliminary visit to the premises, and he did not think that the works would have been commenced without his receiving further notice. It certainly was a matter of regret, although it appeared to be a subject of perfect notoriety that the premises were in danger, that no single person had recourse to the only certain mode of obviating the accident by informing the district surveyor of the circumstance. It was important that the public should know that, under the 40th section of the Act, the district surveyor had the power of interfering, however long a time it might be before the interference could take effect. With regard to the Messrs. Smith, they were clearly relieved of all responsibility by their contract with the builders, because it could not be expected that the building owners should themselves execute the works.

The jury, after an absence of two hours, brought in the following verdict:—"We unanimously find that Robert Thompson, Sarah Thompson, George Dunne, and George Rowe, came to their respective deaths by the falling of the house No. 184, Strand, and that the falling of such house is to be attributed to the gross negligence of Mr. Abraham, the surveyor employed by the Duke of Norfolk and the Messrs. Smith, in not causing the party-wall to be sufficiently shored up and underpinned before the excavations for the new building were commenced. Before we separate we are anxious to express our approbation of the conduct of the Messrs. Smith in volunteering to bear the expense of employing the three independent surveyors to ascertain the cause of the accident."

Being told that their verdict amounted to a

verdict of "manslaughter" against Mr. Abraham, they said they were anxious it should not amount to that, but ultimately stated that they could not retract, whatever the consequences might be, and accordingly a verdict of "*manslaughter*" against Mr. Abraham was recorded.

We are averse to questioning the verdict of twelve intelligent and honourable men, but we are nevertheless bound by our duty to state, that we seek in vain for a justification of it in the evidence placed before them. That there was a great error of judgment somewhere is not to be denied, but, as the coroner pointed out to them, this would not justify a verdict of "manslaughter;" for that there must be gross criminal negligence, and this certainly was not proved.

Mr. Abraham appears to have given more personal attention to the work than usual; and the three surveyors appointed by the court pronounce, upon the evidence, that they believe the wall was perfectly safe when Mr. Abraham left the premises on Wednesday afternoon.

NOTES AND QUERIES.

ARCHITECTURAL AND ARTISTICAL.

REPLIES.

Gelatine Moulds.—In answer to query 7, p. 610, *ante*, I beg to say that an illustrated article on "Gelatine Moulds" will be found in Mr. Cole's "Journal of Design," July, 1851, vol. 5, p. 131. J. L.

Illuminated Clocks. — A Liverpool correspondent, "W. S." in reference to the "Query" of "S." as to the illumination of clock-fingers, describes a method by means of which clock-fingers may be lighted, and which mainly consists of the transmission of gas through tubular fingers, protected by gas-tight stuffing-boxes, to jets either along the course of the fingers or at their extremities only. The latter mode is adopted at the clock of the old church (St. Nicholas) at Liverpool, but with such a background of single lights as the town presents, it has not been found, it seems, to answer. Perhaps by the aid of coloured glass, both for protection and for perspicuity, even single jets might be made to indicate the time with sufficient distinctness.

PRIZE FOR COTTAGE VENTILATION.

Mr. Macnamara, of Purfleet, Essex, has obtained the silver medal offered by the Manchester and Salford Sanitary Association for the best method of cottage ventilation; and the thanks of the Association were given to Mr. T. Dunhill for his paper on the same subject.

THE CASTLE OF NEWCASTLE.

The Newcastle Society of Antiquaries held their monthly meeting on Wednesday evening, in week before last, Mr. John Fenwick in the chair, when, after various minor proceedings, Mr. W. H. D. Longstaffe, of Gateshead, read the second part of his paper on "The Castle of Newcastle." The first part had dealt with the *documentary* evidence; the second treated of the *structural;* and is pretty fully reported in the *Gateshead Observer* of 10th ult. to which we are indebted for the materials of the following brief notice.

After a learned disquisition on the origin and early history of the various portions of the castle, through which we cannot follow the lecturer, he proceeded to speak of its general construction. We have seen, he continued, that the keep and hall and kitchen of New Castle were called old in 1237, some sixty years after erection, and that between 1313 and 1334 sufficient time elapsed to reduce both keep and outbuildings to a state of utter dilapidation. In little more than twenty years after the completion of Conway Castle, a jury found that the great hall and cellar under it were ruinous on account of the *age* of materials and default of lead, and could not be repaired under 160*l.* of which the masons' work amounted to 100*l.* Other towers were also in a precarious state, and ruinous, even as to masonry. All this seems very odd. The great use of wood, the imperfect exclusion of the weather by unglazed windows, and the wilful dilapidation by keepers who made the most of their temporary tenure by stealing lead and other valuables (and this accusation is more than broadly hinted at in the Newcastle documents), might effect the dilapidation in some degree. But the way in which the masonry of towers had decayed can only be accounted for on the ground of those terrible settlements we see in so many ancient buildings, endangering the existence of steeples, twisting whole sites of buildings out of perpendicular, and throwing arches into the most eccentric curves. The plan of working by contract (*ad tascham*) may have had its effect; but from whatever reason in the main, the rule-of-thumb buildings of our fathers were often ill-founded and ill-built, and their splendid materials (calculated, when well applied, to last for ages, as they frequently have lasted), were to a great extent thrown away; and the frequent reparations and rebuildings we have chronicled were thus rendered absolutely necessary.

SIGHTS AND SCENERY.

Theatre Royal Drury-lane.—The series of performances by Mr. G. V. Brooke and Mr. Davenport, supported by Miss Anderton, Mr. Younge, and others, with which Mr. E. T. Smith has commenced his season here, are sufficiently remarkable to call from us, as lovers of the drama, words of commendation; and the success which has attended them will, it may be hoped, lead the management to attempt a greater amount of completeness in the scenery and accessories than has yet been effected. In *Othello, Iago, Claude Melnotte, Sir Giles Overreach,* and *Virginius,* Mr. Brooke has shown himself an actor of no ordinary powers, whose faults are due rather to his audience than to himself, and it is much to be regretted that his present stay will be but short.

Notices of Books.

A Collection of Curious, Interesting, and Facetious Epitaphs. By Joseph Simpson, Librarian of the Islington Literary and Scientific Institution, 1, College-place, Highbury-vale.

Some time since we published, it will be remembered, a number of the absurd epitaphs which disgrace our churchyards, with the view, of course, of leading to the adoption of more fitting expressions. We might have continued doing so till now, for examples were forwarded from all quarters, but our object was not to record them, but to expose the absurdities that were committed, and induce a reform in the practice.

"I love," says one correspondent, "to stroll into a village churchyard in the evening of a mild summer's day, and to linger among the 'mouldering heaps' at a time when 'all the air a solemn stillness holds.' I have frequently done so; and upon some occasions have been much interested when perusing the inscriptions which affection, esteem, reverence, or gratitude, had caused to be graven on the tomb, vault, or headstone erected to the memory of 'departed worth.' To persons who possess minds of a contemplative turn, the pompous style of many of these effusions, and the ludicrous character of others, will furnish sufficient matter for meditation," — yes, indeed, and for sorrow. Take this odd example which a second correspondent, "T. G." sends from Wirksworth Church, near Matlock:—

"Near this place lies the body of
Philip Shalcross,
Once an eminent *quill-driver* to the attorneys in this town,
he died 17 Nov. 1787, aged 67.
Viewing Philip in a moral light, the most prominent and remarkable features in his character were, his real and invincible attachment to dogs and cats, and his unbounded benevolence towards them, as well as towards his fellow-creatures.

To the Critic.
Seek not to show the devious paths Phil trod,
Nor draw his frailties from their dread abode:
In modest sculpture let this tomb-stone tell,
That much esteemed he lived, and much regretted fell."

The first writer sent one from Amwell Churchyard, Herts, more philosophical than usual, but much too involved for its purpose:—

"That which a being was, what is it? show?
That being which it was, it is not now.
To be what 'tis, is not to be, you see:
That which now is not, shall a being be."

Even where the teaching is good, the lesson is conveyed, if not illiterately, so inelegantly that it can excite only a smile. Thus, in Cookham Churchyard, on the Thames, near Maidenhead,—the mention of the place recalls vividly a bright summer morning and a float up here with much-prized friends; the ancient church, and the inn with no less a signature than "Old Bel and the Dragon,"—we stumbled on one which, although dated 1816, ran thus:—

"All you that pass this way along,
O think how sudden I was gone.
God does not always warning give,
Therefore be careful how you live."

The curious collection published by Mr. Simpson contains many specimens of churchyard ribaldry, as this from Stepney Churchyard:—

"My wife she's dead, and here she lies;
There's nobody laughs and nobody cries:
Where she's gone, and how she fares,
Nobody knows and nobody cares."

Or this from Tynemouth Churchyard:—

"Wha lies here?
Pate Watt, gin ye speer.
Poor Pate! is that thou?
Aye, by my soul, is't;
But I's dead now."

The compiler says,—"The design of the present collection being to exhibit 'epitaphs as they are,' as well as 'as they ought to be,' no attempt at classification has been attempted." We think, however, he should have pointed out how few there are in the collection which can be placed under the second heading.

The Principles of Commerce and Commercial Laws, explained in a Course of Lectures. Delivered by Sir George Stephen, Barrister-at-Law. London: John Crockford, 29, Essex-street, Strand. 1853.

Comparatively little opportunity occurs in the counting-house for acquiring a knowledge of the elementary principles of trade; and the elaborate and expensive books of Mr. McCulloch and Mr. Levi are more adapted for reference than elementary instruction; so that in fact the very foundations of a school of practical and theoretical commerce yet remain to be laid. This little work, so far as we are aware, is the first attempt to convey to the young student the principles of commerce in a didactic form; and it is worthy of its purpose as the foundation-stone of a mercantile school, which the most mercantile nation on the face of the earth has yet to erect. The commercial world are deeply indebted to Sir George Stephen for this important little work, which is appropriately dedicated to the Mayor of Liverpool; and we trust it will meet with that extended patronage among the gentlemen of the counting-house which it fully merits.

Miscellanea.

The Burial-ground Orders in Chelsea.—A vestry-meeting was held September 15th, at St. Luke's, Chelsea, to take into consideration the order of the Home Secretary "to close wholly and at once the church vaults of St. Luke's, and with the reservation of existing rights in the old parish churchyard, in the old burying-ground in the King's-road, and in that portion of the churchyard which has already been used for interments, the same to cease altogether with the same reservation at the end of twelve months." Several gentlemen addressed the meeting, stating that St. Luke's parish is placed in a very harassing position by the order of Lord Palmerston. In 1810 the parish obtained a local Burying-ground Act, and borrowed, by way of annuities, 6,000*l.* which is not yet liquidated; and a burial-ground rate has been yearly levied since that date. That two-fifths of the burying-ground have never been used; and that no complaints have ever been made against St. Luke's; but, on the contrary, the vicinity to its burials has been more free from epidemics than any other part of the parish. The trustees under the Act had in a memorial stated these facts to Lord Palmerston, and who expressed his regret that he could not alter his opinion. The next step taken was to memorialize the Queen in council; and Mr. Loveland, the clerk to the trustees, waited upon the clerk in council to inquire if the parish could be heard by counsel before the Lords' Committee in council, to oppose the order to close their grounds so prematurely. Mr. Loveland was informed that such a proceeding would not be allowed, and that the vestry had taken all the measures they could to oppose the notice. With regard to Dr. Sutherland, it was stated by Mr. Johnson, the sexton, that the doctor went over the ground and expressed himself, after a rigid examination, satisfied. In about half an hour's time after leaving the churchyard, the doctor returned and said he had altered his mind. The vestry ultimately passed a resolution empowering the trustees to oppose the order in every way they could, as being one uncalled for, and a very hard measure to the parishioners.

Fall of a Floor.—In Brewer's-court, Great Wild-street, Lincoln's-inn-fields, lately, the floor of a ragged school fell in while a meeting of the directors and friends was being held. Some of those present sustained severe bruises, but none were killed.

The Iron Pavement in America.—The iron pavement laid down in the streets of Boston has, it is said, been eminently successful. After seven months' wear, and the frosts of winter, the street is said to present as smooth a surface [rather too smooth, may it not be?] as when the pavement was first laid, and the sensation of riding upon it is like that of passing over a bridge. This pavement, which is said to have been invented by Mr. W. D. Terry, is described as consisting of cylindrical boxes of cast-iron, about a foot in diameter, divided into compartments so small as not to admit the hoof of a horse. These cells are filled with gravel, or any suitable substance, and the upper surface so grooved as to prevent the possibility of a horse slipping upon it. The boxes are firmly bound together by flanges and commissures, yet the pavement, it is added, can be easily taken up in case of necessity.

Improvement in Hydraulic Rams.—These very useful instruments appear to be less appreciated in this, their native country, than in America, where they are being improved and modified for special or general purposes. The scientific committee of the Franklin Institute of Pennsylvania have lately reported on an improvement of the ram by Mr. J. L. Gatchell, of Elkton, Maryland. According to the reprint in their *Journal*, under date May last, the first improvement submitted for examination consisted in the use of a chamber between the body of the ram and the air vessel, in which chamber is placed a flexible diaphragm, depressed by a spring, but capable of elevation by the recoil, thus communicating the momentum of the water passing through the body of the instrument to that contained in the air vessel; the principal advantage of this mode of construction being the making the ram "double acting," that is, keeping the water in the air vessel separate from that driving the instrument; so that the water of any flowing stream, although unfit for domestic or manufacturing use, may be made available for raising the whole supply of a good spring. This effect has been before produced, both by sliding pistons and by interposed columns of air; but the use of the flexible diaphragm, by its tendency to produce a vacuum in the chamber above it when depressed by its spring, enables the water to be lifted into this chamber by atmospheric pressure or friction, and this feature the committee regard as a novelty. It moreover appears probable that the mechanical action of this diaphragm will react upon the discharge valve, and thus have a tendency to prevent the stoppages which have so often been a cause of annoyance in the use of hydraulic rams. The second improvement presented was a method of further preventing these stoppages by placing a spring upon the head of the ram, so that it shall be slightly lifted at every rise of the valve. The third improvement was in the method of regulating the discharge of the water from the head valve, through a series of orifices around the circumference of a disk.

Architectural Education.—Walking along the streets of London with an intelligent foreigner, if there is anything that makes an Englishman sometimes ashamed of his country, it is the frequent deformity of our public buildings. To mention instances would be a needless labour. It is all very well to say that we are mainly a commercial community, a practical people, and that ornament must give way to convenience, and taste to utility. But architecture is of all arts that in which the useful and the beautiful may best be combined. We have public edifices which are standing proofs of the national capacity for great architecture, and the admiration of them proves the popular appreciation of the art. But still there are occasional exhibitions of miserable invention and of bad taste, and some of the most recent public structures are amongst the worst. The general condemnation of an unsightly building is a gratifying symptom of public taste, for the education and refinement of which so much is now being done. But it is worthy of consideration whether something meanwhile might not be done to prevent the perpetration of architectural offences. Under the existing Building Acts, it is necessary that the most trifling constructions and alterations in private buildings should be submitted to the inspection of district surveyors. It might surely be easily provided that the plans of edifices of public prominence or importance should be submitted to some competent public board. Demosthenes told the Athenians of his time, that while the houses of Miltiades and Aristides were undistinguished from those of other citizens, the public edifices were carefully adorned with the most splendid magnificence. And in Rome, Horace mentions the *Leges*—

> "Oppida publico
> Sumptu, jubentes, et Deorum
> Templa, novo decorare saxo."

There are some of the institutions of old Rome which might be usefully imitated in our modern civic arrangements, and of these not the least important would be an effective board of Ædiles. — *Literary Gazette.*

A Romance of the Trowel and the Mallet.—A trowel and mallet used by his Royal Highness the Prince Consort, on 11th June, 1844, in laying the foundation-stone of the Hospital for Consumption, at Brompton, have just *realized*, it may be said, for the hospital, the handsome sum of nearly 15,000*l.* in a way so singular as to be well worth recording, in our pages in particular, as we now do, by transferring the story, in a condensed form, from the columns of the *Press:*— When the stone was laid, a gilt trowel, manufactured by Messrs. Elkington, was made use of by the Prince. At a bazaar then held, in aid of the institution, this trowel was exhibited, and a gentleman who saw it, Mr. John M'Cullom, of Bedford-place, purchased it for thirty guineas. A few days afterwards it became first known to the committee that it was usual to request the layer of the stone to accept the trowel, and all concerned were desirous of repairing the error and regaining possession of the implement, that it might be offered to the Prince. A representation was made to Mr. M'Cullom, and, though very reluctant to part with it, he at length consented, but refused to take back the thirty guineas. The trowel, being sent to the Prince, was accepted. Mr. M'Cullom was presented with the handsomely-carved walnut-wood mallet also used by his Royal Highness. These circumstances, trifling in themselves, seem to have made a lasting impression on Mr. M'Cullom's mind. So far from feeling aggrieved at the loss of the trowel, the transaction appears to have strengthened his interest in the charity which he thus, for the first time, became acquainted with. On his death, a short time since, he left his property to his sister, his only surviving relative; but a memorandum in his desk conveyed his desire that, at her death, she would bequeath it to the Hospital for Consumption. This wish the lady held sacred; and by her will, just proved, she leaves it to the hospital. Her estate is being realized, and will leave a net surplus not far short of 15,000*l.*

Insulation of Lightning Conductors.—Mr. S. Brown of Sheffield, has introduced an improved form for the glass insulators of lightning conductors. A glass flange overlaps the ring of the holdfast, and a projection from it covers the shank of the holdfast up to its entrance into the stone or brick work. Among the churches on which Mr. Brown has recently been employed to affix his conductors, are the following Hessle church, near Hull, where the conductor has been affixed, and the spire and tower have been repaired and pointed; Baslow church, where the same has been done; Sprotborough church, where the conductor has been affixed, as well as at Sprotborough Hall; Wellbourn church, near Grantham; Leighton Buzzard church, Bedfordshire, &c. Conductors have also been erected at some of the large manufactories of Sheffield, Derby, and other towns.

Drainage of a Lake by a Syphon.—A loch and marsh in front of Culhorn House, the seat of the Earl of Stair, according to the *Galloway Advertiser*, are in course of being drained by a syphon. There were about 8 acres of water above 16 feet deep in the centre, and fully 20 acres of marsh. The water is now lowered 9 feet under its former level in the loch. It might be drawn lower still, but much difficulty has arisen from the sludge pressing in toward the mouth of the syphon, and from the whole bottom of the loch consisting to a great depth of an impalpable sludge, which must take some time to consolidate and become workable. The complete drainage of the loch, consisting of such materials, will take another summer to complete thoroughly. The undertaking has been carried out by Mr. Wright, plumber, Straurаer, under the superintendence and with the engineering aid of Mr. M'Harrie, his lordship's overseer. The syphon is 880 yards long (exactly half a mile) and 7 inches in diameter. The highest part is 21 feet above the present surface of the loch, and the longest limb of the syphon is 10 feet under the level of the water, giving 10 feet of fall. The discharge of the water at the present time is about 200 gallons per minute; but at first, when the loch was at its original height, and the fall greater, the discharge was much more. The main part of the syphon consists of cast-iron pipes $\frac{3}{8}$th of an inch thick, with spigot and faucet joints very carefully joined and made air-tight with lead. The contract expense of the iron pipe laid, when complete, was 7*s.* 6*d.* per yard. The access of air had to be specially provided against by means of an air-pump worked by the stream discharged.

Liquid India Rubber.—A correspondent of a New York paper, writing from Para, in Brazil, says that by a method recently patented, and which differs essentially from the usual curdling, the milk, as drawn from the tree, is bottled in large glass bottles and demi-johns; a preparation of some chemical nature, which is a secret, is mixed with the milk, and the bottles are securely sealed. In this way the gum is sent to the United States. It curdles twenty-four hours after exposure to the air, and forms, it is said, a pure, white, solid, and remarkably strong rubber.

Somerset Archæological Society.—On 14th inst. the society, after the various proceedings connected with their annual meeting, had an excursion to Brympton, Odcomb, Stoke, and Montacute, after which they held a meeting at the Town-hall, Yeovil, when the Rev. F. Warre read Mr. Freeman's paper on the Architecture of the vicinity of Yeovil. Previous to the excursion, Mr. Walter read a paper on Hamdon-hill, in which he stated that it was not, as generally supposed, an immense rock of building-stone, nearly inexhaustible; for the greater part of the hill was sand, which largely extended to the eastward, and in which boulder stones of considerable size were embedded. Upon this was a pefectly compact bed, from 20 feet to 50 feet in depth, below which none had been found; so that this valuable bed of stone would, from the demand for it, become in time somewhat scarce. He said "valuable stone," although Dr. Buckland had stated that it was of a perishable material. He was under a delusion in stating that our ancestors had called it the best stone, for it was well known that formerly the rocks were worked down only to a certain depth, and left covered with rubble, below which the quarrymen were now cutting, and the most compact stone was found at the lowest depth. A well had been sunk in the hill to the depth of 120 feet; about 40 feet of stone had been penetrated; next about 60 feet of sand; next to this was the upper lias, then the marlstone. In his paper on the Battle of Longborth, reported in the *Taunton Courier*, the Rev. W. A. Jones after remarking that Dr. Owen Pugh represents Longborth to have been "some harbour on the south coast, probably Portsmouth," proceeded to identify it with Langport. The Welsh word Llongborth signified a port or harbour for ships, and bearing in mind that Celtic names are invariably descriptive of localities, it would be necessary to show that the estuary now confined to Bridgewater Bay did at that time cover the plains of Sedgemoor, and thus make Langport accessible to such ships as the Britons then possessed. Having glanced at the great change which had taken place within the historic periods in the coast line of the country, Mr. Jones observed that even now Langport was within reach of the tidal waters; that Porthkerry, on the opposite side to Bridgewater Bay, was at one time frequented by "Cevi of the extensive navy," but was now quite inadequate to the accommodation of a fleet; that the characteristics of both sides of the Polden hills afforded conclusive evidences of changes on the English coast of the Channel, and that there had been a gradual elevation of the level between Langport and the sea by the action of the floods, the subsidence of the muddy waters of the Severn and the accumulated growth of aquatic vegetation, as the character of the alluvial deposits of the turf moors clearly indicated.

The Carpenters and Joiners of Bristol have held a public meeting, at which the following resolutions were unanimously adopted with regard to working overtime:—"That this meeting considers the present system of overtime, as adopted by several shops in Bristol, not only injurious by keeping a number of men unemployed, but that it is highly detrimental to the physical, mental, and social condition of man, by depriving him of the short time he would otherwise have for the improvement of his intellectual faculties; injuring his health, and alienating him from his family. That in order to remedy the existing and still growing evil of overtime, this meeting pledges itself to use all lawful means to destroy such a system, and recognises as a general rule that no man work more than two hours for a quarter of a day overtime, believing that such a rule would materially mitigate the evil; and recommends that no man do work overtime unless in cases of emergency."

Appold's Centrifugal Pump.—This now celebrated pump is employed to drain the marshes about Oulton, Carlton Colville, and Barnaby. It discharges 300 barrels of water a minute into the Waveney, and lowers the level 6 inches in the hour. A large tract of rich soil, it is believed, will thus be fully redeemed from the marshy state.

Manufacture of Iron and Steel.—Mr. T. W. Dodds, of Rotherham, has patented various improvements, among which he claims,—1. A general arrangement of machinery. 2. The conversion of iron into steel, wholly or partially, by the use of a carbonaceous fuel, or a mixture of soda-ash, soda, potash, pearl-ash, or other alkaline matter, and carbonate or bi-carbonate of lime and charcoal. 6. The mode of adjusting the anvil level of steam-hammers by means of a hydrostatic cylinder or chamber. 7. The mode of working hammer or tilt-levers, so as to strike in both directions by the use of a rotary crank-shaft connected therewith. 8. The use of an atmospheric buffer for increasing the rapidity of the hammer strokes. The use of cork, or other partially elastic material, at the points of metallic connection of hammer, details for the purposes described.

Sickening Nuisance in Lambeth.—A deputation of the inhabitants of Westminster-bridge-road and its vicinity went last week to the Lambeth Police-court to consult the magistrate as to the abatement of an abominable and deadly nuisance arising from the boiling of putrid fat; but they found that there is actually no means whatever of summarily dealing with such a nuisance. We do verily believe that "the liberty of the subject" to carry on whatever "trade" he may choose, and at whatever cost to the lives of his fellow-subjects, is so great and so respected, that even were the materials of this fat-melting got from the nearest graveyard, nothing "summary" could be done to abate the nuisance. And, by the way, the roasting, at least, of human remains, if not the boiling of them, has actually been practised within the precincts of this enlightened metropolis. There is nothing abominable enough for the law as it stands to be able summarily to suppress as a nuisance, if the nuisance be committed under guise of a "lawful calling"—a legitimate "trade" in this nation of shopkeepers and tradesmen. A complete revolution in the law as it affects the progress of sanitary reform, therefore, must be brought about as speedily as possible. It is only to be feared that the pestilence will be again decimating Lambeth, one of its first and favourite haunts, ere any thing *can* be done to reform the law. The late order in council, it seems, does not reach such a case as that in question. A summons, however, has been granted "so that the evidence might be taken and the defendant held to bail to answer to an indictment at the sessions."

The Iron Trade in America.—One of the most wonderful features of the day, says the *United States Mining Journal*, is the immense progress hourly making in extending the manufacture of iron in the United States. We are receiving information daily from all parts of the Union of the formation of companies, the blowing in of new furnaces, and the erection of the latest improved machinery for the turning out of vast quantities of iron. In fact, it will not be long before we shall be independent of foreign supplies; and we look forward with certainty to the time when we shall undersell England in all the markets of the world. Capital is eager for investments in making iron—labour is steadily coming in from the Old World—fuel is abundant and cheap, while iron-ore is found in every state of the Union. In Pennsylvania alone we have more iron-ore than has been found in the British Isles—New Jersey has miles and miles of ore—Missouri has mountains of solid ore, exhaustless and easily worked, while Lake Superior produces her ore with ninety per cent. of pure iron. Why then have we been so long dependent on England? The time is fast approaching when we shall even supply England herself with iron of superior quality. And what so fortunately has drawn forth the long dormant energies of our people? Not a protective tariff; but *the grasping avarice of the British ironmasters, who*, in exacting exorbitant prices when the wants of our railroads produced an increased demand, *are fast killing the golden goose.*

American Patents.—Amongst patents recorded in the journal of the Franklin Institute of Pennsylvania for April last, we find the following:—For an improvement in manufacturing malleable iron directly from the ore; George A. Whipple, Newark, New Jersey. Claim—"Forcing down upon the iron ore, from the roof of the furnace, in the different stages of the process, as required, and on the different hearths, atmospheric air, either heated or cold, for the purpose of decarbonizing the ore, and bringing the iron to nature, or refining the same and regulating the degree of heat, substantially as described."—For an improvement in cementing materials for ornamental compounds; Charles Ludwig Gran, Hamburg, Germany. assignor to Conrad Poppenhusen, Brooklyn, New York; patented in Germany, December 18, 1847. Claim—"The method of making artificial veneers, &c. by combining with sawdust, or the equivalents thereof, as herein specified, the curd of milk, and lime, or its equivalent, after these latter have been triturated and thoroughly mixed and reduced to a semi-fluid state, substantially as specified."—For an improvement in patent compounds; Charles F. Sibbald, Philadelphia, Pennsylvania; patented in England, October 15, 1852. Claim—"Having described the manner in which my metalline compound may be made, and pointed out a few of its uses, I do not claim either of its elements separately; but what I do claim as my invention is, the compound of tallow, plumbago, and charcoal, herein specified, substantially in the manner and for the purposes herein set forth."

Building for Free Library at Liverpool.—A sum of 6,000*l.* has been presented by Mr. William Brown, M.P. to the Liverpool corporation for the erection of a free library, which it is proposed to build on a site at Shaw's Brow, when raised to a higher level, in connection with a proposed high level bridge and other improvements.

Saltaire.—This huge worsted manufactory was opened on Tuesday in last week with a dinner on a scale equivalent to its magnitude, 3,750 persons, including 2,500 operatives, having sat down to dinner together on the occasion, which combined not only the formal opening of the establishment, but the completion of the fiftieth birthday of the proprietor, Mr. Titus Salt, and the majority of his son. The Earl of Harewood, Lieut.-col. Adams, the mayors of Leeds, Bradford, Halifax, and Wakefield, and several members of Parliament were present. Saltaire, as we have before noted, is near Shipley on the Aire. We have already given some account of this gigantic establishment, which is said to have cost nearly half a million of money: this, however, is probably an exaggeration. We may here further quote some particulars from the *Bradford Observer* as to the extent, &c. of the works. The area appropriated to the buildings is computed at 6 acres, while the several floors in the mills, warehouses, and sheds, form a superficies of 55,600 yards, or 11½ acres. The mill, which runs from east to west, will be 550 feet in length, and 72 feet in height above the level of the rails. It includes six stories, and is constructed of massive stonework in the boldest style of Italian architecture. The walls look like those of a fortified town. The floors are formed on arches of hollow brick, made on the ground by Clayton's patent process; the openings in the bricks being used for the purposes of ventilation. Rows of ornamental cast-iron columns and massive cast-iron beams support the arches. The roof is of iron. The windows, of large size, are entirely filled with immense squares of cast plate-glass. The whole of this building is fire-proof. The whole of the works are constructed of stone, supplied by twenty quarries in the surrounding neighbourhood. The gas-works are upon White's hydro-carbon system, and are calculated to supply 100,000 feet per day for 5,000 lights, in mills, sheds, street, and houses of the workpeople. 4,500 hands will be required to keep these works going. This will involve an addition to the population of Saltaire of from 9,000 to 10,000 persons. To accommodate these, Mr. Salt proposes to erect forthwith 700 dwelling-houses of various classes, replete with every convenience requisite for the health, comfort, and well-being of the inhabitants,—a noble opportunity, which it is to be hoped will be fully taken advantage of. The architects are expressly enjoined to use every precaution to prevent the pollution of the air by smoke, or the water by want of sewerage or other impurity. Wide streets, spacious squares, with gardens attached, ground for recreation, a large dining-hall and kitchens, baths and washhouses, a covered market, schools, and a church, each combining every improvement that modern art and science have brought to light, are ordered to be proceeded with by the gentleman who has originated this undertaking.

Royal Bavarian Chapel, Warwick-street, Regent-street.—Considerable alterations have been made in the Warwick-street Roman Catholic Chapel. A new altar-piece has been put up, occupying the whole space of the end of the chapel, with four Corinthian columns, six pilasters, and sub-pilasters running the whole height. In the centre is a large sculptured tablet, 14 feet high and 7 feet wide, representing the Virgin Mary, and cherubims, by Mr. Carew, lighted from above. The cost of this, we are told, was about 1,000*l.* A new ceiling has been put up. The seats in the body of the chapel have been rearranged, and other works done, under the direction of Mr. Erlam, architect. Mr. Holder was the builder, and W. Hemsly clerk of the works.

Folding Steps for Omnibus-roofs, &c.—An invention has been registered by Mr. Bayliss, of the Strand, for convenient access to the roofs of omnibuses. It consists of folding steps with hand-rails, and is said to give no additional trouble to conductors, and create no loss of time either to omnibus or passengers. Folding steps for private carriages were invented and patented many years ago, but this modification of the idea of folding steps is probably new.

Water Meter.—A water measurer has been patented by Mr. Taylor, of Mason-street, Manchester, of which the local *Courier* gives a description, from which the following particulars are gathered. The instrument is simple, presenting outwardly something of the appearance of a large dwarf steam-engine cylinder, and inwardly that of a common water-wheel, working horizontally instead of perpendicularly, in the cylinder, with two streams of water shooting from two points, inlets in the circumference of that cylinder, and communicating a rotary motion to the wheel by striking upon its boxes, attached to the pivot on which it works a series of other wheels that work a dial, on which are registered the number of revolutions made according to the force of the column of water pouring in through the inlets. Of course the quantity of water required to move the wheel and its machinery is a matter of calculation.

Machine for Bending Timber.—A new machine for bending timber for ships, and other uses, is spoken of by the *New York Herald*, as having been invented by Mr. T. Blanchard. It will produce as great a revolution in the moulding of wood, says the *Herald*; as Wordsworth's planing machine has in its operations. A company has been formed for the purpose of purchasing the rights for the United States. Professor Mapes, in speaking of the scientific operation of this timber-bending machine, as adapted to the building of vessels and the manufacture of household furniture, says, "By the plan of Mr. Blanchard, straight timber can be bent to all the required forms, and this, too, without abridging the capillary tubes of the wood; for, instead of pursuing the old mode of stretching the outer fibres and compressing those of the inside or shorter line, he confines the outside of each stick to its original length by end pressure, forcing the fibres into a new figure without rupture, and retaining all the original strength of the wood. The bending is performed while the vegetable albumen is softened, and thus much of it must exude, improving the lasting properties of the wood."

Lecture on Architecture at Sheffield.—On Tuesday week, Mr. Hugh Thompson delivered a lecture to the students of the People's College on "Ancient English Architecture," from the time of the Romans to the Reformation, including the Elizabethan period. In speaking of local specimens of the several styles treated of, the lecturer alluded to Rotherham Church. This, he observed, is a particularly fine specimen of the Perpendicular style. At the first glance, it would appear perplexing that a town like Rotherham should be possessed of such a church. But it is accounted for from the fact that it was the birthplace of Thomas Scott, the eminent divine, who was Bishop of Lincoln, and afterwards for twenty years Archbishop of York. It was natural to suppose that his influence went far towards procuring for his native town this extraordinary ecclesiastical structure; and to his influence, even at this day, Rotherham owed the possession of a fellowship to the University of Oxford. The lecture was illustrated by numerous drawings of churches, cathedrals, &c

Election of Surveyor of Kentish Town Pavements.—One of the competitors writes to us complaining that of three testimonials sent in by him with his application for the surveyorship, only one was opened, so that the commissioners could not by any possibility either ascertain the nature or the comparative superiority of his qualifications, or do justice in the competition. He thinks it exceedingly unjust to ask for testimonials and not take the trouble to look at them, after being procured and sent; and he wishes us to forewarn others what treatment they may expect in future cases, and to advise them to save themselves all trouble, expense, or anxiety as to testimonials.

Proposed Improvement of Liverpool.—A scheme for various town improvements has been brought under discussion in the Liverpool Council by Alderman Bennett, on the part of the Improvement Committee, whose proceedings it was desired to confirm. The improvements as explained are the following:—Hatton-garden, to make the width 12 yards, at a cost of 15,150*l.* A street from the bottom of Shaw's-brow to the top of Manchester-street, including improvement in Shaw's-brow, and works connected therewith: these, with the works, the bridge, and all connected with it, would cost 90,600*l.* Hardman-street, to make it same width from top to bottom, cost 1,500*l.* Widening Water-street, to carry it past down by the iron warehouse at the same width as opposite City of Dublin Steam-packet Company's offices, cost 7,250*l.*—making total cost 114,500*l.* The proposer spoke of proceeding to parliament for powers to borrow that sum, the annual interest of which, at 6 per cent. would be 6,800*l.* This, he said, would be but the beginning of a grand scheme of improvement to be brought before the Council next session but one.

TENDERS

For two detached villas, fences, and gates, for Philip Lewis, at Leyton, Essex. Mr. William Reddall, architect.

Ashby and Sons	£2,671 0 0
Riddle	2,356 5 0
Scott and Cornwall	2,345 0 0

TO CORRESPONDENTS.

"W. W." (the appellation "deal"—from *dælan* (Saxon), to divide—is applied exclusively to the wood of the *fir* tree, of which what is called *pine* in ordinary business, is but one variety).—"Tudor Architecture."—"H. G."—"J. G." (not knowing the circumstances, we cannot usefully interfere).—"W. N."—"J. J. L." (see list of subjects issued by the Society of Arts, Adelphi).—"J. J."—"An Old Subscriber." Hereford.—"Constant Reader," Bermondsey.—"S."—"Critical Jeames."—"C. P."—"R. L. S." (is not quite correct as to Ruinous Buildings).—"Sub," Southampton.—"J. M."—"C. B. A."—"R. S."—"E. W."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

The Builder.

SATURDAY, OCTOBER 8, 1853.

KNOCK often, and you will be heard at last. Whatever may have been the result of our previous endeavours to awaken attention to the circumstances under which large bodies of persons are living in London, we have the satisfaction of *knowing* that our last articles on the subject have led to positive endeavours towards improvement. We have received, too, with much gratification, the unsolicited assurance from the medical officers of several parishes, that our statements have enabled them to obtain co-operation in quarters where it had been wanting, and that they hope to be able to ameliorate the condition of several neighbourhoods. Moreover, it is stated that the New River Company has undertaken to supply water to the whole of the courts and alleys in the City on *Sundays*, as well as other days. The condition of a large number of cellars in the City, brought before the public in a recent number of our journal (p. 617, *ante*), will doubtless receive the attention it demands from the able and energetic officer of health there, Dr. Simon. And let us here take the opportunity of acknowledging the admirable conduct of the members of the medical profession generally,—conduct above all praise. The community owe them a deep debt of gratitude. If they had been listened to earlier we should be in a better condition to resist the spread of pestilence than we are. In the introductory lecture given at the London Hospital on Monday last, by Dr. Nicholas Parker, the lecturer, after tracing the history of cholera, and showing that it was now following its former track, but that its ravages had been everywhere greater, said (and was fully entitled to say it),—"We still hear men urge the impotence of our science to deal with the plague as a reproach against our profession. But no culpable neglect—no disgraceful ignorance—is ours. We cannot, indeed, stay the hand of the destroying angel—we cannot snatch his victim from the icy embraces of grim death—we cannot bid the already stagnant blood to flow onward in its course; but if the repeated warnings of members of our body had been heeded—if their reiterated exhortations and earnest remonstrances had been regarded—if their wise counsel had been followed, and the measures which they urged on the authorities of this land had been carried out, there are strong reasons for believing that cholera would not again have invaded our shores. Let us, then, remember that pestilence still rages in our densely-populated cities; that the deadly emanations from those plague spots, the burial-grounds, still saturate the air of this metropolis with their pestiferous gases; that animal, and even human putrescence, still contaminates our water; that fever still decimates our over-crowded emigrant-ships; that our poor still lodge in wretched hovels which are a disgrace to a civilised community; that lunatics are in many instances still treated as criminals; and that a comprehensive and efficient scheme of national education is still to be framed. Let us remember all these wants of the age, and not rest until the final victory be achieved."

Again we say, honour to the members of the medical profession of this country!

Touching the progress of the disease, the circumstance should not be lost sight of, that the neighbourhood of Newcastle was the first place visited by cholera in 1831; nor should the statement that at Howden, a village situated between Newcastle-upon-Tyne and Shields, Dr. Gavin and Mr. Lee have visited a house, in one room of which the first case of cholera appeared, and *proved fatal*, in 1831, in 1848, and in 1853. The increase of its virulence has been very observable at Newcastle.

Every day shows more and more strikingly that the cholera can be defeated by sanitary precautions. If houses are placed in situations where houses ought not to be, or if ill-supplied with drains, water, and proper means of ventilation, an extraordinary amount of ill-health and death results, with as much certainty as that heat comes from fire.

Let Newcastle-upon-Tyne be a "beacon" to the nations: day after day the most extraordinary statements are made respecting the sanitary condition of that town, and there is more yet to be learned. We could make revelations which would show a frightful condition of things there, but to do so would disgust our readers. An examination of the registrar's lists of deaths for two or three weeks shows of itself the connection between dirt and death.

We have almost done enough towards showing the condition of parts of London, but it may be useful to add a few notes of places through which we have walked recently. Take, for example, Gilbert-street, near the Bear-yard, Lincoln's-inn-fields. "Here," says an informant (pointing to the places), "are one, two, three, four, five—about six slaughter-houses within a few yards; a large tripe-boiler's—the effluvium from which is very bad;—stables for horses, &c. You may stand and throw a stone from one of these slaughter-houses to another. Look into this one house [we refrain from giving the number]; you see the water is coming in; there is one cask capable of holding about fifty gallons, another a little more. There is no tap in these casks, so each person is obliged to dip vessels, however dirty, into the water. This supply is for three small houses, containing five families of from five to six persons each: this number the people allow, but some of them being Irish, it is probable that they have lodgers. The people do not like to drink the water from the casks. If they can catch a little when it is coming in they take it home; if not, they go to the spring of Lincoln's-inn."

This dwelling-place has two slaughter-houses at the back, a closet close to the water, a dust-heap, and an open gully-hole in front. The smell of this place is shocking. A respectable shop-keeper opposite has never had her health since she came into the neighbourhood. In her house the water is in the cellar. Standing in this place a person pointed out a house in which two children had been ill of fever, and where one is ill of some complaint at present. At the corner a young woman is dying, and they blame the bad air. In a house on the opposite side of the street a person is lying dead—close to Bear-yard. We went at random into 4, Sheppard-street, close by. The drain is stopped: the smell, even before passing the threshold, is frightful. Within, we find a clean place, but an atmosphere of a most dangerous nature: we dive into the cellar; here is the closet, the water-cask, and but little ventilation. The effect of such conditions it is fearful to contemplate. So bad was this place that we were glad to rush out into the somewhat purer air. Any whose duty it is to inquire will receive a sad account from the people living here and round about. All the neighbourhood is in a bad state—a state dangerous under favourable circumstances, but fearful if we consider the condition and poverty of many of the inhabitants. Take one specimen—namely, the occupant of the house in which the children have been ill. The woman, who was washing, was pale and careworn, the room with its little furniture squalid and dirty; a sick child was in the cradle, over which she had watched for death several nights. She had scarcely had any food, "things are getting so dear," she said, "for such as us. I could not wash yesterday, I had neither fire nor soap. People don't know how hard poverty is: I took that poor child's clothes and pawned them for 4d.; here is the ticket: I was advised to get Port wine for the child, I got two pennyworth, there it is nearly all of it left [showing us a small bottle], the poor thing cannot take it. I bought bread with the other 2d. My other children have been ill; I have got an admission for them into the hospital. I pay 3s. a week rent for this place, but owe several weeks. The landlord, who is kind, is getting very impatient."

It must be a hard heart that can hear such a story as this unmoved. But we are not dealing with poverty or the causes of distress; and we have no great admiration for that charity which makes beggars: but these are times and circumstances when those who have means should put aside their political economy and think merely how to lessen the misery before them. Our more legitimate object and real purpose in mentioning such cases is to show that we have poverty of the intensest kind placed under the worst circumstances, and so to show the need of permanent improvements.

The supply of pure water to the poor in their own dwellings on *Sundays* and other days is a matter of paramount necessity; they should not be obliged to "hunt about" and "beg" for water. Let us hear what the people say in another quarter, namely, Middle Searle's-place.

"The people are forced to run about and beg for water; that they do; I have to do so myself, so I know. Very often the people do their cleaning on the Saturday night: it is now twenty minutes past five, and by half-past seven this evening we shall not have a drop of water." The south side of Searle's-place, which contains many houses, thickly inhabited, is "dry," as the people express it, on Sundays. On the opposite side of the way, the people are better off, the landlord having provided large and substantial water-tanks above ground, properly covered.

In the neighbourhood of Searle's-place, Clement's-lane, and the little alleys running in various directions, the filth is very great, and here fever is a constant visitor. In one court, occupied by a dealer in fancy dogs, and some other persons, there were two untrapped gully-holes; the people had complained in vain to the landlady to have these holes properly seen after, as they were nearly poisoned, and the landlady supplied them with two pieces of wood, imagining that this would be sufficient to stop the escape of the poisonous gases. In the house of the dog-dealer, some time since, the drain became stopped; a young man, the son of the occupant, at that time in perfect health, opened the drain, and in a few days he died of a raging fever! The death of the son killed the father.

The authorities in St. Pancras are active. Heaps of refuse have been removed in various quarters, and meetings have been held to consider sanitary matters. Lime-washing is going on vigorously at Agar-town; and although the measures taken are not yet adequate to the occasion, they show a praiseworthy intention. This last-named place, Agar-town, we cannot leave yet. No words would be too strong to describe the miserable condition of this disgraceful location. The houses have been *planted* here without any thought of drainage, or of any other arrangement necessary for health: it is as ill-considered as some of the *extempore* towns in the neighbourhood of the gold diggings. Fever is raging here, and, as the medical attendant of the district says, "What is the use of giving medicine when such a condition of things exists?"

Look at Cambridge-terrace. All the refuse water here remains at times on the surface, for the small pipe-drains are constantly being



THE WATER COMING IN AT AGAR-TOWN.

choaked. There are open cesspools here. After a heavy shower of rain the water floods the houses, there being no sufficient channels to convey it away. The whole of the surface of the ground is impregnated with impure matter. In the winter time, the roadways, in the centre of the streets, are many inches deep with soft mud. A few days since, at the time of our last visit, pools of stagnant water were collected here, and some black as ink, having on the surface a ghastly bloom, something like the effect produced by the mixture of coal tar with water. This water passes below the houses of the people, where it remains from year's end to year's end.



Here is Victoria Cottage, with the black, poisonous stream passing through the garden, below the boarding of the house. In this and the houses adjoining the people took up parts of their floors to show us the accumulation of filthy fluid below the beds of themselves and their children. Shall we find a churchwarden to defend this shocking state of things?

In another part of this neighbourhood, shown in the engraving, the people were anxious we should see it between four and five o'clock in the afternoon, when the water comes in. As soon as the small water-casks belonging to the houses round about became full, the overflow passed into the court and places adjoining; the water collected to a considerable depth, flowing into several of the houses, and the people were obliged to pass from place to place on stepping-stones; one man said that he had 2 feet of water in and below his room, and that snails, spiders, and other vermin were plentiful, "crawling over his clothes at night."

In one part of Agar-town, close to the wall of St. Pancras graveyard, is a water-tank sunk into the ground. We had an opportunity of looking into it, and found it to be built only in the ordinary way with bricks.

Notwithstanding the daily overflow and collection of water, the people in Agar-town are "dry" on Sundays. Can it be necessary to say anything more to show how much interference is needed in this miserable district?

The churchwardens of St. Giles's-in-the-Fields, Messrs. C. R. Rowland and T. Hunt, have taken upon themselves to state in the *Times*, that the account which we gave in a recent article (*ante*, p. 601), to the effect that a cry of fire being raised in the Coal-yard, Drury-lane, one of the persons living near complained of neglected condition, and thanked God there was a fire, as she would then get some water—is "very inaccurate;" and they go on to prove this by asserting that "the spot in question happens to be better supplied with good water than perhaps any locality in London," and that there are "within 20 yards of this very house no fewer than six public pumps of excellent water, five of which are in good working condition," –logic which would entitle them, if the matter were less serious, to be reckoned among the useful machines to which they allude. It can scarcely be necessary to say that the account is strictly and literally accurate; there was no water at the time in the receptacle, it did begin to run into it when preparation was made for the fire, and the expression, feelingly uttered, was heard by several persons. The inference drawn in *The Builder* –namely, that the inhabitants must be ill supplied with water when they thank God for a fire—might have been questioned by Messrs. Rowland and Hunt: their denial of the accuracy of the account is wholly unjustifiable. But what will be thought when we say that of these six "public pumps," thus vaunted of by the churchwardens, two are within the enclosed premises of the almshouses adjoining, one is in an ironfoundry (where, as they told us on the spot, the neighbours have no business whatever), the fourth is altogether out of use (not to be called a pump), and the fifth is in a neighbouring court. There is one small broken pump at the back of the house, to which our statement referred, communicating, not with an ever-gushing spring of pure water, as the churchwardens' letter would make people suppose, but with an underground tank in most doubtful position, and which has not been cleaned out, if one of the inhabitants is to be believed, for these last ten years.

Whether it was water to make clean with or water to drink for which the woman was so anxious that she thought a supply of it cheaply purchased by the conflagration of a house or two, we need not now inquire. Messrs. Rowland and Hunt evidently think that water cannot be wanted by the poor for any purpose but the latter.

The miserable condition of the filthy place in which this pump stands—called King's Arms-yard—is but feebly set forth in the statements we have published. Here about a dozen residences, in a sort of gallery formed over stables, are ranged around what has been one immense rotting dung-heap. We say "has been," because some efforts are now being made to improve its condition. When we last went there men were carting out of it a mass of decomposed filth, the smell of which was scarcely endurable, and "not before it was needed," said one of them, with a shake of the head, which seemed to mean a sort of apology for our journal. Close to this spot, the approach to which from Drury-lane has now, appropriately enough, a coffin-maker's shop on each side, the great plague of 1665 broke out, and here up to this moment of writing, neglect, ignorance, and *laissez faire* prepare the way for a fresh pestilence. Most deeply is it to be regretted that at such a time as the present men should be found to lend the weight of an official position to obstruct endeavours to obtain improvement in the neglected portions of this two-sided metropolis, instead of giving their earnest aid, as they should do, in furtherance of them. The officers of St. Giles's-in-the-Fields do not

come before the public with clean hands. When the shameless proceedings at their graveyard in St. Pancras-road were set forth in the journal they now seek to discredit, it excited a burst of indignation which they would gladly have lessened by denial. This, however, they found was impossible, and they were forced to retain the opprobrium. Messrs. Rowland and Hunt make patronising mention of "our voluntary nuisance-seekers," which sounds much like a scoff. Let us tell those gentlemen that investigations into the condition of the neglected dwellings of the London poor will not usually be pursued as a matter of liking; it is too distressing and laborious a work for that, and we had hoped that the time was gone by when painful labourers in this sad field were repaid with a taunt. The effect of an examination of an abominable neighbourhood now being cleared in the vicinity of Portman-street was so prostrating as to induce a series of fainting-fits a few days ago in an otherwise strong man.

It is to be feared that we are approaching a time of trouble, and we would most earnestly implore all who have the power to aid in obtaining for the poor the advantage of a plentiful supply of water, good drainage, and room to breathe in. We feel entitled to speak, because we have seen, and only those who do see can have a just idea of the frightful hotbeds of disease and death with which London is spotted.

THE ARCHITECT'S RESPONSIBILITIES.

It is no new or much-disputed doctrine that the boasted stronghold of British liberty, the wisdom of a jury, is much more of a mythical tradition than a practical fact; but it is rarely indeed that a subject so entirely beyond the comprehension of the haphazard twelve has been so unhesitatingly tackled and so uncompromisingly adjudicated upon as in the case of the Strand accident the other day; and it really seems high time that some modern modification should be devised for this antiquated system, whereby the most complicated questions of technical responsibility and scientific skill are referred to the irresponsible decision of a dozen shopkeepers, selected, as I am told, by the beadle of the parish, at his will, from among the number of those who have neglected to oil the "parochial" palm with the customary *douceur* for exemption.

No doubt Mr. Abraham brought the preposterous, but most annoying, verdict upon himself by the ill-advised anxiety he displayed to show that he had taken great pains with the business; and it is no wonder that, with such materials as a coroner's jury is usually composed of, he found himself at last in the position of having proved too much, and thus proved his own error. In the next step of this unfortunate affair it is to be hoped that he will take a widely different course.

But be this as it may, there is no doubt that we architects must now clearly perceive ourselves to be by coroners' law subject to very serious responsibilities, unless we take this occasion promptly and energetically to pronounce what responsibilities we recognise ourselves to undertake and what we do not. This verdict will become a most dangerous precedent if allowed to pass unchallenged. Once established as a principle, it will become a matter of form to hold the architect liable for every accident that happens; and we know not which of us may be the next, and how speedily it may be, to stand upon his defence, almost for his life, in a question of scientific argument before a parcel of men who know no more of algebra than that it is, perhaps, something to eat, or of Euclid, than that he may have been a Caffre chief, or may have been a Dutchman.

I will venture to uphold the broad principle that the architect, in his proper capacity (beyond which he ought never to travel), is not in any case responsible for damage either to property or to person, arising out of the operations of the builder, but that the builder is wholly responsible for everything of the sort. And this ought to be the more particularly urged at the present time, when builders are ceasing to be practical workmen, and becoming no more than mere capitalists and speculators,—simply *contractors* in fact, as they are very properly called. In the present instance it is worthy of remark that the architect testifies to his having never seen either of the contractors, Messrs. Lucas, upon the premises on any occasion, from first to last. Most of us will agree that Mr. Abraham acted very unwisely in suffering his work to be done in such a way.

The scientific functions of the architect I hold to be these,—To devise the entire design of the structure; to transmit it, with proper explanations and directions, to the builder; and, relying upon him as a person practically competent to perform the work in every respect properly (for without this what are the builder's functions?), to make occasional inspection of its progress, with respect to nothing more than its being performed in strict fulfilment of the contract. He repudiates all possible liability in respect of damage to neighbouring property, by specially stipulating in his specification that the builder shall take that responsibility upon himself; and if he do not specifically provide that the builder shall be similarly responsible for the safety of his operations in respect of life and limb, it is because he never dreams of any one but the builder being held responsible for a matter so peculiarly his own act, involved in the mere mode of his performing his work. Moreover, there are not wanting builders to maintain and architects to admit, that as every man knows his own business best, so the builder is, or ought to be, a better mere *builder* than the architect can be; and certainly a responsible and experienced builder would be justified in treating any interference on the part of the architect with such a thing as scaffolding or shoring as a pragmatical impertinence, except in a case where such a matter may constitute an important scientific problem, specially devised, as in the case of the centering of a bridge or the framed scaffolding for some extraordinary operation. In other words, I may say that the architect is not responsible for any operative detail which he has not specifically designed, represented by drawings, and described minutely in the specification; nor for anything which the builder does merely for his own purposes. And accordingly his supervision of a work is of a nature to correspond: it is such a control as he may exercise, no matter what the distance may be: it is no position of every-day direction to the workmen,—that is the province of the builder: it is no more than an occasional examination of the work during progress, to correct any misinterpretation of his design, or check any imposition which may be attempted upon him. If Mr. Abraham (supposing him to have kept within his proper province) be responsible for the manner in which Messrs. Lucas shored up the old wall, or the manner in which they undermined its foundation, he must be equally responsible for the manner in which they might build their scaffold or load it, or raise the roof, or fix a ladder, or run up a block of stone with a pulley; and if the work had been at a distance of 500 miles instead of a street or two, and he had never seen it at all, his responsibility must have been the same. I do not mean to say that the architect had no right to see to the shoring and underpinning: on the contrary, I admit that it would be his duty to point out anything which he might casually perceive to be in error; but he ought to have carefully avoided taking upon himself any appearance of responsibility in respect of the operations of the builder for his own purposes: in other words, he ought to have kept strictly within the province of occasional inspection, and to have left to the builder all responsibility connected with every-day supervision. In one word, the architect, as the agent of the "building owner" (his only capacity in the business), assumes all responsibility attached to the design of the construction; but the builder, as the practical contractor for the work, takes all risk attached to his manner of carrying it out; and if Mr. Abraham took charge of the details of shoring and underpinning an old wall, he stepped beyond his province as architect, took the place of the builders, and got thrown by them into the liability as a return. If Messrs. Lucas were not competent to take personal responsibility in such a matter, it was the architect's duty—not to relieve them at his own expense, but authoritatively to warn them of their risk; and if it be the case that the employment of so many counsel in this case is to be taken as the result of a resolution manifested by the contractors to evade their just liability as tradesmen, and let the loss fall on whom it might (for I presume it is not the crime of manslaughter, but the pecuniary damage, which is the *gravamen* of the matter), then it behoves architects to be very careful as to whom they commit themselves with as builders, if there are some who honourably acknowledge their obligations, and some who do not. If Mr. Abraham were a young man beginning life, this misfortune would, in all probability, have utterly ruined him.

The architect *volunteered* his evidence: Messrs. Lucas were otherwise and better advised. It is Messrs. Lucas who ought to have volunteered evidence, and exonerated the architect, if necessary. Their pleading was as plain as possible. "We are the legally responsible parties: that we were not criminally culpable we prove by evidence that our foreman in charge was a very experienced man: that his error was mere human fallibility, we prove by his own death as the result, although were he more seriously to blame he is now beyond your censure: we acknowledge the assistance of the architect to the fullest extent compatible with his professional duties, but notwithstanding all, we have to deplore the sad result, and as honest tradesmen taking a profit for a risk, we must bear the pecuniary loss."

To prevent all mistake in future on the part of coroners' juries, I am inclined to recommend that our specifications should not only provide that the contractor shall bear all responsibility of damage to adjoining properties, but also specifically, that in all cases he shall take all risk of injury to life or limb arising out of his performance of the work. Such a clause in Mr. Abraham's specification would have put the saddle on the right horse at once; but we live and learn.

R. K.

THE CLOCK FACE PROBLEM.

The query about the clock at Havre with a dark dial and illuminated hands, suggests to me that it is time some symptom of "progress" reached that venerable symbol the dial. For at least a century past, from St. Paul's campanile down to the "horizontal lever," face answereth to face. Surely what is repeated so many thousand times a year must be something very perfect, a very paragon of sense and taste, if it be true that "practice makes perfect, or, in other words, that doing a thing *often* leads towards doing it *right*.

Well, let us see. Here is a sort of semaphore of two arms, a thick and a thin arm, whose combined positions alone, without other marks to guide us, will express, without ambiguity, twelve times as many things as we can distinguish positions of the longer arm; and I believe the most inexact eye can distinguish twenty-four of these. We have, then, a character of *two strokes* capable of so varying as to express *two hundred and eighty-eight* meanings, which, I believe, quite out-shortens all stenographic inventions, and would furnish telegraphs a hint for considerable economy of time (*i. e.* of wires, for time is copper in this case), to say nothing of John Chinaman's future dealings with those *impedimenta*, his real oppressors, the 30,000 ideagraphs, tougher than Tartars. So far, the two hands revolving on one centre, and the convenient period of each, are vestiges of a deeply-considered and sterling design.

But we want, for ordinary purposes, to distinguish twice and a half the above number, viz. 720 periods in the half day. That is the most that any *public* clocks, I believe, attempt or profess; and it requires such further aid as may enable the eye to separate sixty positions of the thin hand, though twelve still suffice for the thick. Now the most inexact eye discriminates without hesitation *five* divisions in a given space, so as to tell whether an index has advanced one, two, three, or four fifths of the way from one mark to another. Therefore *twelve points* round the dial are amply sufficient to mark the sixty positions of the thin hand, as well as to fix perfectly the twelve of the thick one, which (though quite distinct when it is alone)

might tend to be confounded in the eye by the interference of the other index.

Now the distance at which you can read such a character must, any one can see, be just proportioned to the length of the hands (always supposing their effective width proportioned thereto), and the usefulness of a clock is as the area over which it can be read; *i.e.* as the square of the greatest distance you can read it at; in other words, as the square of the hands' length (the *shortest* hand's, if they are of different lengths), or the area of the circle the hand describes. Where is the reason, then, in occupying at least half your available space (half the *radius*, or *three-fourths* of the space in one familiar face—I think that of St. Mary-le-Bow) with a set of clumsy hieroglyphics, elongated, like a marine-store-dealer's alphabet, to the very limit of legibility, partly inverted, *never read*, and whose positions every one knows, because, if they did not, it would take a serious study to decipher them as they stand? But to make room for these, our venerable symbol has its effective strokes shortened about one-half, for the additional length of the minute beyond the hour hand is of no effect whatever but to confuse the figures more. Thus the utility of the clock, the area over which it is legible, is reduced to about *one-quarter* of what its size naturally admits,—nay, one-quarter of what it would be if it were *all hands*, without the twelve fixed marks, which we have seen the eye requires for moderate exactness, but which yet are more than it can get from the present dial, unless near enough to see the details of the outer graduated circle; for our elegant hieroglyphs are far too large to be of any service as marks.

But the climax of absurdity is our illuminated clock, retaining all this in black on a luminous ground, which, the brighter it is, the more it encroaches upon, and, to the naked eye, *eats up* its markings like the sun his spots, by irradiation on the retina. Advertisement-printers and sign-painters have discovered, well nigh ever since those arts became profitable (before the now defunct "tax on knowledge," *alias* lie-tax, began its wholesome but infinitesimal operation), what proportions in the parts of the Roman letters would enable them to be read at the greatest distance, and how much thicker their strokes required to be when the ground greatly exceeds them in brightness, or how much thinner when themselves bright on a dark ground. But all this has never reached the stagnation of borometrical art; so the luminaries that we set in the firmament of Portland or Kentish rag, to rule the seasons of the night, however far the architect may permit them to shine, for at least nine-tenths of that range, or ninety-nine hundredths of the areal space they pretend to benefit, mock the inquirer with a round unmeaning disc of fire, like the moon without the man in her. Such an arrangement as your querist saw at Havre would be intelligible almost as far as visible, certainly several times farther than our "*negative*" (as the photographers would say) *fac simile* of it. But remove its twelve useless hieroglyphs, that at a distance would only make a muddle of the whole, and the positions of the hands will be seen still farther. Instead of removing the figures, reduce them small enough to serve as *dots* (for I suppose there is a talismanic necessity for their shapes, whether visible or not), and it will be intelligible to single minutes fully as far as these dots are visible, and this though contained in little more space than the plain part of the present dial. Enlarge this, then, to the diameter of the original dial, and you about treble the area of its usefulness once more; how many times altogether beyond that of our ridiculous manless moon, I will not venture to reckon.

So, having made out, I conceive, a clear case of stagnation against the dial-makers, and of utility in this problem, let us proceed to your querist's mechanical difficulty. Substitute for the hands two transparent or perforated discs (they need not at all approach the weight of glass ones), each divided into many (say twenty) concentric ring spaces of equal width, alternately opaque and transparent (or pierced), but so that all those which are opaque in one disc, shall be transparent or open in the other. Remove as much of each opaque ring as shall leave the proposed form of a hand in each disc, all transparent or open. The two together will then stop all light, except in these forms of hands, which will each appear composed of transverse bars, alternately light and dark, as numerous as you please. When they overlap, the overlapping part being doubly luminous, will preserve the outlines of *both* complete, the want of which in every other possible construction of hands, is no small source of confusion when overlapping. At a distance too great to distinguish the separate bars, the hands as well as the overlap will appear *uniformly* luminous, though only half as bright; and this effect, if preferred, may be retained at all distances by simply bringing the ground-glass dial from behind to *before* the moving discs, whose bars or rings must, in section, be triangular, with edges forward and backward, and their flat sides together, as near contact as may be.

G.

P.S. The method described by Mr. Bennet doubtless supersedes that suggested by me for managing the luminous hands, as the moving parts are much lighter. Still, however, both are equally open to the objection of enormous waste of light, as enough must be manufactured to give the whole dial that degree of illumination which the hands really have. Of a beam filling the whole dial, all that is not intercepted by the hands is, in my plan, stopped by the opaque parts, and in his, sent up to the sky. I would submit to him, therefore, whether it would not be better than either, in large clocks like that at Westminster, for hollow hands, with fronts of opal glass, to carry the burners in their own interior, the gas being admitted into their axles as steam into an oscillating engine, and ignited by electricity, and the products escaping and air entering all round the edges of the hand. My argument for dispensing with the figures remains untouched, and I contend that they should always be replaced by twelve *naked* flames, no larger than to be just visible as far off as the eye can separate one from the next. If there be also jets for the sixty minutes, they should be a distinct circle *within* this. To make largest that which is for the nearest readers seems absurd, and they must not be in the *same* circle with the twelve, or all will tend to blend into a continuous ring. A contrast of colour in the two hands would be an assistance; the minute-hand *red*, which is visible farthest, and the hour-hand *green*; but not too much colour in either,—not much more than in a double star. Besides this, the thinness of the minute-hand should be compensated by brightness, equal quantities of gas being burnt in each.

G.

SCRATCHES ON THE ROAD.

PESTH, VIENNA, AND THE "CAMP."*

In order to see Pesth, I started on board the steamboat and proceeded down the Danube, but the voyage for about ten hours was the most uninteresting possible. I learned from a fellow traveller that it was a good specimen of the Ganges, so I learnt something by illustration. The only river that I know like it is the worst part of the Scheldt; but my national pride was flattered when I thought that speeding over this dreary part of this gigantic river was the result of English enterprise; and I enjoyed the companionship of a gentleman who was going to Pesth to mark the progress of vessels that he is building there; nor was my pride diminished when I was addressed the next day by an Englishman, who was the superintendent of the works, wearing the royal uniform of this country. At Gran, about forty miles from Pesth, the river assumes quite a different character, very much like that of the Rhine. There is nothing interesting, except for its political circumstances, in Pesth: it seems a busy, active sort of a place, containing some very good buildings on the quay; those destroyed at the time of the revolution being rebuilt. The great lion of the place is the suspension bridge, built by our countryman Tierney Clarke; and a magnificent structure it is. You, of course, know the proportions, so it is not worth repeating them. I went to see the fortress which was the subject of such fierce contention in 1849: it is now restored to its original state, and in the centre of the square has been erected a monument to General Hentzi and the 418 brave fellows who then fell for "*Kaiser und Vaterland*." The former will be admitted, but the latter part of the proposition will be disputed, at least by many in London. It consists of a simple Gothic pinnacle of bronze, under the canopy of which is a figure of a fallen knight, and above him a figure of Fame, both gilt. On the sides are the names of the 418. The great marvel and subject of every one's conversation was the discovery of the Hungarian regalia, which had been taken away by Kossuth. Of course you have heard of this and all the particulars, but the story, as told me here was, that an old man was dying, and he sent for a priest to perform the last offices of the church, who, upon hearing that he had something political to communicate, sent for the "*Reichshauptman*," or military governor, who arrived just in time to hear the old man say "the Hungarian crown, it is here," and then he died. The governor commenced a search, and the regalia were found buried near the spot where the old man breathed his last. There is to be a grand *fête* on Thursday at Pesth, when they are to be deposited in their usual place. There may be a question of the policy of making this demonstration amidst the discontent that prevails there.

The most splendid thing in Vienna of modern production is Prince Lechtenstein's palace. It has been fitted up by an English architect, Mr. Desvignes, in the most gorgeous style, at a cost of 60,000*l*. The entrance is by a hall and well-proportioned staircase of white sandstone, which has an appearance of coarseness, especially when the beautiful marbles that adorn the apartments are seen. You pass through three reception-rooms of excellent proportion, but simply decorated with white and gold and with amber furniture. These introduce you to the private and state rooms, which are as rich as marbles and gildings can make them. In the ball-room is an effective and valuable contrivance, which consists of three large doors, each turning on a centre-pin, and at the back of these is a large plate of looking-glass; so that when the doors are reversed, the reflection increases the size of the room, and extends its brilliance.

The covering of the walls consists of the same silk as that of the furniture: it is very rich in its character, and must be a great trial to the ladies' dresses. The parquets are of exquisite pattern and workmanship, and tend to the completion of what, as far as my experience goes, is the richest specimen of domestic decoration to be found here.

The Viennese appear to be a people much cramped in their mind, and display that want of energy which is shown by a boy who has had too much parental control, and whose tastes and opinions have never been allowed to develop from their own force. An immense amount of discontent prevails, and I have been astonished with the warmth of the expressions used against the present state of things. Everything is very dear. The people are enormously taxed: a royal decree has just been issued, enacting an additional land-tax of 10 per cent. and withal a paper currency, without any control to its issue, or security for its conversion. Every person is obliged to carry a pocket-book in which to keep his notes, as from the smallness of the amounts for which they are issued and the poverty of the government, they are made of such flimsy material that they would soon wear out in the circulation. I have preserved two, in the last stage of decay, of ten kreutzers each (fourpence), to present, on my return to England, to a friend of mine who was an eloquent advocate on the side of the Anti-gold League; and with them I propose to give him a few statistics, that I hope will induce him to hope as I do, that the time may never come when those mysterious old gentlemen with the quaint signatures may promise to pay to Mr. Matthew Marshall such small sums as those above mentioned. By the way, I perceive that these same signatures are now printed with the notes. I hope this does not arise from these gentlemen getting tired of making promises that are so easily fulfilled.

The Prater is much larger, but has the nearest resemblance to Hyde Park and Kensington Gardens I have met with on the continent. In the retired parts of it are deer and game, and this will give an idea of what a quiet retreat this must afford in a great city. I went to the Opera several times. There is a new tenor singer of the name of Steger, who is much estimated by the Viennese. Lanner and Strauss are

* See pp. 503, and 516.

no more, but their sons continue to preside over their bands, which are to be heard either in the Volks-garten, or at some of the drinking and smoking houses almost every night; where their strains enliven and perhaps prevent the minds of the visitors lapsing into that lethargy which an absence of intellectual occupation must produce; the excessive smoking, to which they are the most abject slaves that ever were witnessed, must entail that enervation which prevents the ordinary illustration of character being anything but that of disregard for anything else than their own indulgence. I paid a visit to the royal stables, that are under the direction of an Englishman of the name of Brough; our countrymen are very much sought after on the continent to fill this post. The stables contain about 450 horses, which for a portion of an establishment is moderate in a country where they are reduced to give an unguaranteed note for fourpence.

I was not particularly struck with the public monuments, but there is a circumstance about them which I should be glad to see adopted in London—that is, the bases, plinths, and additions are made of polished granite. On that of the Emperor Joseph II. in addition to this there are four corner circular columns, to which are attached bronze medallions; and on that of the Emperor Francis is a fanciful bronze moulding, which contrasts very well with the granite, and gives it a very agreeable finish. There is a miniature copy of the statue of Joseph to be found in the grounds at Schönbrun, which is more pleasing than the original, as it appears to possess more life and vigour; and the near hind leg of the horse is free, while that of the large one is supported by an attached block.

My attention has been called by an Austrian to a letter in the *Times*, signed "A Scotchman," in which the writer vindicates the authorities from the charges of annoyance. There is no doubt that the government have relaxed a great many of the most rigid regulations—such as personal attendance at the police office—but still it is not so free from vexation either to Englishmen or natives; and the consequence is, that I have several times heard the "Scotchman" denounced as an Austrian spy, and those who thus accused him were without doubt sincere in their belief.

From Vienna I went to Olmütz, distant about 130 miles, to see the camp of 50,000 men there formed. It was on the same day as that on which the emperor was announced to arrive, and being some two or three hours in advance of him, I had a good opportunity of observing the preparations that had been made for his reception. You have sometimes written about decorations and pageants, and you would have been amused to see the way in which the inhabitants had improvised the ornamentation of the town in honour of the kaiser. Nearly every house had taken down the curtains, poles, and cornices, and suspended them from under the window-sill: thus you saw red, green, and blue moreen, and in some cases dimity, festooned with muslin and cords; in fact, showing that the arrival of his Imperial Majesty had partially caused his liege subjects "to turn their houses out of window" for an ovation. There were two columns of glazed calico, fluted white and red—the colours of Moravia—encircled by some evergreens, and some black and yellow flags, the colours of Austria Proper, of the same material as the columns, and this was all beyond the curious domestic display just mentioned.

His Majesty was to lodge in the palace, which is in a square called the Bishof Platz, and here I found a company of infantry with their band, and a number of staff officers. About an hour and a half after he was expected, there was a stir among the soldiers, who "presented arms," and the band commenced playing the National Anthem, and his Majesty entered the square in a carriage and pair, in a way that convinced me that he had been closely studying Bourienne. There was the ghost of a cheer, which was a feeble contrast to the unanimous shout of welcome that I recollect to have heard on a bright and glorious day at Chobham; but then that was given by voices that are not kept in subjection by 400,000 swords and bayonets.

Instead of going into the palace at once, he descended from the carriage and walked in front of the line, and called out in a loud voice "*Lassen sie schuldern*," "Let them shoulder arms:" this order being obeyed, he shook hands with the officers, a little to the astonishment of the captain, as it appeared to me, and bowed to the drum-major, who was literally "bearded like the pard," and who seemed quite overwhelmed with the condescension. Then, having walked about for some time, he entered the palace. I have not seen so great a histrionic display since I saw that renowned comedian, Mr. Gomersal, perform the part of *Napoleon* at Astley's, in the annual piece, the "Battle of Waterloo." I remember well his entry after the same fashion, and after taking a pinch of snuff, which was a great point in his interpretation of the *rôle*, as the critics would say, he was wont to exclaim, "Let my brave fellows repose."

In the evening there was a grand illumination, with which I was much struck for its uniformity and unanimity, every window seeming to contain the like number of candles, and which I could not understand, as I thought there must be some discontented or perverse spirits who would not be inclined to "light up." On expressing my surprise at this, I was told that the police give a gentle hint to the inhabitants of what would be required of them on such an occasion; "and, moreover," added my informant, "the K. K. Apollo Company (like Price's Patent Composition) is an *imperial spec.* which must be benefited by the consumption of so many candles at forty-eight kreutzers the half-dozen."

Two bands paraded the streets, and one performed before the palace the whole of the evening, and perhaps when the Emperor gazed from his window and saw the lights and heard the buz of the many voices, he fancied he reigned over a happy people.

In the morning, about half-past five, I was awoke by the band of a regiment which was marching in front of the hotel. This was a signal for me to rise, as the camp operations were to commence at seven. The encampment is made about a mile from the town on an extensive plain, with scarcely any undulation for between ten and twenty miles, at which distance rise some pretty mountains, giving a good background to the view.

By the kindness of the young Count Herberstein, who is a lieutenant in a regiment of Lancers, I was enabled to look at the arrangements. All the horses were picketed—not in stables, as with us. The only objection to this, the Count told us, was, that in the night the horses got loose, and they had lost several from the injuries they had received. The horses were of every variety of colour, although there are some regiments where there is an approximation to one. The men were lodged in small tents formed of two uprights and a cross-beam, over which was thrown the canvas, open at one end. They certainly did not appear to my eye half so large as those used for our own men, but they were made to accommodate eight. Some of the infantry regiments had larger circular tents, which were made with the top canvas projecting over the sides, forming a good-sized eave, under which was dug a trench for a drain. These were intended for thirty-three men, and they appeared to afford much more comfort than the small ones; but whether the greater difficulty in "pitching and striking" these render them less available for the purposes of war, I must leave those who are competent to decide.

The kitchens were all built of brick, the ground sunk about a foot for the fire, the opening to which was at one end, and at the other was the chimney. They were about 6 feet long and from 3 to 4 feet broad. At the top were holes, into which were placed the pots, which seemed to fit quite tight. As there seemed to be nothing cooking but a "*pot pourri*," this sort of apparatus might do very well; but with our men who cook in a different manner, it would, perhaps, not be quite so convenient.

I was most struck with the dilapidated condition of the various trappings and the seedy-looking appearance of the men, a sight that would fill Lord C.—of whom it is said, that he is never happy without he is up to his eyes in pipe-clay and buckles—with the most intense horror. Then the indolence of the soldiers appeared to me so remarkable. All the cavalry have leather round the bottoms of their trowsers for their preservation; and I saw one man in the act of brushing these, which he did after this fashion: he put his foot on a stool: with his left hand he held his pipe, which he continued to smoke, and with his right he slowly and mildly attempted to polish his extremities with an implement little larger than a toothbrush. The infantry were dressed in their fatigue-jackets, which are made of something akin to sacking, and among these the *chaussures* were in a most pitiable plight; but I suppose, with all the inefficiency in the way of attire and accommodation, they would kill with an alacrity quite equal to the best clad and the most sprightly looking.

The camp seemed to excite little attention, as there could not have been more than a hundred people altogether to witness the proceedings, but I expect that the number would be very great when the Emperor of Russia was present. Whether it was owing to our being foreigners, or that our costume was better than the rest of the spectators I do not know, but the police certainly showed us great favour, and allowed us to approach much nearer than others, whom they drove back in the most surly tone.

The Emperor arrived about half-past seven. There was a rostrum erected in the centre of the field, which he ascended, and after taking a general survey with a glass, he mounted his horse, and the infantry were put through certain evolutions, and ultimately brought to a wood, from which, I presume, they were attempting to dislodge a supposed enemy. While busied about this the Emperor left them, and returned to his tent, for the purpose, like a true Austrian, of having a smoke. Having finished his cigar, he again mounted, and proceeded to the heavy cavalry, which he led by a variety of movements to aid the infantry. Whether he "got out of the wood" I cannot say, as from the distance these manœuvres occupied, and the telescope I had not being a very good one, my eyes got tired with straining, so I returned to the town to pack up and start in pursuit—which is more to my taste—of those arts which, though justly brought to the honour of heroes, are much more distinguished in the illustration and adornment of peace.

F. S. A.

BUILDERS' BENEVOLENT INSTITUTION.

THE sixth anniversary dinner at the London Tavern is drawing near, and we are glad to see a goodly list of stewards. The day appointed is Tuesday, 25th inst. Mr. Rolt, M.P. will be in the chair, and it is to be hoped that both the trade and the profession will rally round him.

LAMBETH BATHS AND WASHHOUSES.

WE this week present a plan of this establishment, alluded to in a previous number (p. 440, *ante*) on the occasion of the opening of the great swimming-baths. A large proportion of the slipper-baths have since been completed, including those arranged in the galleries shown in the view of the interior of first-class swimming-bath.

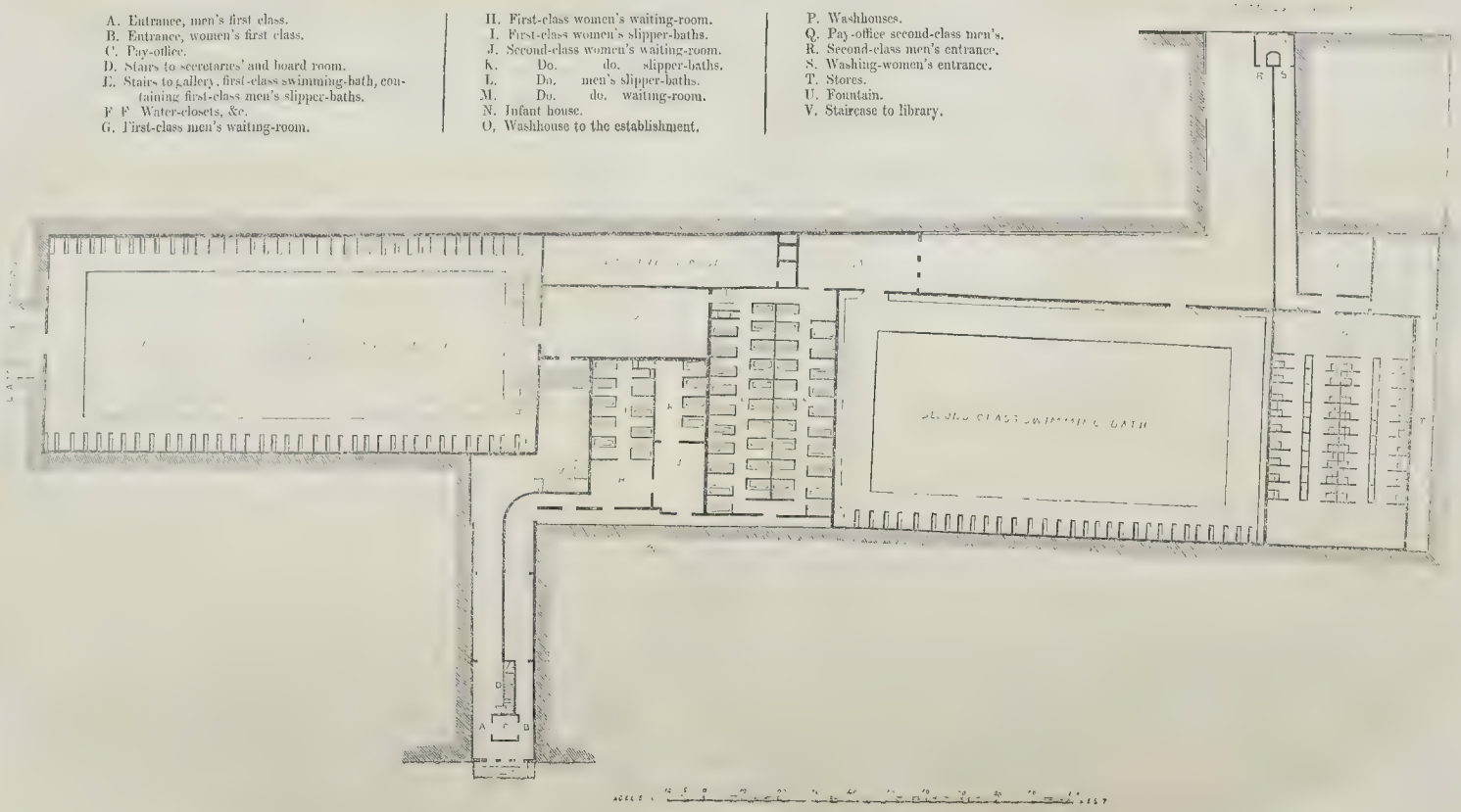
We congratulate the directors of the company (the vestry having declined to carry out the Act), who have taken this sanitary matter in hand, on the success of their undertaking, as we learn they have had a very beneficial season, and that the dividend is likely to be satisfactory,—a matter of serious consideration in the well-working of all such establishments.

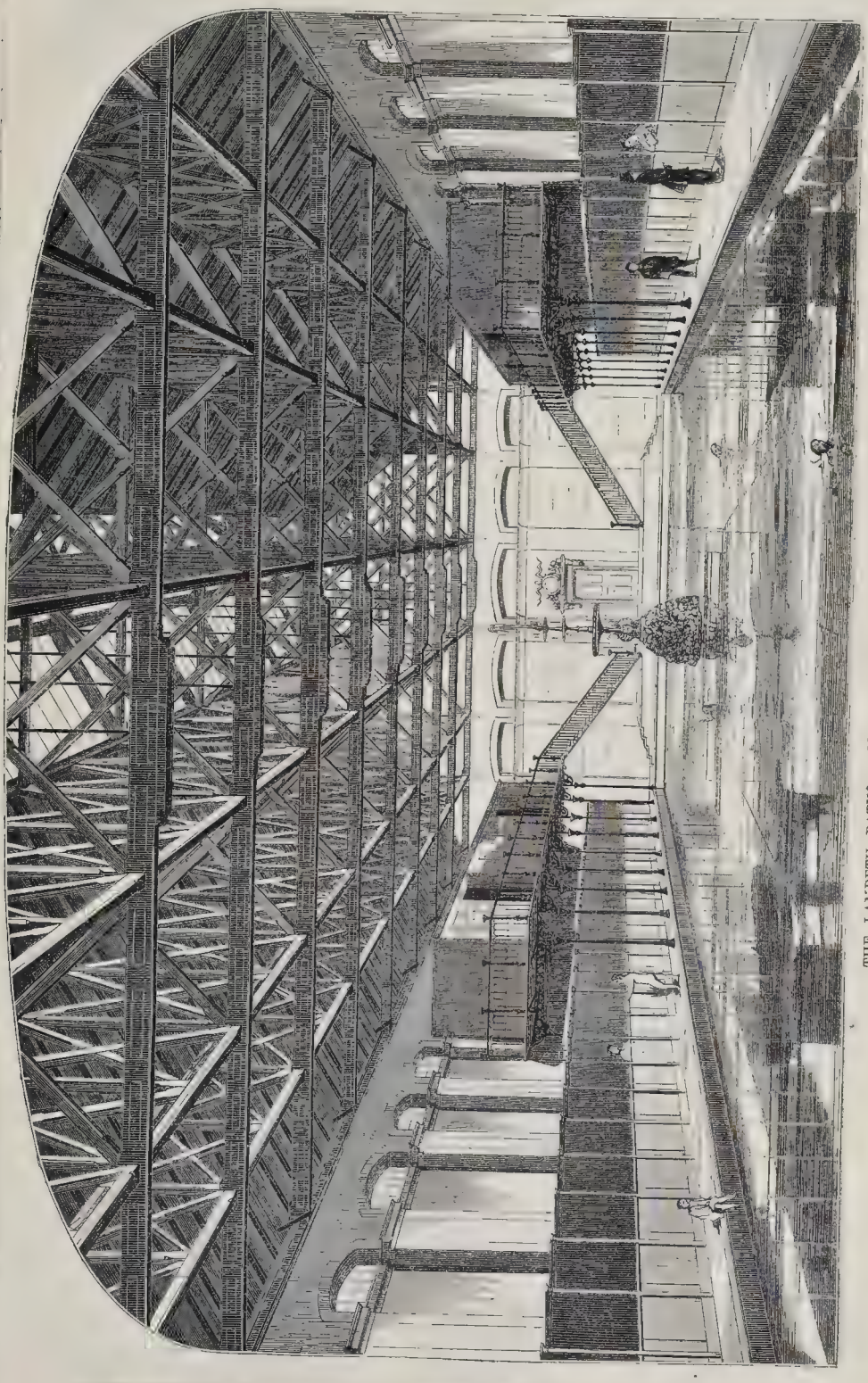
The Lambeth baths and washhouses will be the largest establishment of the kind, we are told, yet erected. The roof is painted white, with red lines, and is lighter in effect than it seems in the view. The steps, enclosure of baths, &c. are of slate; the slipper-baths of porcelain. The plunge-bath is lined with white tiles: the water in it, 5 feet 2 inches deep at one end, and 3 feet 2 inches at the other, is kept at the temperature of about 74 degrees. There is no steam-engine on the premises: the hot water is made to ascend from the boilers by the descent of cold water into them from tanks above.

The whole works have been constructed under the direction of Messrs. Ashpitel and Whichcord.

PLAN OF THE LAMBETH BATHS AND WASHHOUSES.

A. Entrance, men's first class.
B. Entrance, women's first class.
C. Pay-office.
D. Stairs to secretaries' and board room.
E. Stairs to gallery, first-class swimming-bath, containing first-class men's slipper-baths.
F F Water-closets, &c.
G. First-class men's waiting-room.
H. First-class women's waiting-room.
I. First-class women's slipper-baths.
J. Second-class women's waiting-room.
K. Do. do. slipper-baths.
L. Do. men's slipper-baths.
M. Do. do. waiting-room.
N. Infant house.
O. Washhouse to the establishment.
P. Washhouses.
Q. Pay-office second-class men's.
R. Second-class men's entrance.
S. Washing-women's entrance.
T. Stores.
U. Fountain.
V. Staircase to library.





THE LAMBETH BATHS.—Messrs. Ashpitel and Whichcord, Architects.

COLUMN AT AMMERDOWN PARK, SOMERSETSHIRE.

FULLY to explain this structure would require considerable space and illustrations, and it must be completed first. Until then it would not be in a proper state for inspection, even by those who can best comprehend the principles applied, as necessary parts are left unfinished, or covered up for protection, during the progress of the works.

The ground on which this memorial is placed is supposed to be nearly 800 feet above the level of the sea. The highest point of "Mendip" (six miles off), according to the "Ordnance Survey," being 999 feet. The total altitude of the pillar will be about 130 feet; and the number of steps to reach the floor on the top will, perhaps, exceed 170.

The design may be described as having three principal divisions, viz. the pedestal, the column, and the crystal-crowned enclosure, for a "*panoramicon*," where a company, protected from accident and weather, may at leisure prolong the inspection of an extensive view of an interesting, a rich, and undulating surrounding country.

In making the design, the first considerations were the requirements; the second, substantial construction, according to the materials procurable; and the third, the application of scientific forms of lines and surfaces derived from the inexhaustible source, practical geometry,* the storehouse of the ancient Greeks, for the elements of art, every line of grace, truth, and beauty, having its eternal law. Before a line can be applied it must be known.

A few lines give the general contour and individuality of this building, such that their forms may be seen from a distance, having been chosen; but ornament deduced from the same source, or directed by the same guiding principles, may be added to a great extent. As soon as the design was determined, a drawing-board, more than 100 feet long and 6 feet wide, was made; and on that was described full size, and with the utmost accuracy, the curves to be introduced; and to these zinc moulds and radial rods were prepared before the work commenced. In the foundation there are about 1,000 tons of concrete and stonework; and 1,000 tons, or more, will be used aboveground in solid, close-jointed, and bedded, and externally and internally faced masonry.

Within a square of 40 feet, on an elevated solid foundation, three steps lead to a platform, or surrounding paved walk: the platform, the plinth, and the pedestal, are in outline, octagonal, four long and four shorter sides, or corners, cut off. At the top of the plinth the longer sides are about four times the length of the shorter.

From the platform to the entrance-doorway are the next three steps in the ascent. The plan of the interior of the pedestal is circular—a cylindrical wall around stairs—a surrounding gallery for memorials, with deep recesses in the external walls, to four angle windows, and to the door, with corresponding panel sinkings between these windows and opposite to these parts. In one, fronting the door, is the approach, with another three steps ascending to the iron stairs leading to the top. This gallery space has a superficial area of floor of about 250 feet, an extreme height of nearly 15 feet, and about 1,500 feet superficial of wall surface.

This gallery is lighted by eight windows,—four at the angles already noticed, and four circular windows near the top of the principal sides. In these last will be stained glass, which is prepared with family arms in centre of each,—a window being thus on each side of the external octagon.

Above this gallery externally, towards the upper part of the cap of the pedestal, which covers it, and all other horizontal sections, are circles.

The iron stairs are spiral, winding around a hollow centre or newel, within which the plummet is suspended, and all the work is adjusted from this one central and vertical right line.

As the work advances, the iron steps are hooked on to the newel tube, fastened together by screws with nuts through the brackets, and then fixed to the tube.

When complete, a spiral string of double iron brackets at the outer end of the steps will be united, and extend from foot to head, when, at both ends, it will be fixed to the floors.

An open space of 3 inches to admit light from top to bottom (a tube of light) separates the iron steps from the surrounding stone-work. In this space each step will be connected with the wall by a solid glass ball, of 3 inches diameter, with projecting spindles to enter the stone, and for fixing in a socket on the iron steps.

These glass balls will cut off electrical connection between the iron and the stone, and they will also reflect a degree of light from the dome and from each other, at each step, sufficient to light the way around more than thirteen revolutions.

The cast-iron foot of the newel stands on a bed of thick gutta percha, as a non conductor of electricity, let into the stone foundation; and at every joint of the newel-tubes and steps the same material is introduced for the same purpose, and to prevent any jarring of the iron.

Looking to the exterior, the plinth of the pedestal stands within a square of 26 feet (the corner, as explained, being cut off), except on each side of the door, where it projects, and forms curves and splayed blocks at the ends of the steps, 2 feet 6 inches high, on which are to be placed spheres, cut to show an intersection with cones of 90 degrees apex angle, exhibiting more than twenty distinctly different curves, the "*cardioid*" (heart form) being prominent.

The plinth commences at the surface of the surrounding paved platform, and has one bold hollow, varying each way from a quickest point of curvature to points perfectly flat. This, in different ways, is related to plane and curved intersections of the cylinder, the cone, and the sphere.

A particular form of this character of curve has been selected to shoot off the rain-water from the base, and to harmonise with the lines above.

Each principal front of the pedestal is a plane surface, battering or reclining towards the central axis of the pillar half an inch to each foot in height, each having the same form of outline.

The four angle faces are straight on all horizontal lines, but with carved elevations determined by "cuspidated cissoidal lines"* applied to the principal faces, thus making the eight angles of the pedestal of varying curvature to the height of more than 14 feet.

In the south front is the door, the architrave to which, in outline, is a new curve derived from the cone. This is cut out of one piece of marble.† Over this is one of the circular windows, the architrave to which is likewise cut out of one piece of marble. On the west, the north, and the east fronts are marble tablets of the same form of outline as the architrave of the doorway, with marble architraves to the circular windows above, all identically the same as the one in the south front.

The object of this memorial is explained on these tablets in English, Latin, and French. That in Latin has already appeared in the *Builder*.

The narrow sides of the pedestal face intermediately the cardinal points, and have in each a window, referred to in the description of the interior. The outline of the architrave, also of marble, is proportionably a long echinoidal or egg form, the upper end being of a sharper curvature than the lower, to harmonize with the curved angles of these faces.

The line was drawn full size for the mould by most simple regulated continuous motion, and belongs to a host in variety derivable from the cone, &c.

The mouldings of the architraves, &c. are parts of plane, or deduced from curved conic sections.

The cap of the pedestal is a portion of a frustum of an obtuse cone, only requiring to be seen to be obvious, parts being cut off by eight vertical planes parallel to each face of the pedestal, but projecting over, with drip hollow soffit and bed moulding under, each of these being a particular curve.

Thus the principal fronts of the pedestal are each surmounted by an arched hyperbola as a pediment, and the angular sides by delicate curves of the same character, showing the practical source and application of one of the plane conic sections.

On the cap of the pedestal stands the frustum of an *acute* cone, of 20 feet diameter, which forms with the cap of the pedestal the base of the column, whose shaft is 80 feet high, and the diameter at the top is 10 feet. The profile or entasis is a varying concave curve, formed by a cuspidated conchoidal line.

"Nicomedes," about 200 years before the Christian era, contrived an instrument for describing it. It is now discovered to be a projection of a curved section or intersection of a cone, related to the hyperbola, as the cissoid is to the parabola. The capital of the column has two principal features in the stonework, the neck or bed moulding being in profile the line of beauty,—the true Greek water-line: and the true Greek cymatium, is the upper member, which is exactly of the same length, and consists of the same variation of curvature as the bold hollow of the plinth moulding, although totally differing from it in appearance. The greatest diameter of the capital is 16 feet, the circumference being more than 50 feet. On the top of the cornice, around the outer edge, it is proposed to place a series of coloured glass cones. Upon the capital of the column will be about 4 feet of block stonework, around which the crystal enclosure will be *belted*, and thus be fixed without any part of the metal framework entering into the masonry. In short, the crystal enclosure will be held in its position by about fourteen tons of stone. A ball, 12 inches in diameter, at the foot of each of sixteen standard bars of the dome, rests on strong pieces of glass, embedded and fixed on the top of the capital of the column, to isolate it from the metal-work,—a cavity being formed outside the blocking-course for the half of each ball. The height outside the dome, to the top of the crown, is about 18 feet. The diameter of the *band* at the brow is full 5 feet, and the diameter at the top of the crown is more than 7 feet 6 inches, and the circumference 23 feet 6 inches. The termination of the leaves* of the crown are to be tipped with glass, as repellents, or nonconductors of electricity.

The curve of the profile of the dome is a curved conic section,† a reciprocal of the conchoids. Inside the dome the height will be about 12 feet 6 inches, and the diameter at the floor 10 feet; the floor being extended over the stairs when required. At a convenient height from the floor, a portion of the glass in each of the divisions of the dome is open, either for ventilation or for more distinctly observing any distant object, either by the naked

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* Systematic practical investigations were, there can now be no doubt, the means used by the ancient Greeks for their great discoveries and rapid advances in the knowledge of Geometry, and these became their guide to the most delicate perceptions and correct applications in works of art.

Proceeding by the same or similar methods, the rediscovery of the source and the laws of various results in geometry, and of the most peculiar and beautiful forms which the Greeks introduced in art, has been accomplished, which for two thousand years had been lost, was unknown to the ancient Romans, baffled Vitruvius and all who have followed him. "Hogarth" apparently having had the clearest conception that the ancient Greeks had a "key," "the analogy:" in other words, it may now be stated that practical geometry is the analogy of nature, every law and form in nature having its analogy in geometry.

Therefore, to make further discoveries, begin at the beginning, as the Greeks must have done, and keep the beginning, the foundation, constantly in view. Do not be deterred by "Professor Willis," who calls such attempts "presumption." Is he sure that the roads of science have been swept quite clean? And do the accumulated results at Cambridge contain all? If so, why has the professor not directed the architect, the engineer, and the artist to such simple practical principles in his works?

* "The *cissoid* is a curve invented (discovered?) by an ancient geometer and engineer, named *Diocles*." "This curve . . . . is described very beautifully by means of Mr. Jopling's apparatus"—*Mathematics for Practical Men, by Olinthus Gregory, LL.D. First edition.* 1825.

The cissoid is now discovered to be derivable from a curved section of a cone, and most intimately related in all its varieties to the parabola.

† A slab, now at the British Museum, from "High Mound, Nimroud," is of similar form of outline, and so nearly of the same size as to be worthy of notice. This was not known until after the marble architrave and tablets in the pedestal were fixed, although it was formed and decorated 4,000 years before them. This line has two branches continuing in the same direction, between two parallel asymptotes, at a given distance from each other. There is a great variety in the family. A line may be taken so that a portion of it may be very near a semicircle, while the branches are as near as possible right lines; yet if continued indefinitely, they are in really varying courses

* The edge of the leaves of the crown is a portion of a spiral line obtained by the application of part of a circle to a conic surface.

† This flame form is derived from an intersection of a particular angled cone, with a sphere, and there is evidence of some ancient knowledge of this fact, handed down in Indian art: in a similar way, the Greeks have left on record in their works of art some of their knowledge of geometrical facts, not to be found in any of their writings come down to this time that have been translated

eye or with the aid of a telescope. Ventilation will also be provided at the top of the dome. On one of the horizontal rings of the framework, at a convenient height, will be marked the degrees of the compass, and maps for reference, corresponding radii being drawn: the exact bearing of any object noticed being taken, its place may be traced out with facility on the maps.

Under the varying states of the atmosphere and the changing positions of the sun at rising and setting, it will of course be a considerable time before every particular spot within the circle of the horizon can be ascertained and seen in the most clear and interesting aspect of light and shade, and in collecting a history of noted places discoverable from so elevated a position.

The architect of the column is Mr. J. Jopling.*

GAS.

As a means of increasing the illuminative power of gaslight, as well as for other purposes, the celebrated chemist Boussingault proposes the use of oxygen, acquired in large quantities by means of baryta, which at one temperature will attract oxygen from the air, and at another will yield it up again, pure and separated, of course, from the air, leaving the baryta ready as ever to attract more oxygen. Another mode of contributing oxygen to the gas is by the magneto-electric decomposition of water into hydrogen and oxygen, according to a patent about to be worked, we understand, by Mr. Shepherd, and a new "Electric Gas Company," and of which patent we long since spoke. The gases of the decomposed water, it is said, can be so managed that after being produced in abundance they can be burnt together without danger, so as to produce a fine light. In reference to the magneto-electric decomposition of water, and the use of oxygen in illumination, we may here note, by the way, that in a lecture on Boussingault's proposal, delivered at the Royal Institution lately, Professor Faraday remarked, as reported in the *Mining Journal*, that "the change oxygen undergoes in its conversion into ozone (that is, as many conceive it to be, when electrified), and the peculiar bleaching properties it acquires, have given rise to interesting speculations respecting the mode of action of that body, *and even thrown a doubt on its elementary character.*" What will those writers now say, who imagined themselves so impregnably ensconced in chemical orthodoxy, when they ridiculed our anticipation, some years since, of this very result. Yet, so confident even then did we feel of the probability that oxygen was not an element, and might be decomposable,—as, for instance, by some peculiar form of magneto-electric apparatus,—into what Davy regarded as probably the only true element, namely, hydrogen, that the writer (J. E. D.) sent a copy of his remarks on the subject to Professor Faraday at the time, and now he has the satisfaction to find that the professor himself is advancing, experimentally and practically, along with his contemporaries, to the very same conclusion!——While on the subject of gas, we may here add, that a combined and economical apparatus for making ordinary gas on a small scale, for country mansions, hotels, farmsteadings, &c. has been patented by Mr. George Bower, of St. Neots. Mr. Bower writes us that he can now erect small gas-works for private houses, on this patent, for a very small sum.

* The following is a list of the lines which have names,—that have been, or are proposed to be, introduced in this work:—

1. Right line. } These need no reference.
2. Circle. }

3. Ellipse. The perspective of circles and portions of this curve are introduced in mouldings.

4. Hyperbola.—The upper line of the vertical face of each pediment of the cap of the pedestal.

5. Parabola.

6. Conchoid.—Concave profile of the shaft of the column.

7. Cissoid.—Applied at the right angles of the elevation of the pedestal.

8. Cardioid.—This is now discovered to be related to the ellipse and the cone, as the cissoid and the conchoid are to that solid, and to the parabola and hyperbola.

9. Echinoid.—The outline of the architrave of the four angular windows.

10. Line of beauty.—The true Greek water-line applied as the profile of the bed mouldings to the capital of the column.

11. Projections from a spiral, &c. applied as the base mouldings to the plinth of the pedestal, and to the cymatium of the capital of the column.

12. Flame form.—Applied as an ornament on the belt of the crystal enclosure, to cover the stone work, by which it is held in its position.

13. Reciprocal of conchoid. Applied as the outline of the architrave of the door, of the tablets, and of the crystal enclosure—being described by a simple motion, and deducible from a curved conic section.

14. On each side of the entrance-door will be a number of curves—the source of the Greek honeysuckle and many other lines will be there apparent.

THE ROYAL CORNWALL POLYTECHNIC SOCIETY.

The twenty-first annual exhibition of this society commenced at Falmouth on Thursday in week before last, and is fully described and reported in the *Cornish Telegraph*. The opening took place in presence of a large and influential assemblage of people. The society this year, it appears, sustains its reputation in a majority of the numerous departments which it embraces. Besides various paintings, one of the more noticeable features of the exhibition consisted of numerous photographs and lithographs. In the body of the hall were specimens of serpentine, manufactured into chimney-pieces, vases, &c. Several prizes were given in the mechanical department for improvements. There were architectural and mechanical drawings—"Restoration of West Front of York Minster," G. Bellamy, Plymouth, first bronze metal, or 3*l.*; 40-inch condensing steam-engine, W. H. Truscott, St. Blazey, 1*l.*; architectural designs, W. Farley, Truro, 10s. In the fine-art department there was nothing very striking, and no report was read on the subject. In the naval architecture and natural history departments various objects were exhibited, as well as in fancy-work and school productions. Mr. Hunt delivered an extempore lecture "On Light;" and a commercial traveller, accidentally present, amused the spectators with an off-hand practical lecture on the various samples in glass contained in his portmanteau. In the evening Mr. Hunt lectured "On Photography;" and on Friday Mr. H. Mackworth, one of the Government mine-inspectors, gave "A Dissertation on Mine Ventilation." The hall was lit up with gas in the evening of Friday, and the public admitted. On Saturday models were explained and art-union prizes drawn. Amongst the articles exhibited were tables of white lime-wood, inlaid with specimens of sea-weed, by Miss Caroline Pearse, of Launceston, who expressed her wish, that, if approved, this sort of fancy-work should be made an occupation for decayed gentlewomen.

MUSEUM OF ORNAMENTAL ART, MARLBOROUGH HOUSE.

The Museum in connection with the Department of Practical Art has been enlarged during the recess, and is now again open to the public. A case of jewellery, of considerable interest, has been added, and several fine specimens of metal work. Amongst the bronzes will be found all those produced by the Art-Union of London, and which have been mainly instrumental in advancing this branch of art in England. The largest increase of specimens, as it seemed to us, is in the section illustrative of pottery, and a very interesting and instructive section it now is, including the collection of the late Mr. Bandinell. The case containing specimens of English earthenware is very curious, and would afford matter for an amusing paper. The collection of Majolica ware is large and valuable, and will be looked at with more wonder by the uninitiated, if they obtain a notion of the sums of money which such works fetch. And what is Majolica ware, some of our readers may ask? It is too long a story to go into now, but we may say, in brief, that the term probably had its origin in the fact, that painted pottery first came into Italy through the expedition against Majorca, in the twelfth century, when Moorish pottery formed part of the spoils. What we now know as Majolica ware proper belongs mainly to the fifteenth and sixteenth centuries. The earlier specimens of it are called mezza-Majolica. The finer ware was afterwards called "Porcellana," that being the Portuguese word for a cup. Majolica is sometimes termed Raffaelle ware, but improperly so. Raffaelle may have painted some of these pieces with his own hands, and it is quite certain that his compositions are found upon many of them; but still the best works in this manufacture were not produced till after his death. Oriental porcelain put its nose out of joint with collectors for a long time; but it is now taking its old top place. Specimens of the Chelsea china, too, we may say, will now bring very large prices. Both France and Germany had a Majolica of their own; but of this we will not speak, or we shall get into the long story we promised to avoid.

The funeral-car of the Duke of Wellington furnished complete even to a coffin and the horses, is now open to inspection in the temporary building originally put up to receive it. The bronze work of the car has been greatly improved.

PREVENTION OF ACCIDENTS THROUGH RUINOUS BUILDINGS.

SECTION XL.

The condition of a considerable amount of house property is now become so deteriorated, and in such a state as to render it expedient to place before the public those points in which the Act fails to meet, with sufficient promptitude, the evils complained of. The difficulties the surveyor has to contend with are manifold—"litigated titles; the obstinacy, neglect, or poverty of the owners;" and last, but not least, some legal technicality, having no reference to the substantive merits of the proceedings, being raised by some barrister to defeat the case.

On all these points I have had experience. In many cases proceedings taken by me have been rendered entirely nugatory by the "overseers of parishes" having failed to give effect to my certificate of condemnation, and declining, under legal advice, to act as "authorised and required by the Act."

In some instances, owners live many hundreds of miles away; in other cases, cannot be found and, again, in others, employ a barrister to defeat the proceedings, and get rid of their responsibilities; so that these may fairly be classed amongst the difficulties of the Act.

When the new Metropolitan Buildings Court comes into operation, it is to be hoped sufficient funds and summary jurisdiction will be given and these onerous, and as I have shown in many cases, "impossible duties" taken out of the surveyor's hands. A District Surveyor.

THE LATE EXCAVATIONS AT THE ACROPOLIS, ATHENS.

Before the late works, conducted by M. Beulé, of the French Academy of Athens, the citadel which contains now the Parthenon had but one entrance, rudely built and hidden, as it were, in one of the lateral walls. Now the Acropolis possesses a majestic gate at the foot of the Propylæum, opposite the Pyræus and Salamis. The sight of the Acropolis has been much improved by the works of M. Beulé. A wall formerly built by the Turks, and which completely concealed the Propylæum, has been demolished, and thus the ancient wall has come to sight. It is of white (Pentelic) marble, decorated with frieze and cornice, and in an entire state of preservation, although the material has been somewhat altered by the lapse of so many centuries. Two massive structures are at the side of the door; and in the middle opens an Ionic gateway, which corresponds with the great portico of the Propylæum. It is from this spot that we may judge of the great plan of the monument of Mnesicles. The immense staircase, which reached up to the top of the Acropolis, had a width of 70 feet! of which the last stairs have been found. M. Beulé's official report concludes thus:—"Since the wall which concealed the western side of the Acropolis has been demolished, the Propylea have reappeared in all their old splendour; and we may view them without being obliged to go to the hills of the Museum or the Pnyx. From this road, which leads to the new entrance, we see their white columns and the grand trapezium of their door. A little terrace has been constructed by the French engineer, whence a fine view of the smaller portico of the Propylæum and the great door of the Pinacotheka may be obtained. Near ing the entrance, we perceive a façade in marble which is an object of great curiosity. The side buildings, of very regular proportions, form, as it were, a natural vestibule. Through the open ing of the doorway we perceive the great staircase and the central gateway of the Propylæum

and all the height of the scenery. Now only the whole plan of these splendid structures can be perfectly appreciated." The correspondence carried on between M. Beulé and the Greek Government, contains a full acknowledgment of the services thus rendered to architecture and art. A large marble table, erected at the entrance of the Acropolis, contains the following rather windy inscription:—"La France a découvert la porte de l'Acropole, les murs, les tours, et l'escalier. 1853. Beulé."

GELATINE MOULDS FOR CASTS.

A correspondent asks the best method of using gelatine for elastic moulding. I have used it extensively, and find the following mode answer very well. Dry your *plaster* model thoroughly, and stop the suction with boiled oil: then lay a thickness of half an inch of clay entirely over the plaster, on which make a plaster case: when set, take it off, and remove the clay, which will leave a clear half-inch space between the case and the model. The advantage of this method is, you have a regular strength all over; no thick and *thin* places which are apt to break. Dry and oil your case the same as the model: make a hole in any convenient place, and pour in the gelatine, it being melted to about the thickness of carpenter's glue. It will take about twelve hours to get hard. To get a cast from the mould, first oil it in the usual way, and fill in the plaster: you must take the cast out of the mould before the plaster is sufficiently set to become hot, or it will take the face off the mould. You may take out six casts in an hour.

W. C. R.

ANTWERP.

At the Antwerp Bourse, the design for which we published some time ago, M. Charles Marcelles has erected the entire of the iron-work to cover the area, and the glazing is nearly completed. The effect is very satisfactory, according to our correspondent, and the building itself appears much improved by the iron window-dressings to the range of windows over the arcades. At the cathedral, M. Durlet has finished the stalls, and has since resigned his appointment as architect. In the tympanum over the entrance between the towers in the transepts, M. Bellemans has painted religious subjects on gold ground. Much fault is found with their excessive gaudiness in relation to the dark grey stone of the framework, and it is proposed either to dirt them down into harmony, or to repaint them more soberly.

THE CONSTRUCTION OF ROADS.

An article having appeared under the above head in the *Builder* recently, will you permit me to offer a few remarks thereon?

The construction of roadways in the larger public thoroughfares of the metropolis has occupied much attention for some years, but very little has been done towards their effectual improvement, nor can we expect (as your correspondent of last week justly observes), to have good roads while the foundations are repeatedly disturbed by gas and water companies. You may ram and concrete, but all to no purpose. Neither wood blocks, Macadam, nor granite paving can stand, unless an unyielding foundation can be obtained; nor would the plan proposed by your correspondent meet any better fate, unless the whole of the pipes were taken up and differently arranged and the sewerage reconstructed. This would be a work of considerable labour and expense. The idea of building walls longitudinally (although piers would seem to answer the purpose) might be carried out with advantage, without the addition of underground roadways; and I would suggest that the pipes should be placed as near the footpath as practicable. The outer wall, or piers, built in cement, should be constructed so as to form supports for the pipes on each side the road. The earth from below and around to a certain extent might be excavated, and access afforded to get at the pipes. Outlets might be formed into the common sewer, to carry off any overflow from the defective pipes, and provision made to flush the sewers by these means. Iron manholes could be provided at stated distances. The intervening space of roadway would then have two or more walls running longitudinally, and should be built battening on each side upon solid foundations. Common centering might then be inverted, and blocks of granite, joggled on both sides, pinned in upon the principal of the arch. This would, I doubt not, form an unyielding mass. The upper course of each wall should be grooved.

John Edward Reid.

IMPORTANT TO BUILDING SOCIETIES.

In the City Small Debts Court, Guildhall, an action was recently brought against a trustee of "The Second Tower-street Building Society," of some importance to building societies. It appeared that the plaintiff, Christmas, as a member of the above-named society, had contributed the sum of 23*l.* and that, with interest thereon, he sought to recover of the defendant, Sandman, who was a trustee of the society. Robinson, the secretary of the society, had become defaulter, and the society itself was insolvent. Under these circumstances Mr. Sleigh, counsel, contended that the defendant was clearly liable for the amount of all subscriptions paid into the society. The defendant's solicitor, on the other hand, contended that under the Friendly Societies' Act and the rules of the society, arbitration was the legal course for the plaintiff to have recourse to. That if held, contrà, he urged that the action must fail, as the responsibility of trustees only extended to moneys actually received by them, unless they signed a declaration in writing, consenting to be personally answerable for the funds of the society; and no such declaration had been signed by the defendant.

In answer to this, Mr. Sleigh said he was prepared to prove that the defendant had actually received moneys, and examined the defendant to prove the receipt of subscriptions. Mr. Sandman stated that he had been a trustee of the society. There was a banking account kept in the name of the trustees, but he had never actually received any moneys belonging to the society.

His Honour said, after this evidence he was of opinion that the action could not be maintained; and nonsuited the plaintiff, with costs.

Miscellanea.

State of the River Shore at Bermondsey.—One of the working-classes, "A Constant Reader," writes us complaining sadly of the abominable filth which the Sewers Commissioners, he says, have managed to bring from all quarters on the south side and cast out upon the open shore, in face of the poor inhabitants who live on its borders. The dirty habits of some of the lower orders, he continues, are much expatiated on by gentlemen of the class to whom Sewers Commissioners belong; but this is a shocking example, he thinks, to set before them,—little better, he remarks, comparing great evils with small, than it would be were some of the poor people of Bermondsey habitually to empty the contents of all filthy utensils into their water-butts or cisterns, but which poor people are not yet so dirty as to do, even though instigated to it by such an example. Sewers Commissioners, he says, have no conception of the bad odour in which they are held by all those poor people who have to hold their noses whenever they come within sniff-shot of some of the "works" of said commissioners on the Bermondsey shore. In fact, he seems to be quite ashamed of them himself. Now raillery such as this may be offensive, but there is truth in it as well as pungency, such as it is; and we do believe that as little allowance is often made for obstacles in the way of cleanliness amongst the poor as is here shown for difficulties in the way of cleanly habits amongst Sewers Commissioners. Our correspondent thinks it would be more reasonable were the sewage to be taken *to* the country districts of Peckham-rye, &c. to manure the land, instead of *from* it to pollute the metropolis and its river. He looks upon the filth that is strewed along the shore from the sewer-mouths as just so much cholera-seed which the Sewers Commissioners are ever sowing, and looks forward to the advent of cholera there as certain, were it on this account alone.

Consecration of a Colonial Cathedral.—The Consecration of Christ Church, the Cathedral of the Diocese of Fredericton, New Brunswick, took place on the 31st of August. The ceremony was attended by a large assemblage of bishops, clergy, and laity of the Diocese, and from Nova Scotia, and the United States. The collection after sermon amounted to upwards of 250*l.* the largest collection made, it is believed, at any one time in British North America.

Hogarth's Pictures in Bristol.—The vestry of St. Mary Redcliff, Bristol, have announced for sale the three pictures in their church, painted by Hogarth,—the "Ascension," the "Sealing of the Sepulchre," and the "Two Marys at the Sepulchre," desiring to apply the value of these works, which are not suited to the church, towards the cost of fitting up the sacred building with new oak seats, pulpit, font, and screens.

Improved Wheelbarrows.—At the meeting of the British Association, at Hull, Capt. Wilson called attention to a newly-constructed wheelbarrow, which would enable the labourer to perform double the amount of work, as, by the alterations, the barrow was capable of holding twice as much, and required no more exertion to wheel than that at present in use. The best-constructed barrow for certain purposes, was the washerwoman's wheelbarrow, which had a stage raised over the wheel for the linen-basket. The present example was the more complete, carrying out fully that idea. The first difference of the new barrow from the one in use was, that the wheel was sunk into the floor of the barrow, thus throwing a great portion of the weight on the top of the wheel, instead of its being, as previously, between the hand and the wheel, and by this alteration they could double the quantity of the load. The floor of the barrow was broader at the handle than at the wheel, as by increasing the balance and pressure on the hand, to counterbalance the weight beyond the fulcrum, they thus extinguished the oscillation. The handles were a separate joint from the framework of the barrow, and were raised, so as to decrease the first lift as much as possible, and by this arrangement they brought the weight below them, and caused a horizontal pressure instead of at an angle of 30 to 35: they thus had a fair forward movement, instead of the wheel being pressed into the ground. A brass pin was placed in the tip of the hand-board, directly in a line with the wheel, so that it would serve as a guide to the labourer when he required accuracy in his work.

Public Works in Egypt.—Mr. Stephenson, on the subject of the railway now in progress of construction in Egypt, says,—"His experience in Egypt surprised him not a little. During the construction of a railway there, he calculated on much difficulty with regard to the making of embankments, ditches, culverts, and so on. But arrangements were made through the agency of dragomen and the Egyptians. He was almost in despair at first, but after they had become familiar with the labour, they performed a quantity of work that was really astonishing. He mentioned this circumstance as one that stood in strong contrast to the Britannia-bridge masonry, which might be regarded as a work where the utmost available amount of science was brought to bear, while the Egyptians' work was one in which an indefinite division of labour was employed and exemplified. An embankment was made over the delta of the Nile, extending to about 140 miles, 8 feet high, and 25 feet wide: the whole, he believed, was now completed within about eighteen months. One portion of the work struck him as very remarkable. The Pasha of Egypt had, of course, the power of sending to villages, and directing the people to cause a certain amount of work to be performed in a certain period. A road was required to one of the Pasha's palaces, and the Pasha ordered it to be made. To be ordered there is to be done. The road was made thirty miles long, 40 feet wide, and 8 feet high; and in what time could it be supposed? Why, in six weeks. In that comparatively barbarous country, then, a work had been accomplished which he had not known equalled in any country however highly civilized."

Glass.—In the glass trade there is a brisk demand, prices rather advancing than declining. At the works of Messrs. Chance, West Bromwich, and at the furnaces of the Birmingham Plate Glass Company, the hands are at full work; and Messrs. Summerfield and Lloyd have also materially increased their trade. This firm has lately been maturing a new application of glass to external purposes of shop decoration. They are preparing sash bars in flint glass, for shop fronts, large windows, &c. The bars are moulded in several lengths, held together by steel rods, running through the centre, and enclosed in the fluted glass tubes. The objects aimed at are novelty of appearance, increase of light, and facility of cleaning. Great strength and durability are also said to be thus attained.——The glass wall enclosures, invented, it is said, by Mr. Ewing, of Bodogan, Anglesea, have been put to use during the past summer, and are reported to have protected fruit trees and ripened the fruit in a very satisfactory way. Even figs are said to have ripened well during the present cold and wet autumn.

White Lead.—It is calculated that the use and manufacture of every thousand tons of white lead produce, on an average, a hundred and twenty patients and five deaths.

New Market-place Buildings at Arbroath.—The town council of Arbroath having resolved to lay out 2,000*l.* on a design for the formation of new market buildings, estimates were called for, but the first tender for the design amounted to 5,000*l.* and after reduction it is still 3,600*l.* or 1,600*l.* beyond the specified outlay. According to the local *Guide*, however, the council committee have resolved to recommend the council to carry out the plan as modified.

Undermining Sunderland-bridge.—The great bridge across the navigation at Sunderland, it is said, has been in imminent peril, if not seriously injured, by the blasting of the adjoining rock, which is reported to have actually laid bare the very foundations of the bridge, so that it was rumoured at first that the bridge had been blown up. How the corporation could permit blasting to proceed to such an extremity at such a spot cannot easily be imagined. If they have had no power over the property so closely adjoining, there must have been some strange oversight from the beginning. Mr. T. Meik, C.E. and other engineers, assisted by Mr. Moore, the architect of the bridge, according to the *Newcastle Journal*, have since been engaged on a survey, with a view to the adoption of such measures as they might deem requisite for the safety of the structure.

Destruction of Carpenters' Premises, and Workmen's Tools.—It appears from an advertisement in our columns this week, that a subscription is in progress in aid of two carpenters and their workmen at St. John's-wood, who have been deprived of tools and other property, valued at upwards of 800*l.* by a fire in their premises, the origin of which, it seems, remains a mystery. From the respectability and number of those who have already subscribed, we have no doubt the case is one worthy of the helping hand of those who can contribute towards the replacing of the poor men's property. At the same time we would wish to put in a word in favour of insurance amongst carpenters and their workmen above most men, from the liability of their property to be burnt. The insurance of a workman's tools would cost but a trifle per annum.

Shocking Accident at Preston.—On Monday last between 200 and 300 turn-out factory hands, chiefly young women, were collected into a room 25 feet by 20, at the Corporation Arms Public-house, in Preston, when the one beam in the centre which sustained the floor gave way, and precipitated the whole crowd into a room 12 feet in height below. Fractures of rib, leg, and other bones innumerable were the consequence, and one poor girl, fourteen years of age, was killed on the spot. In a public-house especially, but indeed in any place where it is even barely possible that a crowd of people may collect, it is culpable to construct a floor incapable of sustaining the weight of all the human beings who could possibly find standing room in it. In the present instance, it is said, the floor went down like a pair of folding trap-doors, when the single beam snapped in the middle.

The Belfast Testimonial.—The committee of management for the erection of a monument to the late Earl of Belfast, in his native town of Belfast, have decided that McDowell, R.A. shall execute the statue resolved upon, and which is to be cast in bronze. It is believed that 1,500*l.* will suffice to carry out the intended monument, and we are pleased to hear from Belfast that it promises to lead to other objects of street ornamentation, of which we may be able soon to speak more fully.

Art-Education for Schools.—An aggregate meeting of teachers of elementary schools in the metropolis was held in Shaftesbury-hall, Aldersgate-street, on Saturday in last week, for the purpose of adopting resolutions for effectually introducing the rudiments of art and science into elementary schools. Upwards of 150 teachers of both sexes were present, and in the absence of the Lord Mayor, from illness, Mr. Burchett, head master of the Marlborough-house-school, presided, and addressed the meeting, after which a report of preliminary procedure was read, and resolutions to the following effect were passed,—namely, that elementary school teachers should have the means afforded to them of becoming practically acquainted with the plans proposed by the Department of Practical Art; that the meeting appreciated very highly the announcement that classes would be opened by the Department of Practical Art for giving instruction to teachers, and would take the liberty of suggesting, as necessary to success, that the evenings for giving such instruction should be, for one course, Monday and Thursday, and another course on Tuesday and Friday, and that a class for schoolmistresses be established on future arrangements to be made; and lastly, that the meeting was sensible that a great number of teachers would avail themselves of the advantages of the lectures at Marlborough House, but whose time is so absorbed by their duties as to make their attendance quite impossible, and that it was, therefore, of urgent necessity that classes should be formed in the centre of the City, and, if possible, connected with a museum of objects of interest to teachers of elementary schools, and especially in reference to science and art. A committee of three was then appointed to carry out the preceding resolutions, and superintend the arrangements to be adopted for establishing an educational museum in the metropolis.

The Iron Trade.—At the first of the quarterly meetings of this trade, it was discreetly resolved not to raise the nominal price, although strenuous endeavours had been made to induce the masters to do so. It appears, however, that the real reason of this comparative moderation, was the fear that a rise in wages would be forthwith demanded by the workmen connected with the trade if the masters declared an advance in price.——The Dowlais works are now in activity again. They do not, however, as yet contain more than 300 men at work, whereas the force that struck for the advance was fully 1,200. The others have gained employment elsewhere. A number of the best men have emigrated to Australia; and so great has been the emigration from Merthyr that it exceeds the influx by 30 per cent. The ironmasters cannot depend upon an Irish supply, as the natives of the sister isle prefer America or Australia, and labour is scarce in all the Welsh markets. The works at Dowlais have been put into a state of thorough repair, new brickyards having been erected.——Mr. G. Mackay, brickyards having been erected.——Mr. G. Mackay, brickyards having been erected.——Mr. G. Mackay,

The Builder.

SATURDAY, OCTOBER 15, 1853.

THE memorials of old London left by the Great Fire of 1666 are so rapidly disappearing, to meet modern requirements, that it seems to us useful occasionally to direct our readers' attention to those which remain. The traffic of London has been sadly interfered with lately by the works which were going on in Fleet-street, and are, still, on Ludgate-hill. *Détours* of dreadful length have been forced on all comers and goers, and narrow side-streets have been choked with vehicles. The inconvenience caused has been immense, and the insufficiency of our thoroughfares has been brought more forcibly under the notice of the public than it ever was before. It must have been favourable to the project of underground railways. A few days ago we found ourselves blocked up in Upper Thames-street, midst an interweaved jumble of carts, carriages, and waggons, stretching out far as could be seen. The currents were congealed, circulation impossible, and had been so, as we were politely informed by an intelligent dealer in fish, "for more than a quarter of *a* hour;" and we turned up Duck's Foot-lane to Laurence Pountney-hill, hoping to escape by Cannon-street. The new thoroughfare, however, was equally impassable, so we stopped where we were and looked about. The flap to the cellar under No. 3, Laurence Pountney-hill was open, and a peep down recalled all the antecedents of the place. Here stood the "Manor of the Rose," at first the property of Sir John Poultney, and called "Poultney Inn," and afterwards owned by the Duke of Exeter, the Duke of Suffolk, and Edward Stafford, Duke of Buckingham, who attended Henry VIII. when he met Francis I on the field of the Cloth of Gold. "Then,"—quoting an ode spoken at Merchant Tailors' School, which is erected on part of this Manor of the Rose,—

"Then on this spot, in Gothic grandeur proud,
Her tower'd battlements a pile could boast,
Where festive pomp received a noble crowd,
And princely Buckingham was lord and host.
High rose the saulted aisles, with banners gay;
Loud echo'd through the halls the minstrel's lay.

"From many a window's arched height,
Transparent blazon gleamed its light;
Where counsel sage, and bold emprise,
Inspired the valiant and the wise:
Or pageant, masque, and revel prank,
Brought courtly dames in choral rank
A glow of beauty to disclose,
Worthy th' illustrious roof, the Manor of the Rose."

Holinshed, in his account of the proceedings against Buckingham, says, "Beside all this, the same duke, the 10th of May, in the twelfth year of the king's reign, at London, in a place called the Rose, within the parish of Saint Laurence Poultnie, in Canwicke-street Ward, demanded of the said Chas. Knevet, Esq. what was the talk among the Londoners concerning the king's journey beyond the seas?" Shakspeare uses nearly the same words (Henry VIII. act 1, s. 2), and by the way, makes the queen say to the witness, who is giving adverse evidence:—

"I know you well, you were the duke's *surveyor*, and lost your office on the complaint o' the tenants."

Sir John Poultney was a great benefactor to the parish, and gave it its second name. About 1332 he converted the church into a College of Jesus, in which he placed a master and chaplains. The church of St. Laurence Pountney stood between Laurence Pountney-hill and Laurence Pountney-lane, partly on the plot of ground still unoccupied, north of the passage which leads from one of these turnings to the other. It was celebrated for its high leaded steeple, and was destroyed by the Great Fire. A peculiar effect produced by the appearance of the flames out of the *top* of the spire, where the lead first melted and allowed them to burst out, is alluded to by Pepys and by another contemporary writer, quoted in Malcolm's "Londinium Redivivum."

Amongst the monuments in this church was one to a marvel of a woman, dated A.D. 1537:—

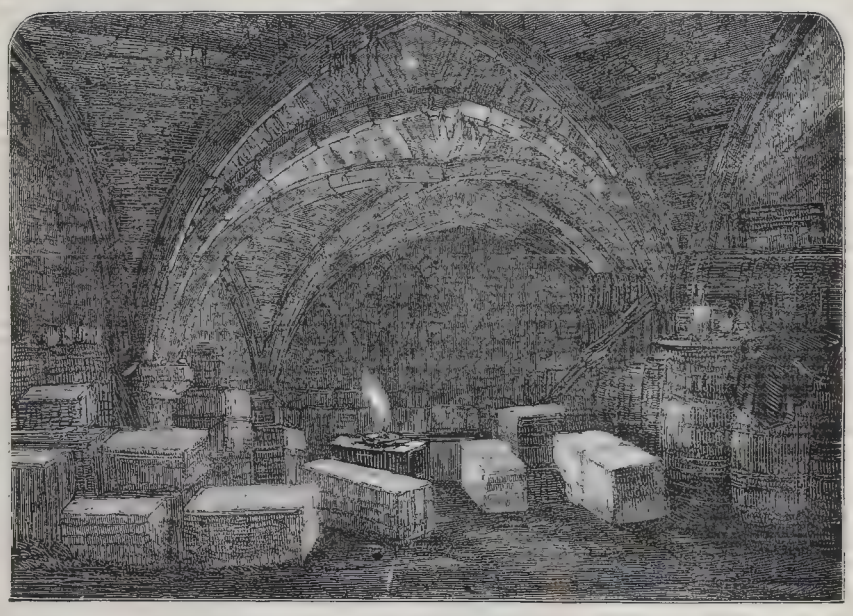
"She wrought all needle works that women exercise,
With pen, frame, or stool, all pictures artificial,
Curious knots or trails, what Fancy could devise,
Beasts, birds, flowers, even as things natural;
Three manner of hands could she write, them fair all,
To speak of algorism, or accounts, in every fashion,
Of women, few like, I think, in all this Nation."

She sang, too, in divers tongues, played well on the viol, lute, and virginal, spoke and wrote perfectly Latin, Spanish, and Italian, besides her own language; better than all, was good, and died before she was twenty-seven. O rare "Elizabeth, wife of Emanuel Lucar!" Poor Emanuel!

After the fire the church was not rebuilt, and the parish was united to that of St. Mary Abchurch, where also the church had been destroyed, but was re-erected in 1686, under Sir Christopher Wren. The exterior of the latter is very unprepossessing, but within there are some beautifully-carved fruit and flowers by Grinling Gibbons. A cupola covers the area, not greatly unlike that in the neighbouring quaint little church of St. Mildred, Bread street, which the recent alterations have left standing alone.

Nos. 1 and 2, Laurence Pountney-hill, have elaborately carved doorways marked 1700, and within there is a handsome staircase. Close by, if not on this site, Harvey, the discoverer of the circulation of the blood, lived for some time with his brothers, who carried on business as merchants here; but to speak of inhabitants would lead us too far afield.

The title of the Manor, too, is a text for a dissertation. Some have sought its origin in what is at all events a connected incident,—namely, the fact that Sir John Poultney received for his mansion of Cold Harbour, close by, a rose at Midsummer, as an acknowledgment when demanded, while others find it in its connection with the unhappy wars of Lancaster and York. It has even been suggested that the plots there



VAULTED CHAMBER, LAURENCE POUNTNEY-HILL, LONDON.

gave rise to the well-known expression suggesting secresy, "under the Rose," though every one knows that the queen of flowers symbolised silence in much more remote times.

What we saw on looking into the cellar, and which set us talking, is represented on previous page—an arched chamber, with stone groining and attached columns against the wall on each side to receive the ribs. The filling in of the vault is mostly of chalk, but there are bands of stone which bind it together, and one in the crown of the arch, the whole length of the chamber, the sides of which are cut zigzag to meet the courses of chalk-work. The capitals of the columns are broken away, and the chamber is filled up to some height above the original level and boarded over. At the western end will be seen two pointed-headed openings now blocked up. It is at present occupied by Messrs. Finzi and Williams as a packing-cellar for wine. Adjoining, according to the Rev. Dr. Wilson's very elaborate "History of the Parish of St. Laurence Pountney," published in 1831, there are two smaller divisions of similar character, but these we did not see, and here we have, with the exception of a few masses of masonry, all that now remains of the ancient palace of the Rose. If the old walls could describe the scenes they have witnessed,—courtly revels, love passages, and treasonous plots,—we should have a new "Romance of the Rose" of surpassing interest.

But the road is a little clearer now, so we need not stop any longer on Laurence Pountney Hill.

SCRATCHES ON THE ROAD.

PRAGUE, SAXONY, AND DRESDEN.*

The journey from Olmütz to Prague occupies about ten hours, but the country is flat and uninteresting. The latter place is remembered by many persons from its association with a peculiar piece of music describing "the Battle," which, I believe, is meant to illustrate that which occurred during the seven years' war, when Schwerin, the favourite of Frederick the Great, fell; but as Prague has been the scene of so many conflicts, it will do as well for one as another, for, doubtless, "the groans of the wounded," and the other characteristics of war which the composer strove by "dulcet sounds" to convey, may be taken as the universal language of carnage; and as the particular screams and groans of a certain period cannot be identified, they may be indiscriminately appropriated to those who have fallen in defence of their rights, or under the force of some tyranny they could not surmount.

The view of the city is very imposing and beautiful, especially from the old bridge, with its statues and towers, the work of past ages, and identified with past traditions and superstitions: there is one part marked with a cross and stars, showing where St. John Nepomuk was thrown into the river, and from whence the miraculous flames were seen to issue from the water where his body fell. Beyond this is the new suspension-bridge, a simple fact without either superstition or tradition, leading to the baths, where people may wash and be clean.

From the foot of the old bridge rises that portion of the town called the Kleinesite, which is surmounted by the Hradschin, the palace of the Bohemian kings, and the cathedral: as the tower of the latter is upwards of 550 feet from the level of the river Moldau, and 300 feet from the ground on which it is built, this will give you some idea of the effect produced by these and the surrounding buildings rising majestically on the mountain amphitheatre before you. The cathedral is very incomplete, but possesses some very curious illustrations. The most noticeable, I think, is the Chapel of St. Wenzel, with its ancient frescoes and its curiously inlaid walls. The door to the chapel has a knocker to which the saint is said to have clung when he was martyred, and this our guide thought much more precious and deserving of notice than the objects to which I have alluded. The castle contains the usual complement of prisons and torture-chambers. Beyond this is a chapel, which is an exact copy of that of San Loretto. It contains numerous relics which are shown by the sacristan in the most irreverent manner. Whatever may be the impression produced on the wanderers to the original shrine, heretics who visit the imitation will not be struck with its beauty, and they will certainly not be converted by its sacred stores, exhibited as they are by one who laughed with great glee as he pointed out a shin-bone of a saint or a rag of a sacred vestment. Near this is a monastery, to which we begged admittance, which, after some delay, was granted. We saw the chapel and the refectory, and, by dint of great perseverance, we obtained a view of one of the cells. During the whole of my journey I have observed the unvarying convict-like look of the monks. I have seen in some of the jails in England criminals that in countenance and appearance were a type of these self-imprisoned. I forget whether it is at York or at Norwich, where the culprits are clothed in black or yellow, but I am sure they need only be put into loose brown robes, and they would give you a fair and average specimen of the holy men that are here seen crawling about. But in the cell we entered there was an exception. We were most courteously and gracefully received by one who was evidently a gentleman: he was copying some old manuscript with great care, an occupation from which he ceased on our entry. His countenance spoke of destroyed or suppressed cheerfulness. Surely that smile was not intended for solitude! On his bed was a guitar, which spoke of some gentle association, and seemed to tell his story as forcibly as words. Alas! how much life-long misery is endured through pique, or some other equally unjustifiable source of action.

I wandered through the dirt, squalor, and filth of the "Jews' quarter," which here, more than anywhere else, mark their peculiarities, and at the same time the result of the cruelty and injustice with which they, in all ages, especially on the continent, have been treated. I believe, from a little experience, there is naturally less sympathy with them than any other race; but history has always shown that the best way to convert or modify the nature of men is not to make them martyrs, and thus in the eyes of their followers sanctify their degradation.

From Prague, I went by railway to Aussig, where I took the steamboat for the purpose of enjoying the beauties of the Elbe; and this I did when I came to Bodenbach, which is the frontier town of Saxony, and here I saw the last of Austrian *visés* and police. I felt that I could breathe more freely, and Nature seemed to confirm this impression, for the river here, and indeed all the way to Dresden, possesses greater beauty than anything I left behind.

In Saxony there is a custom in connection with building, which gives great eccentricity to the appearance of their houses. They have small rooms in the roofs, and the light to these is furnished by curving the tiles in the shape of an eyelid: then there are small white jambs put into these, giving exactly the appearance of the *albuginea*, and two small windows in the centre making the *iris*, forming together a perfect eye. Nothing can be conceived more grotesque than to see here a roof a Cyclops, there an Argus, and one cottage I noticed with two such excrescences, which had the windows which slide open, and the result was a hideous squint, which was heightened by the circumstance of the chimney springing from between the two, and this with the slightest effort of fancy, might have been taken for a nose. Even churches are not exempt from this defacement, and when one sees a dozen eyes peering from under the tiles, one is forcibly reminded of deans and chapters who keep such a sharp look out—for themselves.

In mechanical science, I presume I may say they have not made much progress, judging from the way I saw them driving piles at Tetschen. This was performed by the "monkey" being drawn up by twenty-five men, each of whom had a cross stick attached to a separate piece of rope; and then, at a signal, they "let go," and the pile received the blow. They worked very fast, but they halted frequently to get breath. The cost of labour with us would not make this mode profitable.

The approach to Dresden is very pleasing; and more intimate acquaintance with the city enhances your enjoyment. The first thing that strikes you is that the buildings are not so white as in other German towns, and this arises from the quantity of coals, which are easily procured, that the inhabitants consume; but this peculiarity is compensated for by the cleanliness in other respects. Its picturesque appearance from many points, its pretty though small gardens, its pleasant drives and walks, and then above all, its store-house of art, render it a most enjoyable place. On my visit to the Picture-gallery, I was forcibly reminded of the lady who went for the first time to see the play of "Macbeth," and who exclaimed, after it was over, "that it was all quotations;" for what with copies and engravings that I have seen in England, I seemed perfectly familiar, though in another form, with what met my eye from the *chef-d'œuvre* of Raphael to "The Chocolate Girl" of Liotard. I must in duty first speak of the "Madonna di San Sisto" of Raphael. No one can be disappointed with this picture: all that has been said about it cannot raise expectation to a height that will not be confirmed and satisfied by the contemplation of its beauty. It tells very easily by what means the worship of the Virgin has become a part of the rites of the Romish Church: such an illustration of the pure, the beautiful, and the sublime could not fail to be impressive on the minds of votaries who bowed to an authority who availed itself of such art in the illustration of its dogmas. "La Notte, the Infant Jesus in the Manger," by Correggio, is the picture next noticed, and to which the last remarks may be equally applied. I think this is more known in England, through copies and engravings, than the "San Sisto." Of "The Magdalen reading," by the same master, I was not moved so much: it is one of the principal attractions to all visitors, but it is not so suggestive as his other works. Carlo Dolce's "Saints" are disappointing: they are all fine ladies, very elegant, but not exalted above humanity. I have imbibed this opinion not only here, but from examples at Vienna and Venice. You have only to take away the nimbus from St. Cecilia, and you will have directly a familiar frontispiece for a musical publisher, to announce to the world, "that our circle at —— has been enchanted by the Honourable Mrs. ——, whose singing of this last new ballad has won all hearts." You would not give me space to enumerate and comment upon all the beauties that are here, but this is needless, as they have a world-wide fame. The collection is not so well lodged, nor does it appear so well cared for, as that in the Belvidere, at Vienna; but then, it is well known that in merit it occupies a far higher position. An acquaintance with the galleries of the Continent makes one aware of this fact, that many different subjects were painted by the same artist, whom, from imperfect knowledge, we have been accustomed to regard as a painter of only one. For example, at Vienna, in the fifth room, No. 13, is a landscape by Rubens, a magnificent production, which but for the catalogue and faith, no unpractised eye would for a moment suspect was the work of one whose general characteristics are so well known. Again here, No. 1,342, is "A Hermit at Prayer," by Gerard Dow, which, though bearing evidence of the delicacy of finish which distinguishes him, is a very different subject to those to which his name is usually allied. A visitor here was very particular in requesting me to notice No. 581, "The Baptism in the Jordan," by Francia, which he told me is similar to that in our National Gallery. I have no recollection of it, but shall pay it a visit on my return. I have several resolutions of the same sort to carry out, and I mention this simply to show that the pleasure and experience derived from my journey have not produced the sentiment that there is nothing to appreciate or admire at home.

The "Green Vault," containing the antiquities and the gems, was the next object of my attention; and here I was much struck not only with the superiority of the arrangement of this collection over that of Vienna, but I was at the

* See pp. 570, 593, 616, and 633.

same time charmed with the way in which the guide performed his duties: he was a gentleman well acquainted with the subjects he had to point out, conversant with the history of art, and its most curious and rare specimens, and not desirous of evading or stifling any question put to him; so that, instead of being, as at Vienna, a race round the room with a man who bawled out simply the number of years old of each antiquity, the carat weight of each precious stone, and its supposed worth in florins, the visit was one of agreeable and instructive conversation.

There is no more common mistake made than for incompetent custodians to suppose that the age alone of a thing constitutes its value, and therefore that those objects which can boast of the greatest number of years are necessarily the most interesting. All objects of this sort are preserved as monuments historical and social of the times to which they belonged, and there may be many memorials of an age antecedent to that of which there may be a production which is a greater novelty; and should you wish to dwell on this it must be at the cost of inspiring wonder that you are not more struck with an object of which the bold statement only is communicated to you that it is 800 years old, than with one that can boast of only some five or six centuries. Antiquarian science has been much injured by the universal supposition that its disciples simply prize a thing for its age, and not as an illustration of the habits, customs, usages, and arts of our forefathers. The armoury here is held by many to be the finest in the world, but I do not consider it possesses so great a variety of specimens as the Ambras collection at Vienna; nor is the armour of the Duke of Parma, before mentioned, eclipsed by anything here in the way of elegance of workmanship. In weapons of all sorts the museum is very rich, affording not only evidences of the warrior, but excellent samples, well deserving study, of decorative art. The collection of porcelain and terra cotta is exceedingly interesting: it contains upwards of 60,000 specimens, from the vase of the Etruscan and Greek to the English "brown jug," with all their varieties of forms and fashions.

The Frauenkirche, or Church of our Lady, deserves notice, not from its beauty but from the peculiarity of its structure. It is a circular edifice, with a small chancel towards the east; and it has exactly the appearance of a theatre, for on the floor are placed seats that look exactly like pit-stalls, while round above are four tiers of boxes and a gallery. What would the Cambridge Camden Society have said to this? It is capable of accommodating 6,000 persons, all of whom, I am assured, are able to hear the service. The ascent to the top is by means of an inclined plane round the dome, and having made this you are well repaid by the pleasant view of the city and the charming country with which it is surrounded.

Having feasted on art, I resolved to recreate myself with the beauties of nature, and so I started to see a portion of Saxon Switzerland, a misnomer that must create disappointment in the minds of those who expect a similarity to the latter country. It is most like the scenery about the river Wye, but it does not excel the beauty of that river.

The journey from Dresden to this district is very easily performed. By the railway, you arrive in about three quarters of an hour at Pötscha; you then cross the Elbe to the village of Wehlen, from whence you ascend through the Ottowalde Grunde, a most romantic and picturesque ravine; and you arrive at the summit of a rock called the Bastei, the height of which is about 600 feet, and from this is obtained an extensive prospect very much in character with that seen from the Wind Cliff. After enjoying this for some time, I descended, and again crossed the river and proceeded to Königstein, a large isolated rock, nearly 800 feet high, upon which is formed a fortress, which has the fame of being impregnable. Napoleon tried in vain to take it, and I should presume this is a sufficient proof of the fact. But I suppose what he could not do for want of some height on which to place his artillery to make it tell, will be accomplished some day by Captain Walker or somebody else's "long range;" and future generations will see this in the same state as those castles on the Rhine and elsewhere, which were deemed as secure in their day.

It is a most interesting spot to visit, for not only is the view from it grand and extensive, but it possesses many peculiarities, showing how Nature has aided in making it a stronghold. In various parts are patches of verdure and small portions of land, which they are able to cultivate, and an inexhaustible supply of water. But what could not be done by a mighty conqueror and a hero, was performed by a *sweep*, in 1848; and they point out the angle in the rock by which he scaled the immense height, much to the horror of the commandant. When questioned as to his motive for the attempt, his excuse was that he thought he saw his brother at the top. He who waded "through slaughter to a throne" saw not *his* brother when he pointed the guns at the devoted spot.

But adieu to Dresden, and I now approach Berlin. F. S. A.

THE CONVERSAZIONE OF THE ARCHITECTURAL ASSOCIATION.

THE opening meeting and conversazione of this association was held on October 7th, at Lyon's-inn-hall. Among the sketches on the table, those by Mr. Alfred Bell attracted attention, from their excellence and variety.

The secretary read the eleventh annual report of the committee, which, while congratulating the members on the steady progress and increasing numbers of the association, urged upon those who had recently joined, the obligation which they were under to assist the association in every possible manner.

The intimate connection of the association with the Architectural Exhibition required some notice of the difficulties which have prevented the opening of the exhibition for this year, and a strong hope was expressed that these obstacles would be speedily removed, and the exhibition established on a firm and permanent basis.

The adoption of the report was moved and seconded by Mr. J. D. Wyatt and Mr. Rickman, who both laid strong emphasis on the advantages the members would themselves derive in contributing papers to the association, and drew attention to the suggestive list of subjects circulated by the committee during the recess.

Mr. Edmeston, jun. as president, then read an address, urging the members not to float listlessly with the stream, but to observe its direction, and influence it as might seem best. Referring to what had been done during the past year, and the importance of not criticising too severely the short-comings observable in the earlier efforts of those who may be endeavouring to act upon the promptings of original thought, the reader went on as follows:—"Make much of every effort to strike out some new road—crush not, but encourage those whose successes at first may seem almost failures—pause, oh! critic, lest your verdict should but show your own shallowness: the effort that springs from the mind's desire to be true to itself, to depend on its own strength, to teach its own knowledge, and to please others with the aspirations it so delights in, is worthy of all honour. 'He is great who is what he is from nature, and who never reminds us of others;' and while this can never be any protection to imbecility and quackery, yet if there be one bright spot, let it redeem a host of errors—the one successful originality is more than enough to cover ten faults that are pretty sure to meet with after correction: as well prefer the cold polished and correct wording of the prize sonnet, to the forcible heart-reaching ballad of earlier days. If we feel this sincerely, we shall be saved not only from the danger of copying what has been done long ago, but also of repeating each other now—the worse of the two, and quite as likely to happen, as may too often be seen. Some time back an architect dared to employ segmental arches with the springing line kept above the capital of the column, and the archivolts returning down upon the abacus. Time was, when to have suggested anything so irregular would have been like luring a man to his certain destruction, and would have made him recoil with horror; but the combination was found not to be so very offensive, and straightway we find it repeated again and again in warehouses, public-houses, house-porches, &c. as something too delicious to be lost sight of.

But to return. Has there been enough done, as much as might fairly have been expected, in responding to improved public taste? This is the point I wish to have you think of. And if not—if we know that progress, which must be slow, has yet been slower than it ought,—if we see better intentions forsaken, fair opportunities neglected (and clients will sometimes let architects do as they like),—at least, let the past be a warning for the future. To make one more allusion. There has appeared a disposition lately to adopt some particular class of construction to the exclusion of all others, as the thing to be desired and to be honoured above all else. Let us avoid this. We will acknowledge that all that is, is good; that all the material world is for our use and gratification; that nothing is to be despised; that if we are unable to grapple with what comes before us, it is because of our own weakness only; yet for all this we will not be 'iron-and-glass' men, or 'brick-and-stone,' or 'terra-cotta' men. We will immolate ourselves upon none of these; we will pin our reputation to none of them; we will accept them all, and use them all; but we will so advance none as to hide all the rest: we will believe all to be good, and will shrink from none when the situation and the requirements demand them.

The advantage derivable from the varied resources at our command in these days, is, I believe, one of the greatest sources of strength open to us. And in the words of the American poet:—

> 'O thou sculptor, painter, poet!
> Take this lesson to thy heart:
> That is best which lieth nearest;
> Shape from that thy work of art.'

There are, moreover, difficulties which the young architect has to contend with, which are external, and perhaps more difficult to meet than those that are internal. Acts of Parliament coerce him. How is any original combination to be attempted, which he of course discovers is *not* provided for in the Buildings Act; with his employer desirous to have his work done on the one hand, and his drawings perhaps banished to the sadly safe-keeping of my Lords of the Treasury on the other; noble custodians, who, he feels persuaded, are bent on wearying his patience, and are hoping to drive him into something common-place, which they *can* understand; while they despair of comprehending his odd notions, and are very doubtful if they ought to sanction such dreams? These are facts that I speak of, and I think it is not out of course to give this state of things a passing remark on this occasion: the evil is no trifling one, and concerns us all too nearly to be lost sight of. It is not for me to propound a remedy; but is it impossible to have a board of practical and competent men, not turned into lawyers by the contradictions of legal terms and ill-digested sentences—not compelled to fetter their opinions by legal nicetiess, nor divested of, and forced to surrender all their own judgment and opinion, the free exercise of which would render their services really valuable? Such a board should be placed in a position the very adverse of all this; and without any jurisdiction over the realms of fancy and taste, should have a general and clear duty to enforce all proper constructive cautions, without any definition as to the mode, manner, or material; and this would open, instead of closing, as at present, the road to invention and novel application. At present, all that is not in brick or stone comes in most questionable shape; and being unprotected and unrecognised by law, is driven into a sort of outlawry, which hardly permits its existence at all.

We may not be able to alter all this: let us not, at all events, bear it uncomplained of. And here, again, oh! critic, are considerations which should have weight when hard judgment is passed on the advance and progress made in what is going on around us."

Mr. Laxton congratulated the members on the prosperous condition of the association, and urged them not to allow their efforts for advancement to relax.

Mr. Inman, expressing the pleasure he felt in taking part at a meeting of this kind, said,—The

profession of the architect was hedged round by difficulties on every side, and the earnest student should never lose an opportunity of adding to his knowledge, nor should he hesitate a moment in imparting to others what he had acquired. Some of the greatest obstacles against which the architect had now to contend were the restrictions contained in the Metropolitan Buildings Act, although it would be, doubtless, gratifying to the meeting to learn that every endeavour was being made to harmonize its requirements to the necessities of the day. The engineers had made advances in the educational part of their profession beyond the architects'; and he especially wished to see some such post as that of resident engineer introduced into the profession of architecture, as thus a young man coming from an office would be enabled to mature and complete the information he had acquired.

Mr. E. Hall would not allow the opportunity to pass, without endeavouring to urge the increasing necessity for taking up the subject of professional education. It might indeed be desirable that measures should not represent merely the views of a section of the profession: that might involve mistakes; but he thought, if one body were to remain looking for the moving of another, the profession would have to wait a long time. The immediate importance to which he more especially alluded, was connected with the present efforts for "the promotion of art," and also with the vastly-increasing extension of suburban London. During the last year or so, the demand for building-ground had increased beyond all previous conception; yet, though it was through the architecture and fittings of ordinary houses that any real perception of beauty by the people must be manifested, the taste and science which were the province of the architect were not called into use more than before. The ravages of the cholera amongst us again were due to lack of attention to matters within the architect's vocation. After adverting to the Metropolitan Buildings Act, as indefinite and contradictory, and so unnecessarily interfering with the domain of the art, he alluded to the suggestion of Mr. Inman, as to the more frequent employment of the younger members of the profession on buildings in progress. He thought changes were required in the bearing of members of the profession towards each other, before it could be extensively acted upon. Without implicating the association (although he knew that individuals would agree with him), he thought, that haughty indifference on one side, and assumption on the other, were more frequent than they should be. He did not limit his regret either to old or to young: what was observable was the inevitable result of partial education, which allowed one individual to set undue value upon his advantages in one respect, and to undervalue those of another. A course of professional education should be prescribed; and the object should be, not completeness in certain branches, but general knowledge capable of extension in any direction that the exact demands of after life—not to be foreseen by the student—might require. Each member of the profession should consider himself labouring in good fellowship for a common end, and neither disregarding nor *exclusively* mindful of himself, should constitute himself, as it were, an *apostle* in the cause of that great work of the amelioration of society, towards which architecture and the popular perception of beauty in art could be made so greatly subservient: and this was indeed also the best means to advance his own material interests.

Consumption of Smoke. — Major Browne has recently patented an apparatus for preventing the egress of smoke from the tops of chimneys. The invention is applicable to old chimney shafts, or in the construction of new ones the height might be considerably reduced. By means of apparatus fitted to the chimney, the smoke is condensed in a cold water trough, and becomes a product of intrinsic value.

Means of Fastening Leather upon Metal. —The metal is washed with a hot solution of gelatine, and the leather previously steeped in a hot infusion of gall-nuts pressed upon the surface and allowed to cool. It then adheres so firmly that it cannot be separated without tearing.

A BLACK SPOT IN ST. PANCRAS.

It is not surprising that some who are personally unacquainted with the small triangular portion of St. Pancras parish, bounded by the Great Northern Railway Station on one side, by the Imperial Gasworks on another, and by a part of the Old St. Pancras-road on the third, to which we have drawn attention, should regard our description of it as overcoloured. So far, however, from this being the case, its abominations are underrated, and this we will prove by a few further categorical statements. We will commence with Pancras-place, Pancras-road. There are sixteen consecutive houses in this row in a most filthy and dilapidated state, as they have been for years. A person residing opposite to them informs us they have not been painted for thirty years: others say, they cannot remember them undergoing repair. Apparently, if one were taken down, they would all fall: in fact, they are not fit for human habitation. The cesspools are in a most offensive state, being only partly covered, so that the contents often rise over the boards which form the flooring. The stench is, as the occupiers observe, "horrible." These houses, as well as those in Weller's-court, Clarence-court, and Paradise (modern), belong to a Mr. Stainton, of Islington, and are let to, or the rents are collected by, a person of the name of Anstey, a cooper, living on the spot. They are mostly let to five or more families, each family occupying a room, for which they pay respectively, from the kitchen upwards, 3s. 2s. 9d. 1s. 6d. and 4s. per week, or at the rate of 29*l.* 5s. per annum, for places not fit for pigs, much less human beings, to dwell in!

In Weller's-court, a small court leading from the Old St. Pancras-road to Ashby-street, the houses were a few days ago in a most dilapidated state, the back yards, as well as the court itself, disgusting and offensive, the soil from the cesspools actually overflowing, baskets of decaying fish strewed about, stagnant water and heaps of fish and dung lying about in all directions. Some of these houses have no convenience, so that offensive matter is thrown into corners, or deposited upon the heaps of dung that lie in various places. The effluvium evolved is most injurious to animal life, indeed worse than direct poison; for in the latter case, if you know the character of the poison, you have an antidote; while in the former, it is insidious in its effect, and is not apparent in many cases until too late for medical assistance to be of any avail. Ashby-street, commencing at the upper end of Weller's-court, and running parallel with St. Pancras-road, consists of about twenty-nine houses: most of them, particularly those on the further side from the road, are in a most dirty and filthy state, the cesspools in most instances full, and the smell exceedingly offensive. This street is without a drain, and strewed with animal and vegetable matter. Scarlet fever of a very malignant form, as well as small-pox, is now raging here. Mr. Sutherin, to whom we are indebted for information, has *at this time upwards of fifteen cases under treatment!* It was in an underground kitchen, in the adjoining street, that the same medical man was called upon to attend a case of cholera, and subsequently one of diarrhœa, which, happily, did not prove fatal. This house consists of five small rooms, and a back kitchen or washhouse, and is occupied by five families, numbering thirty-three individuals, distributed as follows, viz.—seven in the kitchen, which is underground, a man, his wife, and five children; seven in the room over the kitchen, a man, his mother, wife, and four children: in the room behind this are four labourers, who sleep upon two small beds, which fill the room; eight in the top front room, a shoemaker, his wife, and six children; seven in the top back room, six *men and women*, with one child, occupying only two beds. The kitchen is very dirty, has two sinks, both untrapped, communicating with the drain, and contains the water-butt for the supply of water to the several families. The house itself is filthy, the walls besmeared with dirt, and the yard contains an open cesspool and stagnant water. Within the last week the vestry have appointed an active sanitary committee, and, under this body, an inspector of nuisances. The vicar, clergy, churchwardens, and medical officers are forming local committees, for the purpose of house-to-house visitation, so that it is to be hoped the parish will soon be placed in a more sanitary state. The sanitary committee, much to their credit, have given the medical attendant unlimited power for removing cases of fever and small-pox.

"SURVEYORS, BOARDS OF HEALTH, AND COMMITTEES."

THE WINDSOR BOARD.

A commotion has been excited in the Windsor Board of Health by that portion of our brief article of 1st inst. which we almost exclusively based on the *published* report of that board's own proceedings in the local *Express* of the previous week. Utterly ignoring the report which had previously appeared in that respectable journal, and which was particularly full of the details on which our remarks were founded, the chairman of the Street Committee, at a meeting, of which we shall have immediately to speak, has declared that "it was perfectly clear that there was no public document whereon to found such an article!" and the mayor himself thereupon solemnly adjured the surveyor to confess that he had either written it himself or supplied the information upon which it was founded! Surely the members of the board could not have forgotten what was said and reported at their own previous meeting. Yet this thrice unfortunate surveyor has been thereupon indirectly charged with "virulent," "contemptible," and "base" "slander," and we know not what all, without the slightest foundation other than their own strange misapprehensions. This, however, we may fairly conclude,—that our portraiture of the real state of things, or the inference we drew from the facts reported, must have been tolerably correct, since it has been attributed to one so intimately acquainted with the circumstances as their own surveyor must have been. That gentleman, of whom we know nothing, did indeed send us a copy of the local paper alluded to, at the same time directing our attention to the report in question, but even this had nothing to do with the article, inasmuch as our own copy of the *Windsor Express* was at the time before us.

So much in bare justice to the surveyor.

We have now to state that the chairman of the Street Committee of the local board has politely sent us a manuscript report of a subsequent meeting, taken by a reporter employed for the purpose, in order that we may "give the same publicity to these proceedings as to *the representation of their surveyor*." In truth, however, the whole discussion is based on misapprehension of the real point at issue, which is simply this,—whether street committees who employ a surveyor are justified in treating the reports of that surveyor as if they were their own. In the present instance, it is acknowledged by the chairman, Mr. Bedborough, that he scratched out a certain portion of one of the surveyor's reports, "with the full concurrence of the Street Committee;" and, moreover, that the deleted matter related to a charge against the chairman himself. Now, with the truth or error of the charge we have nothing to do. We do not make any such charge against the chairman (it doubtless turns on a question of rights); neither did we allow the surveyor or any one else vindictively to do so through our columns.

The only relevant question for us to deal with is this. Was it justifiable in the chairman, or the Street Committee, to tamper with, alter, or expunge anything in a report for which, *ex facie*, the surveyor, and the surveyor alone, was responsible to the board? Nay, was it prudent or proper, we might ask, in the circumstances, for the chairman to do so, especially when the matter tampered with related to a charge against himself? He had his own legitimate means of vindicating himself, surely, without interfering with a report and a statement for which he was not responsible. To us it plainly appears that such a deletion could only be made with propriety by the surveyor himself; for it implied that the surveyor had seen his error, and therefore it was equivalent to a negative statement to the board that he, the surveyor, was of opinion that no such charge could be brought against the chairman, a statement by implication which was contrary to truth, inas-

much as the surveyor persisted in the statement which his report was thus made virtually to contradict.

There is much more on which we might comment in nearly the same strain, but we refrain; remarking, however, that to propose, after having *already* dismissed the surveyor, that the board should "mark their sense" of the article erroneously attributed to him, "by declaring that Mr. Jenkins should no longer act with the street committee," was not only to slay the slain, but to do so under mistake, since the object of such supererogatory wrath was wholly guiltless of that much-misapprehended "article."

A new surveyor, we may add, has, according to the chairman's report, been engaged "provisionally," or, in fact, on trial. The *Express*, however, reports that "it was decided that Mr. Hollis (the surveyor alluded to in the chairman's report) should be selected as inspector of nuisances and assistant to the street committee, for six months, at a salary of 2*l.* a week, and that the office of surveyor should not be filled up till Lady-day."

THE RATING OF GASWORKS IN PAROCHIAL ASSESSMENTS.

IN a treatise on Gas Works and the practice of Manufacturing and Distributing Coal Gas, by Mr. Samuel Hughes, engineer,* there is a chapter "On the Rating of Gas-Works in Parochial Assessments," which may be read with advantage. The principle to be adopted in these ratings has long been a subject of contention. It is now settled that every property, however great and extended, is to be rated on the rental which a tenant would give for it as a whole from year to year, deducting therefrom such expenses as would necessarily be incurred by the owner in order to command such a rental. To arrive correctly at this rental is the first question: the second is to apportion this rateable value amongst all the parishes in which the works are situated. Mr. Hughes takes, as many have done, and do, the profit realized by the company in any one year as the groundwork from which the rateable value must be derived, in which case the amount of this profit must be taken either from the company's balance-sheet, or from independent calculations founded on the quantity of gas sold and the cost of manufacturing it. While, admitting of course that the company are not to be rated on profits, expressly forbidden by Act of Parliament, it is contended that the inquiry into profits is necessary in order to ascertain what the property would really let for.

The amount of profit being arrived at, we have to deduct certain sums as a remuneration for the tenant's time and superintendence, and interest for the capital employed. The amount and nature of these allowances have given rise to great disputes. Our author says:—

"On the part of the gas company the whole yearly expenditure is first deducted from the gross receipts, including such items as wear and tear of retorts, loss by meters, rates and taxes, directors' and auditors' salaries, bad debts, &c. The balance which remains is then subject to what are termed arbitrary allowances for tenant, in which his capital is made to consist of the following items:—

1. Capital required to enable him to carry on the works, usually estimated by valuers for the companies at about half the gross expenses for one year.

2. The present value of the meters, retorts, and other stock in trade.

On the capital so arrived at, it is assumed that the tenant would require 5 per cent. for interest and 12½ per cent. for profit, which amount is therefore deducted from the gross value as an arbitrary allowance to the tenant.

On the other hand, the parties usually employed to value for the parishes, contending that directors' and auditors' salaries being already allowed for in the expenses, make this a set-off against the remuneration of the tenant. Considering further the perfect security for payment which the Act of Parliament gives to most gas companies, the means which they have of enforcing payment, and the small amount of risk incurred in carrying on their business, they contend that such an allowance of 17½ per cent. for capital is excessive, and ought not to be more than 10 or at most 15 per cent. Then as to the amount of capital, they seem to have generally allowed the retorts to be stock in trade, but not the meters, which they consider fixtures to the mains, and therefore subject to be rated."

An example of estimates formed on these varying principles is given, from which it is seen how widely these arbitrary deductions vary according to the views adopted by the valuers.

"I now come," he continues, "to the class of deductions comprised under the head of statutable allowances, comprehending all those (such as rates, taxes, insurance, and repairs) which are necessary to enable the premises to command the rent assumed. Here the valuers for gas companies have sought to bring in charges for repairs, or rather for restorations, which are said to be necessary, in addition to those which appear in the annual current accounts. For instance, they claim an annual allowance for the repair of buildings, although the accounts include every farthing which has been expended in such repairs.

They also claim an allowance for insurance of buildings beyond any amount which is actually paid for such a purpose. Besides which they claim an allowance of 2 per cent on the value of all their trade fixtures and utensils, and of 1½ or 2 per cent. on the value of all the mains, for the reproduction of these when worn out. The valuers for parishes, on the other hand, entirely dispute these allowances, and contend that the current expenses provide for such reproduction by having everything renewed as fast as it is worn out and requires to be replaced."

It must be obvious that the system of deducing the amount of rental from the profits has opponents. Apply the principle, they might say, to ordinary dwelling-houses, and objections to it are seen at once. Imagine two bakers' shops, of equal size and value, in the same street; the one occupied by a somnolent sop, careless or crusty, who has no customers and can scarcely make both ends meet; the other by an active, enterprising fellow, rising at everything, like his own yeast, and compelled to join all sorts of land, loan and building societies, to employ his accumulations. Of course no one would think of deducing the letting-value of these houses, *quoad* houses, from their occupiers' profits, such a per-centage on the actual cost of the building as house property should pay, and a rent for the *site*, founded on its value in the market, the situation, fitness for the purpose, &c. would with much less incorrectness show the annual value of the premises.

It may be replied that this is but shifting the difficulty, since to ascertain the proper rent for the site, in the absence of information, the question of profits would have to be returned to.

All that we insist upon is this,—the profit made by a company cannot in all cases be considered a proper datum on which to determine the rental. Though an ill-managed company, perhaps wrongly located in costly premises for which others would gladly pay a high rent, might be able to show that their profits were *nil*, it would be the duty of the surveyor to make the rate, in the words of the Act, on "the rent at which the premises might reasonably be expected to let from year to year, free from all usual rates, tithe commutation rent-charge, if any, and deducting therefrom the probable average annual cost of repairs, insurance and other expenses, if any, necessary to maintain them in a state to command such rent."

Mr. Hughes terminates his observations on this subject, and the book, with the suggestion that,—"considering the many complicated interests which have to be assessed in these days of progressive improvement, it would be desirable if some public officer were appointed to make an assessment every year of the property in gas-works, canals, railways, &c. rateable to the relief of the poor. Such an assessment would require to be varied every year, but the principle of division once settled would be permanent. A vast amount of litigation would be thus saved, and in the end all parties would find it much more satisfactory than the present blindfold system."

* John Weale, Holborn.

PROVINCIAL NEWS.

Southampton.—The English Presbyterian Church here was opened for Divine worship on Friday week. It is in the Geometrical style, and comprises a tower in centre of south front, 18 feet square, with octagonal turrets at the angles. The height to springing of lantern, or bell tower, is 60 feet; entire height to top of finials, 100 feet. On the first floor of the tower is a library, 13 feet square and 18 feet high. The dimensions of the church in the clear of the walls are, 70 feet long, 16 feet wide, and 16 feet high to underside of ridge. At the north end is a lecture-room, 42 feet by 30 feet, and 27 feet high to the ridge; minister's vestry, heating apparatus, &c. The church contains 650 sittings, including a gallery at the south end. The fittings are of deal, stained and varnished. The roof is open and in one span. The walls are of white bricks, with dark grey mortar joints. The windows, doorways, &c. are of Caen stone. The stamped glass to north windows was supplied by Messrs. Powell. Mr. George Richardson, of Southampton, is the builder; and the architects are Messrs Hinves and Bedborough. According to the *Hampshire Advertiser*, a lithographic view of the church, tinted, from a daguerreotype, has just been issued by Mr. E. Roberts, printer, of High-street, Southampton; the profits to be appropriated to the building fund.

Bitterne.—The new church recently consecrated here and called the Church of the Holy Saviour, is in the Early Decorated style, comprising a nave with one aisle, with tower and spire, 110 feet high. The plan has been arranged with the view of enlargement. The present accommodation is 660 sittings, about two-thirds free. The length of nave, including chancel, is 80 feet, aisle 66 feet. The entire width of the church is 46 feet. The seats are of deal, stained; also the timbers of the roof, which is ceiled between them. The walls are built of Swanage stone. The tower and spire are built of the same material. The cost, exclusive of fences, &c. has been about 3,000*l.* raised by subscription. The contract was undertaken by Mr. Gambling, and the edifice was planned and carried out under the directions of Mr. Guillaume, of Southampton, architect.

Liscard.—A new Roman Catholic church has been built here, and was opened on Thursday in week before last. The edifice was designed by Mr. Stephen Robert Eyre, and his late partner, Mr. Hanson. It is of the Decorated style of about the fourteenth century, and consists of a nave 74 feet by 30 feet, south aisle 74 feet by 14 feet, sanctuary 30 feet by 20 feet, lady chapel 13 feet by 12 feet, vestry 20 feet by 14 feet, and tower and spire 130 feet high. The church is constructed to seat 750 persons. The seats are all open plain benches. The sanctuary and lady-chapel floors are laid with Minton's encaustic tiles. It is intended to have a stained window in the sanctuary. The builder is Mr. Hugh Yates, of Liverpool. There are two niches in front of the church, one over the tower doorway, containing a statue of St. Alban, the other the Madonna and Child, standing upon a moulded pedestal, and having a canopied top, with flowing tracery. These statues were executed in Caen stone by Mr. Rossiter, of Liverpool. The cost of this building will be about 2,400*l.*

Swansea.—The new Grammar-school here, lately noticed, is in the Tudor style, with high-pitched roofs and gables, and broad mullioned windows, with fretted glass. There is a bell-tower and clock at the eastern portion of the building. The master's residence is to be constructed beyond this part. The entire structure, according to the *Cambrian*, will be 210 feet long, and formed of native sandstone in random-range work, with Bath stone dressings, the whole set in Aberthaw cement. The roofs are covered with slates from the De la Bole quarries, and the whole of the ironwork is galvanized. The building is ornamented with stained glass in the windows.

Llangennech.—In September, 1852, the parish church of Llangennech, near Llanelly, was taken down, and a new building has been erected by Messrs. James and Price, of Cardiff, the contractors for the Normal College, Carmarthen, after a design by Mr. R. K. Penson, the county

surveyor. The church is situated on the summit of a considerable elevation. The church is built of stone, quarried in the neighbourhood, the columns and dressings being of Bath stone. It consists of a nave and chancel, a side aisle, and a small transept appropriated to children. The building is a plain Gothic edifice. The interior is seated with low open benches with elbows: the chancel is occupied by the choir. The roof is open, and is ornamented with Gothic spandrels, the whole of the interior woodwork being stained and varnished to look like dark oak. The cost of the erection is about 1,000*l.* The church will seat about 300, including children and choir.

Brecon.—At the Brecon sessions various bridges came under consideration. For the erection of Rhyd-Llydon-bridge there were nine tenders. Mr. Stephenson (late of the firm of Dredge and Stephenson) tendered for an iron bridge, the plan and specification for which were handed in. The iron work he would undertake for 210*l.* and the masonry, which he would rather have nothing to do with, he estimated at 85*l.* making a total of 295*l.* The tender of Mr. Dredge was somewhat higher. The lowest tender for a stone bridge was 295*l.* There was also a tender for a wooden bridge with stone piers. The plan was based upon Mr. Herring's system of bending massive oak balk into the form of an arch, one of which was exhibited. The bench were, however, of opinion that they would not be justified in making experiments, by adopting a plan, the efficacy of which had never been tried upon a large scale, and the tender was rejected. Mr. Stephenson's tender was selected on condition that the whole amount should be 295*l.* and the bridge be kept in repair for seven years. Abercamlais-bridge was stated to be progressing satisfactorily. For the erection of Sychrhyd-bridge, the tender of Mr. Wm. Williams, for 52*l.* was accepted, being the lowest of several sent in. For the erection of Upper Chapel-bridge, the surveyor submitted a plan, specification, &c. For this and Cwmdu, tenders for wood and stone bridges were ordered to be advertised for. At Llanddewi-'r-cwm-bridge, the surveyor stated that a chasm 20 feet deep and 77 feet long had been made by the late floods, every vestige of the bridge being carried away. He submitted a plan of the proposed structure and intended alterations. The plans, &c. for the erection of Llandevailog-bridge were referred to the bridge magistrates of the district.

Cardiff.—Last week, an inquest was held on view of two bodies—a labourer, aged 45, and a boy aged 12—whose deaths were caused by the falling of an arch formed over an oven at Blackweir, near this town. From evidence adduced, it appears that this arch, which was composed of river-stones, was turned over a centering of sand and ashes, which these poor fellows were pushing out from the inside, by order of the foreman, when the mortar was perfectly wet. The coroner, in summing up, observed "that the foreman's conduct might not call for a verdict of manslaughter, but it was highly censurable, it being madness to think of removing the centering at so early a period." Verdict, accidental death.

Bala.—The foundation-stone of a new church was laid here on the 22nd ult. by "representatives of three generations" of the Price family. Mr. Ferrey is the architect, and Mr. Ebenezer Thomas, the builder.

Newcastle (Staffordshire).—Preparations for the commencement of the works of the new covered market are in active progress: nearly all the old buildings on the site are in course of being taken down and cleared away. The new buildings will be erected by Mr. Chapman, who gave a guarantee estimate with the design, to be completed by 25th March next. The site of the Old Crown Inn, in Penkhull-street, will form the principal front.——An elementary drawing school, or school of design, with a master appointed by the Board of Trade, is being opened in this town.

Bromsgrove.—The ground for the site of a church at Farefield, in the parish of Bellbroughton, is now staked out, and the materials for the building are being brought together. The land for the site, with the old buildings upon it, was a gift of Lord Ward.

Birmingham.—A new synagogue was opened here on Thursday in week before last. The building is situated in a newly formed thoroughfare, called Wrottesley-street, leading from Smallbrook-street towards the Ladywell Baths. In the centre of the building, in the interior, is the "tabernacle," a raised enclosure set apart for the use of the choir. The "ark" is placed in the centre of the back wall, and consists of an enclosed niche, before the door of which hangs a crimson velvet curtain. Upon it a royal crown is worked in gold, and underneath this is an emblem of the breast-plate which Aaron wore when he entered the ark, bearing on it in Hebrew characters the words "Know before whom thou standest." Round the ark and tabernacle columns of artificial marble are disposed, from the top of which spring gas-lights. There is a gallery, devoted exclusively to the use of the daughters of Israel, who are "supposed" to be hidden from the gaze of the worshippers below by a screen of open iron-work. The architect is Mr. Norton.

Leicester.—The new building designed by Mr. J. Medland, of Gloucester, for a Temperance and Music Hall, with a Temperance Hotel adjoining, was inaugurated on Monday fortnight by a crowded meeting on temperance principles, the mayor in the chair.

Liverpool.—At a late meeting of the Improvement Committee, it was decided to recommend to the council to apply to Parliament for a Bill to permit the following improvements being made:—1. A high level bridge from Dale-street to Shaw's-brow. 2. To widen Hatton-garden. 3. To widen Water-street. 4. To widen Hardman-street, Rodney-street.——The erection of the large baths at Cornwallis-street having rendered the original baths in Frederick-street unnecessary, the corporation have resolved to convert the last-named building into washhouses for the poor. The new washhouses are nearly completed. Catherine Wilkinson, who originated the idea of public baths and washhouses, and who for some time was superintendent of the baths and washhouses at Frederick-street, is now, says the *Albion*, a candidate for the situation of matron at the washhouses.

Kirkham.—Mr. Armstead, of Preston, according to the local *Chronicle*, has just erected at the south-east corner of the burial-ground of the parish church of Kirkham, a monument from plans by Mr. R. T. Owen, of Liverpool, architect, who obtained the premium offered for the best design. The stone of which the monument is executed is from the Catlow quarries of Messrs. T. and B. Chaffer, of Burnley.

Rotherham.—Workmen are engaged in carrying out the main sewers which the Local Board of Health have contracted for. The excavation for the principal of these sewers is at such a depth that, in front of the Town-hall, the workmen have been able to carry the drain under the old foundation-walls of the college or monastery which centuries ago occupied that site, without the necessity of removing the walls. In digging the excavation in a portion of the ground which it is supposed was formerly one of the cellars of the monastery, they have discovered a small iron crucible, set in a furnace of brick, and with three flues communicating.

Bradford.—The new church of St. Andrew's, North Horton, was consecrated last week. It is in the Middle Pointed style, and consists of nave with aisles, chancel, tower to north of east end of north aisle, north porch, &c. and affords accommodation for 550 adults and 250 children; cost, with site, a little more than 3,000*l.* The dimensions are as follow:—Nave and aisles, 76 feet long, 51 feet wide; chancel, 36 feet long, 19 feet wide; tower, 19½ feet square, 65 feet high. Messrs. Mallinson and Healey were the architects. The contractors for the masons' work were Messrs. Patchett, Greenwood, Barraclough, and Firth; for the joiners' work, Messrs. J. and J. Wilsons, of Manningham.

Tarrant Keyneston.—The parish church of Tarrant Keyneston, which was consecrated and reopened on Friday fortnight, has been rebuilt chiefly at the expense of Sir John J. Smith, Bart. from the designs and under the superintendence of Mr. T. H. Wyatt, the diocesan architect. It consists of tower, nave, chancel, chancel aisle, north aisle, vestry, and south porch, in the Perpendicular style. The walls are of stone and flint, the doors and windows and other dressings being of Bath stone. The roofs are covered with a tile from the neighbourhood of Donhead. The timbers of the roof are open, and the whole of the woodwork has been stained with asphalte. There is a new organ in the tower, built by Messrs. Gray and Davison, of London. The windows in the chancel have been filled with painted glass—that at the east end by Mr. Miller, of London, and those on the south side by Messrs. Powell and Co. Whitefriars.

Lesmahagow.—Preparations are being made for commencing the new line of railway from the Motherwell junction of the Caledonian Railway to Lesmahagow. The height of the bridge over the Nethan will considerably exceed that of the high level bridge of Newcastle. The latter is 112 feet above high-water mark, but the bridge over the Nethan is to be 140 feet high.

Elgin.—The South Free Church, from the design of Messrs. A. and W. Reid, architects, according to the *Banffshire Journal*, is fast hastening to completion. The carpenters have been busy at work for several weeks back, and the various pews are now in course of erection. It is expected this new place of worship will be ready for opening by end of October.

THE SULTAN OF TURKEY'S NEW PALACE.

The Sultan is now building a new palace at Dolma Baktchè, and annexed we give our readers a view of the front next the Bosphorus, engraved from a calotype. The architect is an Armenian, the son of the Sultan's builder: he studied in France for a short time. The palace is of stone and marble: the workmanship is very common: the frontage extends along the Bosphorus from Dolma Baktchè to Beshik Tash, and must have a façade of upwards of 1,000 feet: the situation is exquisite. The palace is more like a town in extent, covering in the rear something exorbitantly great. It was here that Mr. W. J. Smith erected for his Imperial Majesty a winter-garden and kiosk,* and furnished it in the European style, with crystal fountain, candelabra, and chandeliers lighted with gas. The chimney-pieces are of crimson-coloured crystal and painted china: the floor is of china, and the basin of fountain enamelled slate, exquisitely painted with flowers. The furniture was made by Messrs. Holland, of Mount-street.

The view shows the centre of the palace, which contains one large hall, 125 feet in height to centre of dome; inside measure, 150 feet by 130. This is intended for receptions: it is magnificently decorated in ornamental painting and gilding. The dome springs from coupled columns of the Corinthian order. Over the columns on three sides of the hall, called the Divan Yerry, and under the arches which support the dome, are galleries for museums. The principal floor comprises vast halls and apartments fitted up in a most costly manner in gilding and painting, executed by Italians and natives. The taste of some of the interior finishing is questionable. The baths are fitted up with Egyptian alabaster. The roof is covered with lead: all the Sultan's palaces, and only these, are covered with that metal. The palace is built on piles. The great staircase is lighted by a large skylight of crimson-coloured glass. The ceilings are generally low. The harem of the palace contains apartments for 300 or 400 women.

The palace is approached through a costly triumphal gateway, of which a view was given in the *Illustrated News* last week.

* A correspondent who signs himself "A Native of Turkey," suggests, with reference to our notice of the new kiosk lately erected at Tophana, in Constantinople, that we mislead by saying "a *kiosk* is what we should call in England a *casino*," and that we convey, by stating this, to the mind of our readers, a very erroneous idea of the Turks and their habits and customs. "The followers of Mahomed entertain no more the idea of building a casino than the English of having a *harem*; and what is understood by *casino* in England is widely different from the meaning attached to *kiosk* in Turkey. This latter term means pavilion or summer-house. The Turks usually build one or two isolated rooms at the top of their houses, which they call *kiosk*, and where they spend the evening, in order to enjoy the fresh breeze. The richer class of the inhabitants place their *kiosk* or pavilion at the extremity of the garden attached to their houses; and by an extension of the same idea they call *kiosk* all the summer-houses erected for the Sultan, and where he spends the hottest part of the day." We need not tell our readers, although we may a native of Turkey, that this is exactly what we mean by a casino in England. The application of the latter term to dancing-rooms (of which our correspondent appears to be thinking) is quite a modern abuse.



THE SULTAN OF TURKEY'S NEW PALACE.

SEWAGE AND DRAINAGE, AND A PLAN OF SEWAGE.

ALTHOUGH not an engineer, I venture to address the public, through your columns, on the subject of sewage, which, as now carried on, is surrounded with difficulties that seem only to increase as we attempt to meet them. This, I believe, may be attributed to the circumstance of the system at present adopted being radically defective.

The difficulties in part arise from our not having kept in view the distinction between sewage and drainage.

By drainage, I understand the removal of water falling from above, as rain, or rising in the earth, as springs. Nature effects this by gravitation, which carries the water along rivers, or through large or small interstices in the soil. Man copies the operations of nature, and digs artificial stream-beds, or trenches, and makes galleries and other open spaces in the land to facilitate the passage of water by its gravitation. There is nothing offensive or hurtful in drainage. Running water, if clear, is agreeable to the senses, and if loaded with sand and clay, and not so pleasant to the eye, is, at all events, not offensive to the sense of smell. Our system of drainage is effectual and satisfactory.

But with sewage we have not been so fortunate. By sewage, I mean the removal of matter from water-closets, the wash-tub, &c. including blood from slaughter-houses, and the refuse from gas-works, and other such sources. All these kinds of matter are offensive to the human senses, and dangerous to man. His natural impulse is to cast them away, or to escape from them. Even their touch is pollution, to be removed only by a large quantity of water, or free exposure to a large volume of air. And these are the means that nature employs for rendering them harmless. But it is *essential* that the quantity of matter be very minute in comparison with the volume of water or air. And so long as man can follow nature in this respect, he need scarcely give a thought to sewage. The inhabitants of a lone house in open fields find sewage, or the disposal of refuse matter, quite easy and simple. Throw it in the fields, and the air will soon purify it. The case is the same with a family living on the banks of a small river.

But should a city spring up on the banks of that river, it will no longer be safe or *natural* to combine the sewage with the drainage; for the essential condition will cease to exist; there will be an immense increase of sewage, while the drainage will continue about the same. The people will become sensible that there is something wrong. They will, if the stream be small enough, cover it in to hide it from view, as was done with the Fleet-ditch, and, by the same and other means, endeavour to prevent the nose giving notice of its presence; and will feel convinced that it would be well if it were away from them, or they could get away from it. Nevertheless, we know from experience they will continue to combine their sewage and drainage. The first family that settled on the banks of the river adopted this course, and the millions of people, from the force of example and habit, do the same. Thus they fall into a bad system of sewage, and, at the same time, spoil the drainage of the locality. I think it will be at once conceded that if the drainage of London, the removal of rainwater, were, as it ought to be, kept distinct from the sewage, the drains would be quite inoffensive, and the main drain, the river Thames, vastly improved. If London were on the banks of the Mississippi, or were no larger than a small market-town, the drainage and sewage *might* be advantageously combined. But as it is, the drainage is spoilt, and the sewage made worse than it needs be.

It must be borne in mind that if a large proportion of water renders excrementitious matter harmless, a small quantity makes it more offensive and injurious. A cesspool containing night-soil is both disagreeable and hurtful near the abode of men; but mix it with ten or twelve times its volume of clean water, and it becomes much more offensive and dangerous. Something of this kind is done in combining the sewage with the drainage of large towns. The sewers are elongated cesspools of a very filthy kind. If we imagine a monster giant, with a spade a quarter of a mile square, to take a thin slice off the surface of the city of London, we may feel assured he would think us dirty animals to live amongst such muck, and would shrink from even putting his foot in passing on the spot where we dwell.

Our object should be to remove all refuse matter without increasing its bulk more than can be avoided. Unfortunately, in removing the matter from the centre of a town it is necessary to carry it past the dwellings of those who live around; but a plan can be suggested by which they can all be kept to the windward of it, the next best arrangement to their being away from it altogether.

To carry out my plan, the drainage, or the removal of rain or surface water, should be kept distinct from the sewage. The matter to be got rid of by the latter should not be increased in volume more than can be avoided, and should be kept in as narrow a space as possible. A 3-inch pipe would be quite large enough for the principal sewage course of an ordinary sized house, into which smaller sink-pipes might be conveyed. It might communicate with a 6-inch or 9-inch pipe running through the street. The street-pipes might all enter a receptacle, a small air-tight well, at the lowest level of a district. From the bottom of this receptacle a pipe of earthenware or iron, or any other suitable material, can be conveyed to a large receptacle placed in some convenient spot out of London. It might be built of bricks made on the spot. It would answer best, I think, if in the shape of a tunnel or double arch, closed at the ends, and it must be air-tight. A small amount of leakage would not be important, as the arrangement would cause the leakage to be inwards. The sewage-pipes of several districts, or of a whole town, might be made to communicate with each other and with the same *large* receptacle. From the upper part of it I would continually draw out air; and the result would be, that, besides the refuse matter, a current of air would be constantly passing down the sewage-pipes to the large receptacle, which would prevent any dangerous or offensive effluvia escaping amongst the inhabitants, who would always be on the safe side—that is, to windward of the contents of the sewers.

As large volumes of air must be drawn through the pipes and out of the receptacle, I doubt whether the ordinary air-pump, with delicate valves and other machinery likely to get out of order, would answer the purpose. We want something rough and ready. I think a steam-engine consisting of a very large boiler or boilers, and several chambers, built of brick or other cheap and suitable materials, to do the duty of a cylinder, but without a piston and its appliances, would answer the purpose. Each chamber would require three pipes with valves, —a steam-pipe, a waste-pipe, and a pipe communicating with the receptacle. To set the engine at work, open the waste-pipe, which should be near the bottom of the chamber, and the steam-pipe, placed near the top. When the air is all driven out, and the chamber filled with steam, shut off both these pipes, and open the communication with the receptacle, from which the air would flow into the chamber to supply the place of the steam as it condensed. The admission of cold air through the sewage-pipes and receptacle might be sufficient to condense the steam, but should it not cause condensation to take place quickly enough, a fine shower of cold water might be admitted. When the chamber became filled with air, the connection between the two could be cut off, and the steam waste pipes reopened, and the process repeated. While condensation was going on in, and the air flowing into, one chamber, steam could be admitted into another. Thus air would be continually passing from the receptacle, and flowing with some force along the sewage-pipes to keep up the supply.

The next point is the disposal of the matter collected at the bottom of the receptacle. It is difficult to say of what consistency this would be. The large volume of air that would pass over and with it would doubtless carry off a considerable portion of the watery particles, and reduce the remaining matter to a condition nearer to that of a solid mass; and whether it would be best to allow it to remain in the receptacle, or to let it run out and evaporate in the open air, is, I think, a question that could be satisfactorily decided only by experience. Be this as it may, the matter, being free from the silt washed down by surface water, when drainage is combined with sewage, would form a very valuable manure, second, if not equal, to guano, and would find a ready market. To facilitate the removal of the manure and also the obtaining of coal, of which a large quantity would be consumed, the receptacle should be on the bank of a river, or near a canal or railway; or, if this were not practicable, a canal or railway should be made, to place it in communication with such means of transit. The receptacle should be so arranged that the manure might be wheeled off, and "tipped" into barges or other vehicles, for its conveyance to the agricultural districts.

I must rest satisfied now with explaining the principles of my plan; and should it excite the attention of men of science and the public, I shall be glad to enter more fully into details. There is but one important objection that I can conceive, and that is the large consumption of coal; but to counterbalance this, there is the production of a large supply of rich and valuable manure. I dare be sanguine enough to think, that when the plan shall have been fairly carried out and received all the benefit that improvements suggested by actual experience of its inaction must afford, it will make the at present difficult and unsatisfactory subject of sewage easy and simple; and that it will in the manure supply a valuable commodity that may ultimately not only pay the expenses of a town's sewage, but also yield a surplus revenue.

HENRY G. COOPER.

NOTES AND QUERIES.

ARCHITECTURAL AND ARTISTICAL.

French Architecture.—Wren, writing from Paris ("Parentalia," page 261, edit. 1750), says,—

"The women, as they make here the language and fashions, and meddle with politicks and philosophy, so they sway also in architecture: works of filgrand and little knacks are in great vogue."

These strictures of our great master on the architecture of Paris in the seventeenth century are, at least, as applicable to that of the nineteenth century. Ingenious and attractive as our friends across the Channel certainly are in their details, I apprehend that "little knacks" are still "in great vogue." But for their size there are few recent works in Paris that have any character of grandeur.

The term "filgrand," I presume, is equivalent to our word filigree.

Costume.—Dr. Nott speaks in his "Notes on the Odes of Hafiz," of "the *refaight*, or that kind of bolster which the Persian ladies fix to the under garment, and which was to produce a certain roundness which they thought becoming." Thus, it appears, that "bussels" are of Persian origin. The worthy editor will kindly consider this a *note artistical*. S.

Hugh May.—In reply to the inquiry for information concerning this architect (p. 584, *ante*), whom Wren succeeded at Windsor Castle in 1684, a correspondent, "G. L. P." has obligingly forwarded to us a rubbing of a small brass ($7\frac{1}{4}$ inches by 6 inches) in Mid Lavant Church, near Chichester, Sussex, which is thus inscribed:—

"Hugh May, Esq. Comptroller of the Works to King Charles the Second, Comptroller to the Castle of Windsor and by his Majtie appointed to be sole Architect in Contriving and Governing the Works in the Great Alterations made by his Majtie in that Castle, dyed the 24th day of February $168\frac{3}{4}$ in the sixty-second yeare of his age."

The brass is affixed to a board on the south side of the chancel, together with three others, to Constance May, the wife of John May, esq. 1678; Mary May, second wife of Richard May, esq. recorder of Chichester, $167\frac{9}{10}$; and Hester May, daughter of Richard May, 1667.

There is a small brass on the altar-step to Hester May, apparently the first wife of the Richard May already mentioned, and a monu-

ment on the north side of the chancel, with the following inscription:—

"Here
Lies the Body of Dame Mary May second Wife to Sr. John May of Rawmere the onely surviving Sister and sole Heire unto Sr. John Morley of Brooms, and daughter to Sr. John Morley of Chichester, Son to Sr. Edward Morley a second Brother of the Family of Halnaker Place, Piously contemplating ye uncertainty of this life, among other Solemn Preparations for her Funerall Obsequies, Shee erected this Monument in ye time of her Life, in ye year of Our Lord 1676. Shee departed this life in ye year of Our Lord 1681, in ye 41st year of her Age."

TO FIND THE STRENGTH OF WROUGHT IRON-PLATE GIRDERS.

At the time when the erection of iron tubular bridges was contemplated, many experiments were made and mathematical investigations gone into, to ascertain the strength of large girders formed of wrought-iron plates, rivetted together in a particular manner, some of which are described in the parliamentary report on the use of iron in railway structures. The method adopted by Mr. Eaton Hodgkinson, and given in that report, for calculating the strength of the Conway and Britannia bridges, is also easy of application to the ordinary I girder formed of rivetted plates of wrought-iron; and as these girders are frequently used in preference to cast-iron girders, it will be useful to give your readers the formulæ for calculation.

In the first place, we will show how these formulæ are obtained.



The adjoining figure represents the transverse section, through the centre of a girder formed of wrought-iron plates, rivetted together by means of angle irons at top and bottom; and we will suppose the upper and lower horizontal plates to be equal, and that the resistance to compression is equal to the resistance to extension; in which case the neutral line passes through the centre of the section at N, about which the moments of the forces are to be taken.

1st. To find the resistance of the horizontal plate AB.

Let f be the force exerted by the particles in a square inch of section, and at the distance of 1 inch from N; and let t be the thickness of the plate AB in inches; then the force exerted by $AB = f \times t \times AB \times CN$, and the moment of this force about $N = f \times t \times AB \times (CN)^2$.

2nd. To find the resistance of the vertical plate CN.

Let s be the thickness of the plate CN in inches: take a *very* small portion of the length CN at any distance x from N, and call this portion dx; then the force exerted by $dx = f \times s \times x \times dx$, and the moment of this force about $N = f \times s \times x^2 \times dx$: now the resistance of the whole vertical plate CN, is the sum of the resistance of these elementary portions; therefore the moment about $N = f \times s \times \int x^2 dx = f \times s \times \frac{1}{3} (CN)^3$, the integral being taken from $x = o$ to $x = CN$.

3rd. To find the resistance of one of the angle-irons.

Let a be the area of section of one angle-iron in square inches; the force exerted by an angle-iron $= f \times a \times CN$, and the moment of this force about $N = f \times a \times (CN)^2$.

We have, then, by the principle of the lever, to equate the sum of all these moments to one-half the weight to be laid on the centre of the girder, multiplied by one-half the length of the girder.

Let w be the weight laid on the centre of the girder; let l be its length; and let $m \times f$ be the sum of all the moments: then we have—

$$m \times f = \frac{w}{2} \times \frac{l}{2}$$

Now it is found by experiment that $f \times CN$ is a constant quantity, and equals eight tons, CN being expressed in inches; whence f is found for each particular case.

The following is the formula we obtain for calculating the strength of a wrought-iron girder, all the dimensions being in inches:—

$$w = \frac{4f \times (CN)^2 \times (2t \times AB + \frac{2}{3}s \times CN + 4a)}{l}$$

w being the weight which may be safely laid upon the centre of the girder, and which is one-half the weight which may be distributed over the whole length of the girder.

E. W. Tarn, M.A.

THE HALLS OF OUR ANCESTORS.

NEW-PLACE, IPSWICH.

In pulling down, a short time since, a portion of an old house in the neighbourhood of Ipswich, which has, up to the present time, been known in that locality as "New-place," the workmen made a discovery which may probably interest some of your archæological readers.

The house, built about the beginning of the sixteenth century, no doubt was originally what is termed a grange; but for some time has been untenanted, being situated on an "off-farm." It consisted of a porch, with rooms over, going the whole height of the building, and a right wing three stories high, the whole of which is built in brick. The left wing (two stories high) was lath and plaster, but appears to have been erected about the same time as the other portions. This was, however, in so dilapidated a condition, that, with the consent of my client, I took it down, and am building a left wing in brick to correspond with what still remains on the right. It was in pulling this down that we made the following discovery in the lower room, originally the dining-hall. On the right, in entering this room, was a large fireplace about 8 feet wide and 3 feet deep; on the left the window; and opposite the door, along a plain wall, ran draped panelling 4 feet high, at the lower part of which there appeared to have been formerly attached a bench. Upon removing the plaster above the panelling, we found that it was not the original face of the wall, but that it had been previously plastered between the oak studs; and in the centre compartment, immediately opposite the entrance-door, and probably just above where the master of the house took his seat at table, was the following inscription, in rather a rude black letter:—

He that
seteth do
wn to mete
and leteth
grace pas
seteth do
wn leik
an oxe and
Ryseth leik
an ase.

The plastering was, unfortunately, too much cracked to admit of its being preserved, but I had it carefully traced, and an exact fac-simile made on paper. The space occupied by the inscription was 3 feet 3 inches in length and 10 inches in breadth. Perhaps some of your readers can inform me whether the same sentence has ever been met with elsewhere. There is nothing else worthy of particular notice about the building, and no further writing or illumination of any kind was observable about the place.

R. M. Phipson.

CONDITION OF LONDON SOUTH OF THE THAMES.

No one can read your remarks and see the illustrations in your journal from time to time without feeling thankful for the information on sanitary matters you convey to the public (which must be at no small pains and trouble to yourself), and regret and indignation at the neglect of others. But your attention has been so much engrossed by the sad state of things on your side of the water, that we in Surrey have scarcely obtained a passing glance. Bad as may be the state of the localities you have visited, it is equalled by that of Rotherhithe, Bermondsey, Southwark, and Lambeth. In the first-named parish there are many places without drains, and but little water, except at overflows of land or river tides: the second is improving a little, although but slowly: Southwark, even in some of its main streets, is insufferable: Long-lane, Kent-street, and its tributaries, are most offensive by dirt and bad drains, defective stench-traps, and badly-paved streets: Lambeth (ever famous) is known to all the world who visit its banks, for its abominations in such matters from centre to circumference.

Pray give us a starting visit some day and let us hear what you think of us in Surrey, and you will have the gratitude of the population.

H. G. a Resident and Occupier.

P.S. The statistics of the last week's cholera show the state of the south side of the river.

THE ACCIDENT AT THE "GREAT WESTERN" ENGINE-HOUSE.

The daily papers have informed our readers of a distressing accident at the new engine-house, now in course of construction for the Great Western Railway Company, by Messrs. Locke and Nesham, under Mr. Brunel, by which one man, John Dring, was unfortunately killed, and several others injured. The building is a parallelogram, about 700 feet long and 60 feet wide in the clear; the sides formed of brick piers at regular intervals, carrying plates, on which rest iron principals to form the roof. The height to the under side of the tie-beam is 20 feet, and the rise of the roof about 15 feet. Twenty-nine of the principals had been put into their places, by means of a derick 45 feet high, and the thirtieth was being fixed, when that and eight others came down. Each principal weighed about 1½ ton, and they were braced together with deals.

An inquest was held on the 11th, before Mr. Wakley, and a verdict of "Accidental death" recorded. The resident engineer is Mr. Gainsford.

As to the cause of the accident, the weight of evidence appears to be in favour of the supposition that the derick was thrown over by the breaking of a rope, and brought down all the principals within its radius.

CHURCH OF ALL SAINTS, BRIGHTON.

This church was consecrated on the 29th Sept. by the Bishop of Chichester, assisted by the Archdeacons Hare and Garbett, the Rev. the Vicar of Brighton, the Rev. Mr. Coombe, the incumbent, and a numerous body of clergy. It is situated in the outskirts of the town, on the hill which flanks the railway terminus towards the west, and, with its three gables, forms a striking object from the opposite, or Race hill. The tower is still unfinished. The church had been previously licensed for public worship, so that its qualities for accommodating a congregation have already been pretty well tested. The architect is Mr. Carpenter. It is in the Decorated style. The superficial dimensions are—breadth of nave, 28 feet; of north aisle, 20 feet 8 inches; of south aisle, 24 feet 2 inches; of chancel, 24 feet; depth of chancel, 36 feet 6 inches; extreme length, 140 feet. The tower is placed at the west of the north aisle, and is open below to the church: the principal pier which supports it, within the area of the building, is well worked and massive. The roof is of deal, stained a somewhat dark hue. The exterior work is of splint flint, with Caen stone quoins: the details without and within are all extremely simple. The seats are in character, being low and plain, and stained of the same hue as the roof. Within it is said to have an air which the English call "comfortable:" it is not lofty. The light is more than plentiful, and would well bear the interruption of stained glass. Colour is also wanted in the building. The collection of 81*l.* is, we trust, an earnest of the speedy extinction of the debt which still presses heavily on the church, and of something more, the further decoration of that which has been happily begun to the praise and glory of God.

Theatre Royal Adelphi.—A very pretty first scene has been painted for an adaptation by Mr. Webster of the *Fils de Famille*, called "The Discarded Son." It represents the exterior of a French *Guinguette*, the "Golden Pumpkin," with rustic porch, and the town of Nancy in the distance. We all remember a dozen such. The piece itself is exceedingly well constructed and admirably acted, especially by Mr. Leigh Murray and Mrs. Keeley.

THE SOCIETY OF ARTS AND MECHANICS' INSTITUTES.

THE union of literary, scientific, and mechanics' institutions continues to increase in importance and magnitude. During the past quarter 17 institutions have joined the association. At that date there were 279 institutions in union. Of these, 261 were in England; thus distributed:—Northern district, 52; western, 22; midland, 33; eastern, including Middlesex, 56; southern, 59; and south-western, 39. In Wales there were 7; in Scotland, 14; and in Ireland, 7. These institutions are of every kind, and the most perfect unanimity of action is said to prevail. At first there was an evident lethargy in the action of some of the institutions; but now, as the advantages of the union begin to be realized, there is greater vigour and activity. There can be no question that if a combination of this extent and character be carried out in sincerity,—if it be pursued on the system of mutual exchanges, as it has been all along pointed out should be the case, not depending too much on the central body,—that a greater healthiness of tone, as well as a more extended range of usefulness will be the result.

CLAPHAM CHURCHYARD AND VAUXHALL DITCH.

PASSING through Clapham Churchyard the other morning, I was struck with the exceedingly powerful and offensive effluvium which unquestionably proceeded from the graves. The ground appears to be fully occupied, and largely so by family vaults.

Wishing to hear more on the subject, I accosted the first passer by, who assured me that early in the morning (and he added that he passed daily) the stench was insufferable, and that he was frequently obliged to hold his hand to his mouth.

This churchyard is an important thoroughfare for the locality. It is on the summit of a rising piece of ground, which has the Wandsworth-road for its base. Midway on the slope are parallel rows of cottages which must inevitably receive the drainage from above. Thus far this statement would probably be but an ordinary one, but when it is coupled with the fact that in 1849 one of the most deadly and frightful instances of the ravages of cholera took place in the Wandsworth-road, within a few score yards of this spot, I would submit that it imperatively calls upon the authorities to consider the matter.

I would also beg to say a word respecting that filthiest of ditches passing through Vauxhall, and which is known as the river Effra. The odour from this place is at times sickening, and its tribute to the Thames one of the foulest. Added to this, the first case of cholera in the district occurred within a stone's throw from this place, which certainly might be closed to a great extent.

This locality is now most populous. Our only refuge is the press. P. M. H.

SPECULATING BUILDERS.

Rutley v. *Hendrey*.—In the Sheriffs' Court, Guildhall, on the 3rd inst. an action was tried before Mr. Ryland, to recover damages for breach of an agreement, reduced to 50*l*. so as to bring it within the jurisdiction of the Court. Mr. Hawkins, on behalf of the plaintiff, in a humorous speech, described that in September, 1851, he had called, by appointment, at the defendant's office, in St. Pancras-lane, City, with the intention of entering into an agreement for a lease of a public-house, with stabling, purposed to be built facing the railway station at Epsom, and to be properly completed by the 25th day of March following; upon which occasion a highly-coloured elevation only was exhibited by the defendant, he alleging an unusual pressure of business had prevented him completing the detailed plans and specification, but giving positive assurances the building should be erected in the best manner. His client, fully believing the same would be carried out in its integrity, had bargained to pay the sum of 90*l*. per annum for a term of twenty-one years (the payment of which had been hitherto strictly exacted), and to keep the premises in repair; but on entering into possession, he found the house not only incomplete, but totally different from his expectations; and further, to increase his chagrin, the walls admitting the wet in nearly every part, the roof doing duty as a cullender, and the proverbial difficulty of looking through a brick wall made perfectly easy, owing to the fissures caused by settlements of the walls.

Mr. Charles Langlands and Mr. Benjamin Haynes (surveyors) confirmed the major part of the counsel's statement, and asserted the house was unfit for occupation, being alike bad in design and construction. The plaintiff, with several other witnesses, proved the injuries that had been sustained through the non-completion of the premises by the time agreed on, and the difficulty experienced in gaining access to the back yard and stables, the floors of the latter having been dug out to obtain sufficient height for the horses standing therein; and, from an absence of drainage, the water had flowed in to such an extent as to be detrimental to the health of the inmates.

Mr. Sleigh, counsel for the defendant, endeavoured to stop the case upon technical points, which were overruled by his Honour, and thereupon strove to rebut the evidence adduced by calling the defendant and his builder, who, however, failed, the latter merely asserting he had complied with the terms of the specification.

His Honour immediately gave judgment for the full amount claimed, and observed the case should properly have been tried in the Superior Courts, when larger damages would undoubtedly have been obtained.

THE MIDDLESEX BRICKMAKERS.

FOR the last three years, during the brickmaking season, the conduct of the men employed in the various brickfields in the suburbs of the metropolis has been not only vexatious and injurious to their masters, but has entailed no little extra expense and disappointment no the building trade. The County Courts of Brompton, Marylebone, and Brentford have been, and are, constantly occupied in settling their disputes; and the summonses taken out by publicans against the gangers for liquors drunk by the men in frightful quantities are a fair index of the source of the evil.

The strikes of the men are unlike most trade strikes—for increase of pay or for shorter hours,—for the masters have conceded most demands of the above nature. The stoppage of work arises usually from pure mischief and fits of idleness. From one of the masters' statement to the Judge of the County Court of Brompton, the men have partially left off drinking beer and taken to draughts of rum and gin, under the effects of which they continue in drunken rioting for weeks. The "back-pence" stopped by the masters, and forfeited by the law laid down by the County Courts, failed to abate the evil; and, by the advice of the Judge of the County Court, the penalties of the Act, called the "Labourers and Artificers Act," have been successfully put in force—successfully, so far as a conviction goes; but it is doubtful if it will lead the men to more industrious and sober ways.

At the Hammersmith Police Court, last week, Joseph Sutter, an off-bearer in Smith's brickfield, was charged by Mr. Sellins, manager to Mr. Smith, with having absented himself from his master's employment before his contract was completed. It seemed that he had previously been summoned for a like offence, but, upon promise of amendment, he was forgiven. He soon, however, again absented himself. Sellins assured the magistrate that the prisoner had prevented the making of no fewer than 100,000 bricks; and as each gang was paid at the rate of 4*s*. 4*d*. per 1,000, it had consequently been a serious loss to the other men who could not go on without a man in his place. He stated that through the bad conduct of the men and the scarcity of brickmakers, they had been unable to satisfy their contracts, and builders were in the like predicament.

The defence set up was, that there was no "pug-boy" in the gang, and they could not go on without this young gentleman. This allegation, however, was denied; upon which he cried for mercy, for the sake of his family. The magistrate said this was a case in which no excuse should be allowed: prisoner had injured his employer and fellow-workmen. He would see if he could not put a stop to such proceedings, and would commit the prisoner for the full term—three months' imprisonment, with hard labour.

THE THAMES AT PUTNEY.—The estate known as the Cedars and College of Civil Engineers, at the end of Putney-bridge, was bought some time ago by the Conservative Land Society, and all the lots have been taken. The whole of this fine estate being now disposed of, the operations for the erection of a river wall, and a terrace with ornamental gardens, have been commenced under the directions of Mr. Morgan, the surveyor, and Mr. Tarte, the contractor. When this terrace shall have been completed, it will form an important improvement on the river Thames. The country is being sadly defaced by Building and Land Societies. We hope we may here find an exception.

Miscellanea.

MUSEUM OF ECONOMIC GEOLOGY.—The third session of the Government School of Science applied to mining and the arts, superintended by the Department of Science and Art of the Board of Trade, was opened on Saturday in last week, at the Geological Museum in Piccadilly, when Professor Edward Forbes delivered an introductory lecture "On the Instructional Uses to which Museums might be advantageously applied." Towards the conclusion he said he could not help hoping that the time would come when every British town of moderate size would be able to boast of possessing public institutions for the education and instruction of its adult as well as its youthful and childish population—when it should have a well-organized museum—when it should have a collection of natural bodies, displayed, not with regard to show or curiosity, but according to their illustration of the analogies and affinities of organised and unorganised objects, so that the visitor might at a glance learn something of the laws of nature—wherein the products of the district, animate and inanimate, should be scientifically marshalled and their industrial applications carefully and suggestively illustrated. When that good time should come, true-hearted citizens would decorate their streets and squares with statues and memorials of the great and good men and women who had adorned the province, not merely of kings, statesmen, or warriors, but of philosophers, poets, men of science, physicians, philanthropists, and great workmen. A traveller need not go far through the streets of most foreign cities without seeing at once such decorations, the grateful records of the illustrious men they had produced, reminding the old of a glorious past, and inviting by example the young to add to the fame of their native soil.——The museum well deserves a visit.

RAILWAY MATTERS.—An appalling accident, as most of our readers are doubtless already aware, has occurred on the Irish Great Southern and Western line at Straffan, near the double terminus, where a passenger-train came to a dead stand, in consequence of some defect in the engine, and a heavy cattle and luggage train ran into it at full speed, smashing everything, killing fourteen passengers, and wounding, more or less seriously, about fifty more, several of whom have since died, and others with fractured limbs remain in great danger. The accident occurred after dark, but there was no light signal, it is said, at the end of the train.——The London and North-Western Company have announced that they will give a free first-class pass for a series of years to persons who will build houses worth not less than 50*l*. per ann. at Harrow, Pinner, Bushey, Watford, King's Langley, Boxmoor, Berkhampstead, or Tring.——The economical cost of the duty-free glass has induced the directors of the Birmingham, Wolverhampton, and Dudley, and other railways centering in Birmingham, to have the great station in New-street constructed of fluted glass, and the same covering is to be generally adopted in the railway stations between Madrid and Barcelona. ——A new style of railway, substituting water for atmospheric pressure, has been proposed both here and in France, with a view to economical working and security from accident. The actuating power is to be obtained by means of continuous water power between the rails by artificial pressure. The water power is worked by peculiar mechanical arrangement, and it is proposed to place the apparatus at distances of 300 feet along the line.

ANCIENT PYRAMID IN CALIFORNIA.—Another of those numerous evidences of a civilized antiquity in the "New World" have just turned up, it seems, in shape of a great stone pyramid, composed of courses from 18 inches to nearly 3 feet in thickness, and 5 to 8 feet in length. It has a level top of more than 50 feet square, though it is said to be evident from the remains that it was once completed. This pyramid differs, in some respects, from the Egyptian pyramids, being more slender or pointed; and the outer surface of the blocks being cut to an angle, that gave the structure, when new and complete, a smooth or regular surface from top to bottom. From the present level of the sands there are fifty-two distinct layers of stone, that will average at least 2 feet: this gives its present height 104 feet, so that before the top was displaced it must have been at least 20 feet higher than at present. How far it extends beneath the surface of the sands it is considered impossible to determine without great labour.

THE LAWSON OBSERVATORY.—The Nottingham town council have given a site, with the option to the observatory committee of accepting 500*l*. instead of it, should another site be preferred. The Prince Consort has given 100 guineas, and the Treasury will give 2,000*l*. The required sum being made up to within little more than 1,000*l*. and the committee being willing to guarantee that sum, Mr. Lawson has extended the time for a few weeks; since which, we believe, the deficiency has been still further reduced.

Gas.—Mr. R. C. Witty, of Wandsworth, has patented the combining of oils with vegetable matters, and moulding into bricks, which are dried and distilled, in order to produce gas. The distillation is performed in a retort, divided horizontally into two compartments, the bricks being placed in the lower one, and the products passing away through a perforated block in the upper one, the heat of which ensures that none of the products shall pass away without being converted into gas.

The Chetham Statue in Manchester Cathedral.—The statue by Theed, exhibited at the Royal Academy, was quietly placed on its pedestal in Manchester Cathedral on Monday in last week. This statue, in honour of Humfrey Chetham, was commissioned for a gentleman who received his education in the school founded by Chetham, and who placed 1,000*l.* in the hands of three friends for that purpose, with a proviso that his name was on no account to be divulged, Mr. P. as he is called, being on this point apparently as particular as *Nil desperandum*. The place selected for the reception of the statue was the upper or east end of the north aisle of the choir, just under the windows. The external end wall of that aisle has been renewed, and the masonry for a new window more suited as a back-ground for the statue than the old dilapidated window then existing, has been put in. The base of the monument (which projects about 12 inches beyond the pedestal) consists of two steps, of hard stone, 7 feet long by 5 feet 6 inches in width; and upon the upper step is placed the pedestal, a block of polished Kendal marble, slate-coloured and veined, 5 feet 10 inches long, and nearly 3 feet high. Upon this is placed the statue, with its plinth, carved out of one block of Italian statuary marble, which weighed six tons, and cost 140 guineas. Now that it is sculptured, it weighs but a cwt. short of two tons.

Suffolk Institute of Archæology and Natural History.—The twenty-third quarterly general meeting of members and friends of this society was held on 29th ult. at Melford, under the presidency of the Rev. Lord Arthur Hervey. The company assembled at the Bell Inn, where a collection of antiquities connected with the locality were arranged as a temporary museum. The president invited the assembly to accompany him to Melford Hall. A paper on the history of the place and its owners having been read by Mr. Tymms, the company proceeded to the church. Here Mr. Almack acted as guide. The archæologists then proceeded to Kentwell Hall. A paper on the history of this manor was read by Mr. Tymms. They then proceeded to Melford Place, and Mr. Tymms having read a paper on its history, they returned to the Bull Inn, where a cold collation was partaken of by about thirty, including a good proportion of ladies. The Rev. Lord A. Hervey presided, and with Mr. Disney and Mr. Majendie enforced the claims of the institute to support.

Glassmakers' Friendly Society.—The second anniversary of this society was celebrated on Friday in last week, at Vauxhall, Birmingham, upwards of 170 workmen being assembled, to commemorate the recent deposit of 1,000*l.* at the Western Bank in Glasgow. Dinner was provided, and there were at the meeting official delegates from Stourbridge, Tutbury, Yorkshire, Manchester, Warrington, St. Helen's, Glasgow, and Edinburgh: Mr. William Gillender in the chair. Besides the 1,000*l.* banked at Glasgow, he said the society had already 400*l.* more. Twelve months since the glassmakers' society had not fourteenpence, but now it had 1,400*l.*: and what was this for? Why, in all probability, there would be a slackness in trade in a few years, and that money would be something to back them up, and avert the consequences. A gold watch and chain were presented to Mr. Wilkinson, late treasurer to the society.

The Accident in the Strand.—The value of the *Builder* as a corrective in practical matters, of the premature and false judgments of the press at large, has been shown on many occasions, but it must be especially acknowledged both by the architect and enlightened builder in its treatment of Mr. Abraham's sad case, and your able and bold correspondent, "R. K." will not fail in obtaining large encomiums for his lucid paper on the "Architect's Responsibilities." I would, however, desire to remark that in "R. K.'s" reference to the conduct of Messrs. Lucas, he does not sufficiently consider that neither these gentlemen, nor their advisers, in allowing Mr. Abraham to be the stop-gap, could have anticipated such a verdict against him as the one recorded; and it is too much to suppose that a firm which has been grafted on the stock of a "Peto" will not repair, before a grand jury and the Court, the serious damage they have occasioned to an innocent man, by withholding at the inquest such exculpatory evidence as they then had it in their power to give.

A District Surveyor.

Another New Principle in Naval Architecture.—Our readers may recollect an article in our columns of Dec. 25 last on Screw Propellers, in which we stated that "Mr. Bourne suggests the combination of the stern-screw with some form of the side-paddle (in fine analogy to the fish-form and power), as an improvement that would enable ships to head the wind more powerfully than they yet do; and he points out what seems to us a most important principle of strength in shipbuilding,—namely, that a ship ought to be regarded as a hollow beam, of which the deck is the upper side and the bottom the lower; so that it is the deck and bottom, and not the sides, which have to endure the strain; and, indeed, might we not venture to suggest that the strongest of all ships would be those built on the principle of a T girder, with a division for strength along the length of the hold at midships? In Mr. Bourne's view, the function of the sides is merely to keep the top and bottom in their right positions, and it is therefore in the top and bottom that the strength should be collected,—thus giving more strength with less weight." From a review of the progress of mechanical science, by Mr. Fairbairn, read at the last meeting of the British Association, it appears that "the construction of an immense steam-vessel has been undertaken by Mr. Brunel and Mr. Scott Russell, of such vast dimensions that it will stretch over two of the largest waves of the Atlantic, and will thus obtain a steadiness of motion which will be a preventive against sea-sickness. This mammoth steamer is to be 680 feet long, with a breadth of beam of 83 feet, and a depth of 58 feet. The combined power of the engines will be that of 2,600 horses. The ship is to be built of iron, with a double bottom, of cellular construction, reaching 6 feet above the water-line, and with a double deck, the upper and the lower parts being connected together on the principle of the Britannia Tubular Bridge, so that the ship will be a complete beam. It will thus possess the strength of that form of construction, and not be liable to "hogg," or break its back, as has been the case with other ships of great length. The double bottom will be a means of increased safety in other ways, for if by any accident the outer shell were broken, the inner one would prove effectual to keep out the water. As an additional security, however, it is to be divided into ten water-tight compartments. The ship will be propelled by paddles and by a screw, which will be worked by separate sets of engines. This ship will form, when completed, the most extensive work of naval architecture ever constructed." We are not aware that Mr. Bourne's name was mentioned in connection with the project by Mr. Fairbairn, but we think it ought to have been.

Restoration of Effigies.—A recumbent effigy in alabaster of Sir Marmaduke Constable, knight (1550), has been restored by Mr. Richardson, by order of Lady Strickland, who was a Constable. It was to Sir Marmaduke Constable that King Henry VIII. gave the lands of the nuns at Nuneaton at the suppression. Sir Marmaduke, the elder, at the age of eighty, and his four sons, of whom the effigy represents the elder, were all at Flodden Field. So mutilated was the effigy that the body, one arm, and part of one leg alone remained; but a portrait existed, and the wanting parts have been restored from casts of contemporary works most probably by the same artist; and the Chelleston alabaster has supplied a good match. The same sculptor has to execute the details of the pulpit for St. Mary's Church, Shrewsbury, mentioned in the *Builder* a few weeks ago. It is a memorial pulpit to the late rector, Dr. Rowland. Mr. J. Poulteney Smith is the architect.

Inscriptions on Bells.—The inscription on the bells of St. Helen's Church, Worcester, are very singular: the names they bear tell their date:—

1. "*Blenheim.*

First is my note, and Blenheim is my name;
For Blenheim's story will be first in fame."

2. "*Barcelona.*

Let me relate how Louis did bemoan
His grandson Philip's flight from Barcelon."

3. "*Ramilies.*

Deluged in blood, I, Ramilies advance
Britannia's glory in the fall of France."

4. "*Menin.*

Let Menin on my sides engraven be,
And Flanders freed from Gallic slavery."

5. "*Turin*

When in harmonious peal I roundly go,
Think on Turin, and triumph of the Po."

6. "*Eugene.*

With joy I bear illustrious Eugene's name,
Fav'rite of Fortune, and the boast of fame."

7. "*Marlborough.*

But I, with pride, the greater Marlborough bear,
Terror of tyrants, and the soul of war."

8. "*Queen Ann.*

Th' immortal praises of Queen Ann I sound;
With union blest, and all these glories crown'd."

—*Notes and Queries.*

Opening of the Branch School of Design, at Newcastle-under-Lyne.—The Board of Trade having appointed Mr. J. B. Williamson to the office of master of the Elementary Drawing School now in course of establishment at Newcastle, the committee invited all intending to become pupils, and the public generally, to be present at its opening, and to hear an exposition of the objects of the proposed school. The meeting took place on Monday in last week, in the Literary and Scientific Institution, which the committee of the institution have liberally granted for the purposes of the proposed school, and, according to the *Staffordshire Advertiser*, was pretty numerously occupied. Around the room were arranged a great number of specimens and copies; drawings, plain and coloured, of flowers, shells, vases, birds, &c. supplied by the Board of Trade for the use of the school. The mayor (Mr. John Lamb) took the chair, according to appointment, and opened the proceedings of the meeting; and Mr. Rice, the head master of the Stoke School of Design, explained what were the objects proposed, and how they could be best accomplished.

Tudor Architecture.—For some years much has been said and written about the desirableness of a new style of architecture. No doubt, if new beauty could be introduced, it would be an addition to the sum of human happiness: it is also frequently discussed which style is the best. Many architects have a predilection for Grecian, and they would have Trojan, too, if they knew it. It is easier to work by rule than to draw on the imagination; but the public laudably revolt against Grecian churches. It may be all very well that the Villa Figgins should be Grecian; nay, F. himself may go to market with his chlamys on—who has a better right?—but for a country mansion in England, nothing hitherto has surpassed in appropriateness, respectability, and beauty, the Tudor style, which is our own, and suits our oaks and green pastures. But it is the besetting weakness of your Briton to ascribe all excellence to what is peregrine: it is quite impossible that Smith can sing; so he or she must append the propitiating *ini* to the name, or translate it at once to Ferrari. Good taste is the offspring of culture: a superior grade of education is a blessing which is becoming more accessible and by and by a parent will not article his son to an architect *invitâ Minerva*, and then the Profession will know something more than arithmetic.—W.

The New Markets, Norwich.—The committee appointed to superintend the erection of the new markets in the city of Norwich, have selected a design from Mr. Andrew Trimen, of the Adelphi. The style will be Italian, and the general dimensions 155 feet by 80 feet, with towers at each angle.

TENDERS

For finishing two carcasses in the Richmond-road, Dalston, for Mr. Thies; Mr. J. Young, architect:—

R. Johnson	£1,380	0	0
Richlieu and Niblow	1,340	0	0
Clever	1,237	0	0
Starkey	1,189	0	0
Smith	1,066	0	0

TO CORRESPONDENTS.

"W. T." "S. M. P." "Judas" (may be satisfied so far, and appl his time to other acquisitions). "W. H. F." "R. Y." "H. T. E. "G. (or E.) W." Sheffield (it would be waste of time). "H. S." "J E." "J. F." "Mr. R." "C. W." "M. T." "W. A." "E. W. T." "H P. S." "J. B." "Stitch in Time." "H. D. S." "J. N." "W. W" "H D." (most of the matters referred to receive attention at ou hands). "A. B. C." "C. D." "E. J." (stamps shall be applied as r quested, although we have heretofore declined the office). "J. H R." "P. T." "Enquirer." "J. R."

"*Books and Addresses.*"—We have not time to point out books o find addresses.

ADVERTISEMENTS.

NOTICE.—HARROW.—FREE TICKET by the LONDON and NORTH-WESTERN RAILWA Every person building a house on the Headstone Estate, which contiguous to the Harrow Station, of a suitable character and the value of not le-s than 50*l.* per annum, may obtain for a perio of eleven years permission to nominate one resident in each yea to whom the company will grant, free of charge, a first-class pa between the Harrow and Euston stations, subject to the conditio in all other respects of ordinary passengers; and Mr. EDWI FOX has much pleasure in announcing that he has several valu able BUILDING PLOTS to DISPOSE OF on the above-me tioned eligible estate, commanding most charming views, and po sessing an abundance of valuable brick earth.—For particula apply to W. B. Cooper, Esq. Solicitor, Verulam-buildings, Gray inn; and at Mr. EDWIN FOX'S Offices, Coleman-street, Bank.

THE PERMANENT WAY COMPAN call the attention of Railway Directors and Engineers their Patent Rails, Sleepers, Fish Joints, and other importa improvements now in use on upwards of 2,000 miles of railw Every information may be obtained on application to J. CHARLES MAY, C.E. the Manager; or to Mr. WILLIA HOWDEN, the Secretary, 26, Great George-street, Westminster.

TO STONEMASONS AND MARBLE MASONS.

AN OLD-ESTABLISHED BUSINESS be SOLD, within one mile and a half of Vauxhall-brid Satisfactory reason can be given for its disposal.—Address, H. at Mr. Bailey's, Pleasant, Vauxhall-walk, Lambeth.

OLD BUILDING MATERIALS.—TO B SOLD, by TENDER, the whole of the OLD BUILDI MATERIALS in the Houses Nos. 4 and 5, Odell's-place, Fulha road. Particulars to be obtained at Mr. A. B. FREND'S Offi 44, Bedford-row, to whom Tenders are to be sent before SATU DAY, the 22nd of OCTOBER.

The Builder.

SATURDAY, OCTOBER 22, 1853.

MONSIEUR LOUIS FONTAINE, who may be called the father of the modern school of architects in France, died on the 10th inst. and has been buried at Père La chaise with great honour. A large number of the members of the French Institute, the great majority of the architects, sculptors, and painters of Paris, and a countless body of contractors and workmen of all classes, followed his body to the grave, and manifested their regard and regret. Fontaine has an European reputation. In conjunction with Percier and with Bernier, he directed public works under the sovereigns who reigned over France during more than half a century,—from the time of Napoleon to the revolution of 1848. Even then he might have retained his position as architect at the palace of the Tuileries! under the Provisional Government, but he declined to do so.

The restorations at the Louvre and at the Tuileries, the Triumphal Arch of the Carrousel, the monument of Louis XVI. the magnificent staircase which conducts to the picture-galleries of Charles X. and considerable alterations in the Palais Royal, are amongst his principal works, produced either singly, or in conjunction with the architects previously named. With Percier he made, by direction of Napoleon, a fine design for the palace of the King of Rome, but this was never carried out. The building was commenced, but shortly afterwards abandoned.

After the revolution of 1848 he retired to his small residence in a place far from the Court, and little known, called the Rue de la Muette, near to Père La chaise, where the remains of his devoted friend Percier repose; and here, amidst the works of art which he had gathered around him, including a large number of portraits of the leading artists of the century, with whom he had been intimate, he passed quietly the last years of his life, attended only by two attached servants—man and wife,—who deplore him as a father. He was ninety-one, and a bachelor. He remained to the last president of the *Conseil des Bâtiments*, and attended a meeting of that body only a few weeks before his death. When he returned to the quiet garden surrounding his house, he said, according to M. Guenot, who has written a short notice of him, "I will go no more to the *Conseil des Bâtiments:* the stairs, which it is necessary to mount, fatigue me, and I always arrive at the meeting giddy and out of breath."

We well remember visiting him in Paris, now several years ago, and finding him surrounded by his pupils. He had a lively wit, a free spirit, and drew with great facility. French architects, let us say here in a parenthesis, pursue ordinarily a course with the students who are placed under them, different from that followed in England, where, generally speaking, the run of the office and what the pupil can himself pick up are the chief advantages derived from the "indentures." We must take some other opportunity, however, to follow out this remark.

At his grave, eulogiums were pronounced by M. Lebas, M. Achille Leclère, M. Gauthier, and our countryman, Mr. Donaldson, who had long been on terms of intimacy with the departed artist. The few words which the latter addressed to the assembled crowd, in their own language, appear to have gratified them. "Permit," said he, "an English architect to place a leaf of laurel on the tomb of his brother—Academician. The architects of England—the artists of all Europe—will learn with most lively regret the cruel loss which the French school has suffered. A probity without reproach, a noble sincerity, and frank and honourable conduct, have gained for M. Fontaine the esteem of several sovereigns. His name will ever be united in the history of architecture with that of his illustrious colleague, Percier. These two friends have guided the studies of the youth of your country, and have led them to follow a course which has produced for France monuments of which you may well be proud, since all Europe admires them. Honour to France! Honour to her great men!"

We willingly repeat it: honour to her great men! and she has many.

The works now going on in Paris, as we have already told our readers, are of extraordinary magnitude, involving, if all carried out, an enormous expenditure,—an expenditure far beyond what prudence and justice would authorize. This, however, we will leave the French people to settle.

The Palace of Industry, in the Champs Elysées, is rapidly advancing: the external walls are mostly completed to the second range of windows, and the foundations of an inner wall are finished. These are entirely of stone, and the building will have no pretensions to be called a crystal palace, as the windows and a portion of the roofing will alone be of glass. Viewing the dimensions, in the interior, it appears not to cover half the superficial area of the London Exhibition Building of 1851. On asking the builder the length and breadth within the walls he declined the question, but said the size was about two-thirds that of the Crystal Palace in Hyde-park. As the building at present presents merely walls of rough blocks, no idea can be obtained of its architectural pretension, but it is said that it will be decorated with a profusion of ornamentation. There will be abundant occupation for the carvers in stone on the cornices, friezes, modillions, emblems, capitals, and pilasters. Twenty-five doors are planned, and upwards of 700 large windows with semi-circular tops require the skill of the chisel. The stone is of a pale buff colour, and is brought from all the neighbouring quarries situated near water-carriage: a considerable portion is from the quarries of Creil. The scaffolding is a clumsy affair, entailing a great waste of labour in lifting and passing the stones to their place. It is rather surprising that our traversing cranes on rails are not employed, as their advantages have become so evident in England.

Considerable improvements are being effected on the quays, to level the roadway, and many ranges of shops have become sunken 4 or 5 feet, to the great injury of the traders who inhabit them. The Pont Marie is being entirely reconstructed to meet the new level.

At the Sainte Chapelle the slender cast-iron spire has been uncovered from the scaffolding, and now glitters in the sun with its gilded finial, ribs, and crockets; it has a pretty effect when seen at a distance over the houses. The roof of the chapel exhibits at present nothing but the boarding. In the interior a great deal is wanting to complete the gilding and decoration:—nearly the whole of one of the sides, and the crypt have not yet received any restoration. A block of houses that advanced against the Palace of the Tuileries, beyond the arcaded part of the Rue Rivoli, is being rapidly demolished as far as it extends to the open space in front of the Palais Royal, and here the arcades of the Rue Rivoli will terminate; all the new houses beyond being destined for commerce: the few already erected have no architectural beauty to boast of—they are merely tradesmen's houses with shops. Several of the Roman remains of ancient Paris have been discovered in the excavations now in progress for the new buildings: these have been removed to the Museum de Cluny.

The works to connect the northern gallery from the Tuileries with the Louvre are progressing with uncommon activity. A portion in the Rue Rivoli is already built as high as the cornice. In the Place du Carrousel very little progress has been made with the other proposed buildings excepting for the foundations. Some carvers are finishing the ornaments in the pediments of the northern gallery, which have remained without them since the erection of this part by Napoleon I. In all the scaffoldings at Paris there is a singular absence of ladders: here at the Louvre a solidly-built staircase is constructed for the service of the masons. In all these operations the greater number of workmen appear to be employed in demolition of the old houses to form the new street. The continuation of the Rue de Rivoli from the Louvre towards the Hôtel de Ville bears, as far as new constructions and the length of opening, great resemblance to the present state of the Victoria-street leading from Pimlico to Westminster.

We should have mentioned, when speaking of the Palace of Industry, that it is proposed to erect an entirely distinct building for the exhibition of fine arts to be held at the same time, and to which all the nations have been invited to contribute. It will probably be placed near to and in a line with the southern façade of the Palace of Industry, and be united to it by means of a corridor.

It is to be hoped that England will be fairly represented there in 1855.

NEW WORKS IN STAINED GLASS.

THE large window in the St. Stephen's porch, at the end of Westminster Hall, of which we gave an illustration a few weeks ago, is now filled with stained glass from the establishment of Messrs. Hardman. It presents the arms of the sovereigns of England from William the Conqueror to the present time, and although, therefore, offering no claims to merit in design, must be regarded as a very successful combination of coloured glass, notwithstanding there is too much yellow in it, and perhaps too little red. There is a sparkling brilliancy about it which is exceedingly satisfactory, resulting in great measure from the introduction of a sufficient quantity of white glass, the worth of which is too often overlooked. The windows last put up in the House of Commons show a great improvement in this respect over those first executed there, although by the same firm.

We regret to observe, by the way, that Sir Charles Barry has not yet been permitted to decorate, as he desired, the underside of the gallery in the House of Commons: a little colour and gilding would be of great advantage here.

A window of considerable size and cost, executed by M. Gerente, has been fixed in the west end of All Saints' Church, Margaret-street, Cavendish-square, of which we would gladly speak well if we could. It is a "Jesse window," containing thirteen inscribed figures, ending with Christ crucified. The general tone is yellow, and not particularly pleasing; the drawing throughout purposely bad. "The Saviour" is but a bundle of distorted limbs, utterly indefensible, as it seems to us. A want of skill is imitated not compatible with the state of art shown in the structure, which presents, as we have previously mentioned, some very beautiful work, so that on the score of congruity even, nothing can be urged for it. There is no reason why we should not have the religious sentiment, and the simplicity of the early works, conjoined with purity of design and noble forms.

As Cardinal Wiseman said the other day, we have canonized defects and sanctified monstrosities,—"What was the result of ignorance or unskilfulness we attribute to some mysterious influence or deep design. A few terms give sanction and authority to any outrageousness in form, anatomy, or position; to stiffness, hardness, meagreness, unexpressiveness—nay, to impossibilities in the present structure of the human frame. Feet twisted round, fingers in wrong order on the hand, heads inverted on

their shoulders, distorted features, squinting eyes, grotesque postures, bodies stretched out as if taken from the rack, enormously elongated extremities, grimness of features, fierceness of expression, and an atrocious contradiction to the anatomical structure of man, where this is displayed, are not only allowed to pass current, but are published in the transactions of societies, are copied into stained glass, images, and prints, and are called 'mystical,' or 'symbolical,' or 'conventional' forms and representations."

The chancel of *Clyst St. George, Deconshire*, which has lately been restored by the present rector, the Rev. H. T. Ellacombe, in the style which prevailed in 1300, has been further improved by the addition of a window from the establishment of Mr. Ward, of London, of glass manufactured expressly by Messrs. Powell, of Whitefriars, after many experiments made by analysis of the glass of the thirteenth century, by Mr. Medlock, late of the Royal College of Chemistry, under the superintendence of Mr. Winston, whose observations on the subject we printed some time ago.

Judging from this specimen (which is the fifth window yet formed of the newly-made materials), the efforts of all these gentlemen, as to colour, appear to have been very successful. The tone of the whole is rich: the blue in particular is soft and intense, and the white, the green, and pot-metal yellow are, in hue, very much like the old. The design of this gift consists of six groups of figures, "dabbed" on a running floriated quarry-work, with a rich border by the sides, which also adorns the tracery of the head. Each light has two of these medallions or groups. In the centre light there is the "Nativity of our Lord," with "The Crucifixion" over it. In the left-hand light a miracle is represented ("Christ healing the Sick"), and over it "The Resurrection;" and in the right-hand light a parable ("The Sower"), with "The Ascension" over. The subjects were designed and painted, as we are informed, by Mr. Hughes, in connection with Mr. Ward.

We understand that the first window that has been executed in this new material was set up in the Temple Church, simultaneously with which another was done for a church in Staffordshire, in memory of — Clarke, Esq. K.C.; that the east window in Buckland Church, near Dover, is the third; that a fourth (in Sharrow Church, Yorkshire), was painted by Mr. G. Hedgeland, for Colonel Mason; and that, as before stated, the present is the fifth.

The *Sharrow* Church window is of Perpendicular character, and contains six subjects selected from incidents in the life of our Saviour; viz. in the lower compartments, "The Nativity," "Christ disputing with the Doctors," and "The Baptism;" and in the upper, "The Descent from the Cross," "The Resurrection," and "The Ascension" of our Lord.

At *Gloucester*, a memorial window by Mr. G. Rogers, of Worcester, has been put up in the Church of St. Mary le Crypt, to the memory of the late Charles Frederick Cliffe. It is a triplet window, in the Early English style, containing a number of sacred symbolical devices, and the armorial bearings of the deceased. Mr. Cliffe was connected for several years with the *Gloucestershire Chronicle*, and was the author of the "Books of North and South Wales." We had the advantage of his friendship, and lament his early death.

The *Wordsworth Memorial Window*, intended for the new church at Cockermouth, has been painted by Messrs. Hardman, and is ready for fixing. It is described to us as consisting of five lights, each light containing two canopies and three circles. Beneath the canopies of the centre light are figures of the Saviour and St. John. Under the canopies on the one side are figures of the four great prophets, and on the other side figures of the four evangelists. In the circles of the centre light appear figures of St. Joseph, St. Mary, and St. David; and in those of the four side-lights figures of the lesser prophets. The head of the window is composed of geometrical tracery, and the openings of the supermullioning are filled in with figures of Adam, Eve, Seth, Noah, &c. St. Stephen, St. Alban, &c.

In the parish church of *Apsley Guise, Beds*, several stained glass windows have been put up. The south window in the chancel is by Messrs. O'Connor, and contains the twelve apostles. In the vestry Mr. Baillie (our readers will remember his elaborate picture on glass—"Shakspeare reading to Queen Elizabeth") has executed a window in enamel, having for subject, "Our Lord's Presentation to the Temple."

We may add to this list intimation that a window is being put up in Treddington Church, near Stratford-on-Avon, in memory of the Rev. Thos. Hopkins, formerly rector of the parish. The bottom lights are illustrative of ten parables of Christ. The openings in the tracery of the window contain figures of the four evangelists, angels, and monograms of Jesus Christ, with vine, ivy, and rose ornaments, and in the top centre compartment is introduced the ascension with the twelve apostles, also emblems of the Trinity. It was painted by Mr. Holland, of Warwick, who has also put up recently a window in the chancel of Stratford-on-Avon Church, containing the following subjects in the three centre lights:—1. "Christ mocked," "Entry into Jerusalem," and "Wise Men's Offering." 2. "Crucifixion," "Last Supper," and "Baptism." 3. "Resurrection," "Washing the Disciples' Feet," and "Sermon on the Mount."

THE PRISON AND THE SCHOOL.*

DESTITUTE CHILDREN AND WHAT SHOULD BE DONE WITH THEM.

"The child is father of the man." Would that to act on the inference were as common as to talk of the precept! Nationally we know much better how, by severe and repressive negative measures, to *attempt* at least to root out the weeds of vice, than how, by fostering care and kindly cultivation, to plant the goodly grain. And it is much to be feared that even were we successful in the negative process, as we certainly are not,—the "virgin soil" so weeded,—virgin to the good seed at least, if not to the bad,—would be but like the habitation of devils, "swept and garnished" only to become possessed by devils worse than those expelled. Mere intellectual cultivation is but like this weeding process, leaving the soil without planting the good seed of moral and industrial training; and it has actually been found in practice that even boys, when "educated" in prison,—that is, merely enabled to read and write,—devote these garnishments to the purpose of advancement in their profession of thievery,—the latter in noting down the details of likely "plants" of a totally different kind from those the gift of writing was designed to cultivate, and the former in the study of that "police intelligence" of the ingenuity of older and more cunning rogues, by means of which the young reader, who is prone to evil, only becomes older in iniquity, and in all those cunning devices of which Sam Weller's father's admired and invaluable "alibi" constitutes a significant and instructive example. It is full time, therefore, that something more were done, especially on behalf of those thousands, those tens of thousands, of poor destitute children who prowl about the byeways and the highways of the metropolis, and of every other great city and town throughout the country—raw in good experience but ripe and ready for crime, and but too many of them already plunged into its turbid current. As the author of the valuable and important pamphlet from which we take the title to the present remarks well has it,—the juvenile and other crime which taints in under currents the fair and specious face of this great metropolis reminds one of the black and turbid stream which issues from beneath the pure and chaste-looking glaciers of Switzerland. Few would think the former possible while gazing on the latter. We may even find a very fitting and significant parallel within the limits of the metropolis itself, in its own stygian "Fleet Ditch," which few either see or know of, but which still pursues its steady course of deadly contamination, not only beneath the stately surface, but openly and reeking as it flows in the face of day.

Of the dread actuality and extent of the juvenile destitution of London, we have seen but too sad evidence; and it is but a short time since we drew special attention to it. "The number of children," we have said,* "who at this time being educated in vice, fitted for disturbing and injuring society, forbidden from good, and prepared for a life of misery,—children who have no affections or ties; in whom natural good feelings have been quenched; who have no advisers but the bad; no home, no hope;—is perfectly appalling. They are to be counted in thousands; we fear to say how many. Can nothing be done to save them and so save society? Here is a fertile field appealing to labourers to the Christian, the philanthropist, the political economist, and the mere egotist who would save himself money and annoyance by preventing instead of punishing. Let us remember, there is no irremovable reason why these children should grow to be disorderly and lawless,—liars, thieves, perhaps murderers: they were born as capable of good as your own offspring; and, with the same nurture and teaching, would make as useful members of society. Lead them into good habits,—imbue them with right principles,—and their lives, in the natural course of things, will be in accordance with these habits and principles. Equally as a matter of course will the lives of these poor outcasts follow *their* training. Knowing the seed, we know what the plant must be. It seems almost an injustice to punish for a natural result. Here, we feel satisfied, is the right spot for the spade of those who would reap a rich harvest of good, and earnestly we pray that they may be found."

The accomplished magistrate by whom the pamphlet is written is one of those honourable labourers in this wide field to whom we thus appealed. He has been engaged for some considerable time in investigating the position both in and out of prison, of the juvenile destitute and criminal population of the metropolis and the result of this investigation and of the experience he has derived from his connection with the houses of correction in Coldbath-fields and Westminster, as a visiting justice, for some years, has convinced him that the prison is not the place for two-thirds of those who unfortunately find their way there.

"It is scarcely credible," he remarks, in allusion to one of many cases adduced,

"That in the nineteenth century the humanity and intellect of Englishmen have not been able to discover some more reasonable mode of disposing of this and similar cases.

To meet them the establishment of county industrial schools is advocated. In these, under the paternal care of the magistrates, the children would be secure from the evil designs of the vicious, would be educated, religiously trained, would confide in their protectors, and would in very many instances be the means of bringing to justice those who have enticed them from home, and induced them to commit crime. .....To efficiently carry out the suggestions that have been made, it will be requisite to erect two "County Industrial Schools," one for the reception of 1,000 boys, on a site containing 80 acres of land; and a second for 400 girls, with 20 acres of land attached. These schools are to be built and conducted on the system adopted at Anerley, but harmonized with the more rude and wilful dispositions of the boys and girls who are to become their inmates.

The total cost of the North Surrey District Schools at Anerley, including 49 acres of land, by the published accounts, appears to be 28,503*l.* including fittings and furniture, and capable of accommodating 800 children. It may, therefore, be fairly assumed that the two proposed can be built for a sum not exceeding 60,000*l.* especially when the unavoidable extra expense which ever accompanies the first of a series of public buildings is saved from the experience gained from it, and the improvements which can be introduced, and the nooks and corners made available.....Another fact must also be duly considered —the loss sustained annually by society from the plunder obtained by the juvenile population. After much inquiry, we are firmly convinced that the average amount of plunder by boys under seventeen years of age per week is not less than 10s. each, which, calculated by the year on 1,000 boys alone, would amount to 26,000*l.* leaving a balance in favour of society of 11,800*l.*"

The essay from which this passage is quoted not only discusses the means and measures necessary to counteract the evils which create

* "The Prison and the School. The Chief ascertained Causes of Crime considered, with Suggestions for the Care, Relief, and Reformation of the Neglected, Destitute, and Criminal Children of the Metropolis." By Edmund Edward Antrobus, F.S.A. Justice of the Peace, &c. Stanford and Sons, 7, Strand. 1853.

* Vide p. 337, *ante*.

id maintain a juvenile destitute and criminal opulation; but also those which exist for these nds as well as for the control of such a popula-on, and the laws which affect them, the whole eing introduced by some equally important emarks on the causes which do create and aintain a juvenile destitute and criminal opulation.

We earnestly recommend this essay to all ho feel interested in the solution of this great roblem.

Since the publication of the pamphlet the ustices, by an unanimous vote on the motion f Mr. Antrobus, have appointed a special com-ittee "to consider the propriety of applying r an Act of Parliament for powers to erect nd maintain one or more county industrial chools, for the reception and care of the estitute and criminal children of the county of Iiddlesex, and the practicability of extending ndustrial education generally, with power to ommunicate with her Majesty's Secretary of tate for the Home Department on the ubject."

The real improvement of society must be ffected through the children.

BALMORAL.

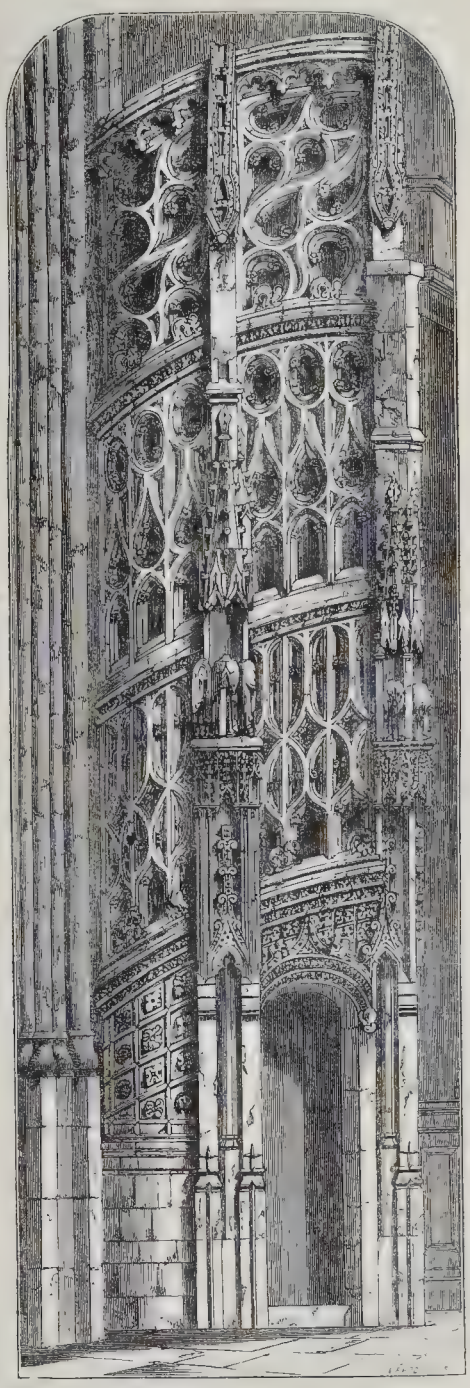
The Queen's residence at Balmoral, concern-ng which we are often asked, is making con-iderable progress, and promises, without great retensions, to be a piece of solid and real con-truction. The south and east sides have been oofed in, and will speedily be made fit for occu-ation. The building is wholly faced with ressed granite, the mouldings and ornamental ortions being carved on the spot. A cor-espondent comments on the circumstance, that he Highlanders seem to have a contempt for caffolding, ropes, or windlass. He says that very block of granite—from 2 to 3 feet long—s transported singly on a Highlander's shoul-ers, up a narrow platform of boards and tressels, o the place where it is to be set, and with con-iderable celerity: larger blocks are conveyed y four Highlanders, on a couple of poles. Primitive, certainly. The castle will have two owers when completed. Modern *agrémens* will ot be omitted: two fountains are in course of ormation: pipes, to carry the water 60 feet igh, by means of a steam-engine, are already ixed.

STAIRCASE IN THE CHURCH OF ST. MACLOU, ROUEN.

Among the smaller churches of Rouen, St. Maclou may fairly claim to stand in the first anks, and to take place next to its more brilliant eighbours, St. Ouen and the Cathedral; but ike many of the churches in this place, it is so losely hemmed in by mean houses, that it is ifficult to get any good view of its exterior. This is especially to be regretted with respect o its west front, which is a work of great eauty, and of some novelty in its design. Its rincipal features are the three rich porches orming the main entrances to the nave. At the atter part of 1851, these porches, together with ome other portions of the building, were under-oing a complete and satisfactory restoration. The interior is equally attractive, and deserves a more attentive examination than is usually estowed upon it. It is too much the custom to be content with the two larger churches, and to give those of lesser note but a hasty and careless glance; thus many very beautiful points are passed by.

One of the most curious portions in the in-terior of St. Maclou, is the staircase, of which we now give a drawing. It is entirely of stone, the lower portion panelled, the upper stages pierced: there are a number of small statues about it, all more or less damaged, but with this exception it is generally in good preservation. It is now used to reach the organ-loft.

Our engraving is from a drawing made for us by the practised pencil of Mr. Caveler.



STAIRCASE IN ST. MACLOU, ROUEN.

Fall of Houses in Lambeth.—Two houses fell in Tower-street, Waterloo-road, on Wednesday last. One of them was under repair, and it is thought the men in removing the roof had weakened the adjoining walls.

THE PESTILENCE AT NEWCASTLE AND GATESHEAD.

It has Schaubert and others have concluded, the pestilence should be occasioned mainly by decomposing filth, and the reason why that filth only acts epidemically, on certain seasons, be that the atmosph[ere] is then only sufficiently d[ry] that in [a] state transmuted or electrified oxygen. [which] acts, so to speak, a powder of consuming and clearing away the decomposing matter in question that it may well be called one of nature's chiefest and most essential scavengers.—th[at] is clear that when cholera [pre]vails will first of all manifest its [pre]sence in [the] lowest towns. And the inference will be [that] any other cause of any thing else, if, *only*, the [con]nection between filth and cholera [in] this connection can, and [has] been, shown we are not now so [much] concerned with the causes of cholera as [with] the evil effects not to doubt.

We [have] before us, then, Newcastle [upon-Tyne] in England! It is one of [the] largest and richest [towns] of filth; and [the] inference rely dependent on [the] inference as that now [is] and incontrovertible [fact] justly said, "day after day [the] most extraordinary statements are made [in] respect to the condition of that town, [and] may be learned: we could [not] such would show a frightful [state] there, but to do so would [be] to [be] belonging to [the] very [city] itself, as in Sandgate, is in [such] state unfit for human habitation—[that] nothing [can be] done with it but to raze it [to] the ground." [Yet] the ruling authorities of [the] town can [still] go on to reap rents of [their] [pro]perty [which] [their] manufactories" [and] [why] this [should] exist, what [hope] is there [that] it should escape [the] pestilence? [Look] into the *Gateshead Observer* of last [week] for example, and mark each detail as to [the] localities, both in Newcastle and Gateshead and their vicinity, in which filth is more [than] usually rampant. One cannot but be [struck] with the task. Moreover, it has already been distinctly ascertained that the worst [districts] of the pestilence are precisely the most sordid, defective and most positively noxious. The pre-eminence in pestilence is precisely equivalent to the pre-eminence in filth. And we do not speak here of the habits of the people so much as of the shortcomings of the authorities and the municipal defects. What avails the utmost cleanliness in cottages where there is neither drainage nor convenience of any kind whatever? and who are to blame for the continuance of such a state of things but the authorities with the inhabitants themselves? We questioned the exertions of the "intelligent and scientific men" resident in the [town]. It appears, however, that they *have*, [but] unavailingly, exerted themselves.

[They] [had] [a] [report] it" says the *Gateshead* [Observer], [and] [they] [wrote] [and] delivered lectures upon it. Newsvendors [were] [paid] Farthing-and-a-half-penny. Newspapers [were] [bought] [by] other "stopped his [ears]" [at] it. We have had [our] being privately abused and [vilified] "selling" our ancient borough [down] [the] [river]" and of being almost [in the] pay of [the] [Board] for dishing up the nuisance [to] us. (!) There [is] [a] [cry] [of] "Oh! and over again [we] [are] [told] in the public ear."*

When a people see and acknowledge their shortcomings there *is* hope of amendment; but what hope or prospect have we here, where the efforts of energetic and faithful mentors like the editor of the publication just quoted are paralyzed by the manifestation of a spirit such as this on the part of the inhabitants?

Blind as they are to their own defects, however, they are sharp-sighted enough to see, and ready enough to complain of, the alleged shortcomings of their corporate rulers, and of others, strangers and sojourners, who have been labouring among them to palliate the terrible evils which they may truly be said to have *brought upon themselves*. These very "inhabitants" have already memorialized her Majesty against their corporation, and against those sanitary officers sent down from London to assist in the mitigation of the pestilence. Their memorial states, as one of its main reasons for troubling her Majesty, that "in the opinion of many of the *resident* medical practitioners, the arrangements *recently* adopted for the prevention and treatment of epidemic cholera in this town have been lamentably defective." Had they rested their case *mainly* on the notorious fact that the arrangements *normally* and *perennially* adopted for the prevention of the epidemic were indeed lamentably defective, acknowledging that they, the inhabitants themselves, as well as their corporate authorities, were much to blame, there might have been some little reason for complaining, with a good grace, of those kindly and considerately sent to aid them in their self-inflicted and most guilty extremity; but, under the actual circumstances of the case, we do think that *such* a complaint of the shortcomings of strangers issues with a bad grace from Newcastle.

We do not mean to offer any opinion on the point complained of: we know little about it,—only indeed that those "resident medical practitioners" referred to "were not consulted," and have consequently been offended, and dispute blame to those who did not consult them. All we mean to say is, that the clause in question deals with a very secondary cause of reasonable complaint, and leaves the monster mischief of self-obstruction to all efforts at cleansing the town untouched and unacknowledged.

The memorialists proceed to declare that "great pecuniary loss has been inflicted upon them by the increase of poor-rates, the stagnation of trade, &c.; while numerous families have been impoverished, and plunged into deep affliction."

We rejoice to see that the eyes of the inhabitants of Newcastle-upon-Tyne are beginning to be opened to the very *expensive* nature of that luxury—dirt, in which they wallow; for that they will ultimately discover that it is to it, and not to the helping hand of well-meant aid afforded them in the midst of their affliction, that they must attribute both the pestilence and its cost, we do begin to have some hope, now that this "pecuniary" question begins to be taken into even imperfect and erroneous consideration.

Our excellent Home-Secretary, to whom the memorialists more immediately appeal, will, we trust, most willingly and fully, accede to the prayer of their petition,—"That for the protection of the inhabitants of Newcastle against the recurrence of such frightful sources of general insecurity and domestic woe, a public and impartial inquiry into *all* the circumstances connected with the late excessive mortality" will be searchingly instituted.

Meantime we are thankful to notice that the dread plague may be said to have exhausted its force both in Newcastle and in Gateshead.

NEW CHURCHES IN MARYLEBONE.—It is stated that a new church, St. Luke's, is to be forthwith erected in Nutford-place, and another will soon be erected in Orchard-street, Portman-square.

* The *Lancet* of the 8th inst. while remarking that "had the local authorities attended to the advice of several medical men [illegible] would have [illegible] proceeded to say that it is the [illegible] has ever great [illegible] practitioners [illegible] in London [illegible] to have [illegible] feet [illegible] we [illegible] to detect [illegible] the present [illegible] although we [illegible] [illegible] [illegible]

length of the chancel is marked out by eight units, and the length of the chapels, or chancel aisles, including the east wall, by five units." And again, in the *Builder*, vol. x. p. 365, is another notice of my work, stating that "In Sefton Church, near Liverpool, an equilateral triangle, the *basis* of which extends from centre to centre of the side walls, *regulates the whole* in a remarkable manner." I could produce many more confirmatory opinions (from public journals) if it be requisite. In each of my diagrams is a base line definitely given; this base line is the *actual width* of the church on the plans, and also the exact width of the transverse sections, and upon and by this line the entire church is duly proportioned.

In the *Ecclesiologist*, plate 7, fig. 4, and plate 8, fig. 10, equilateral triangles are projected from west to east, *exactly* the same as in Part 2 of my "Ancient Gothic Churches." See plate 5 (Salisbury Cathedral).

I still maintain that the mediæval architects created their beautiful cathedrals and churches by simple geometrical proportion, as enunciated in my works issued from time to time; and, if each investigator would resume the inquiry from where the last one left it, and properly acknowledge that which has been previously worked out, something more tangible would be realised, and the better appreciated. There is not one diagram in my works which has been taken from another person's measurement, that is not fully acknowledged.

In reply to Mr. White's assertion that my "theory is scarcely practical," I have given from actual admeasurement many *transverse sections proving their construction*, while he has not introduced *one* transverse section of either a nave or a chancel. In conclusion, he has failed to shed any new light upon architectural proportion by geometry, and has rendered obscure that which had been previously elucidated.

W. P. GRIFFITH.

THE STAGE.

Royal Olympic Theatre.—Mr. Alfred Wigan has commenced his campaign here with two genuine successes,—"The Camp at the Olympic," an introductory dramatic review, by Mr. Planché, and "Plot and Passion," an original drama by Messrs. Tom Taylor and Lang. The first, although similar in construction and intention to the "Ascent of Mount Parnassus," by the same author, is entirely different as a composition. It is charmingly written, displaying, with the nicest discrimination, the characteristics of the various branches of the drama, and the causes of success and failure in each. A very little alteration would transform it into a connected essay on the stage, which would keep its place in our literature.

Amongst the *tableaux* is an effective group from "Sardanapalus," with a well-deserved compliment to recent revivals.

Mrs. Wigan, Miss P. Horton, and Mrs. Stirling say admirably the smart things confided to them, and Mr. Robson dances, sings, acts, and plays on the "bones" in a manner entirely his own. The acting of this gentleman in the second piece is amongst the most remarkable efforts in the art which the present generation has seen. The piece itself is very interesting, though weaker at the close than elsewhere, and should draw a crowd for some time to come. We sincerely wish Mr. Wigan success. In addition to his powers as an actor—concerning which there are not two opinions,—he has the education, tastes, and feelings of a gentleman, so that the interests of the stage are safe in his hands.

MUSEUM OF ECONOMIC GEOLOGY.—I hope Professor Edward Forbes, when he expressed his wish that every British town would soon have a museum, expressed also the necessity of having a catalogue, and that of some classification of the specimens, and availed himself of the opportunity of illustrating how comparatively useless a museum is without them, by pointing out the Museum of Geology in which he was lecturing. It is upwards of two years since, upon mentioning both wants, I was told a catalogue was in progress, and that most of the specimens had written descriptions attached. A very slight inspection will show how few.—W. C.

IMPROVEMENTS IN THE HAYMARKET THEATRE.

DURING the recess Mr. Buckstone has effected a very considerable improvement in his theatre, both before and behind the curtain. By using a trussed girder, and needling up a cross wall at the back of stage over a space formerly used as a scene-dock, the stage itself has been deepened 10 feet. The old stage, lowered 5 inches, with a fall towards proscenium of 21 inches in a length of 39 feet, has been entirely removed, and a new one laid down for three bridges and five traps.

The old fly floors have been removed and new ones constructed 2 feet 6 inches higher, and set back towards the outer side walls 3 feet, the result of which is, that the flats or scenes are now 18 feet instead of as formerly 15 feet 6 inches high, and the space for scenic effect proportionably increased.

The orchestra, too, has been lowered 9 inches, as the heads of the musicians obstructed the view of the public in the pit and stalls.

Coming to the auditory, the straight pilasters and soffits of the old proscenium have been cased and panelled, and the horizontal bands and strings of the box fronts carried through where practicable, so as to connect the proscenium and audience portion of the house together.

The whole of the decorations, plastic and polychromatic, are new, with the exception of the old scroll ornaments of the upper and first circles: these it is proposed to remove during a future recess, and replace with other enrichments, more in harmony with the dress-circle, proscenium, and ceiling.

Fifteen medallions round the dress-circle, and six in the panels of the proscenium boxes, are introduced in the plaster enrichments of these parts of the house. The subjects are portraits of twenty one of the principal dramatic poets, from the best authorities, viz. Shakspeare, Ben Jonson, Beaumont, Fletcher, Massinger, Dryden, Otway, Congreve, Wycherly, C. Cibber, Rowe, Vanburgh, Gay, Goldsmith, Foote, C. Dibdin, Sheridan, Colman the Younger, O'Keefe, Bulwer Lytton, and S. Knowles.

The original straight beams over the upper circles have been cased with a cornice and frieze, breaking over the pilasters, having enriched mouldings to the members of the cornice, and scroll ornaments and shields to the frieze.

The segmental sides and spandrils of ceiling over this cornice, formerly covered with painted decorations, have been cut into geometrical form by banded architraves and enriched mouldings. The original flat boarded ceiling has been likewise cut into architectural form by moulded bands, filled with enrichments radiating from a centre star, the extreme flatness being carried off by enriched drop pendants at intervals.

Then as to the polychromatic decorations. All the plastic enrichments are gilt, and picked in, in colour. The inner cove of the proscenium has a ground of solid gold, relieved by bold coloured scroll ornaments, animals, and boys, chiefly adapted from originals by Raffaelle and his pupils.

The large cove of the ceiling next the proscenium has a centre allegorical group of female figures on a raised plinth, supported by two groups of boys on each side. The centre figure represents Thalia, the comic muse, on her left, Melpomene, the tragic, and Erato, the lyric muse, on her right. These are exceedingly well painted.

The four spandrils of ceiling are filled with painted enrichments, having octagonal moulded enriched panels, solid gilt pillar, with boys holding and painting portraits of the four representatives of Poetry, Painting, Sculpture, and Architecture, viz. Shakspeare, Raffaelle, Michelangelo, and Inigo Jones.

The spaces inclosed by the segmental arches over the cornice above boxes are filled with painted Raffaellesque scroll ornaments and centre medallions, representing Night and Morning, in imitation of cameos.

The portrait medallions round dress-circle will be painted likewise in imitation of cameos; and the ornamental bands in front of boxes will be filled with painted frets of various colours.

The curtains, vallances, and hand-rests are of a new material, manufactured at Manchester, ruby colour, with a gold silk broad border to each curtain. The pit and stalls are covered with the patent American leather. The whole has been effected in *nine weeks*.

New proscenium borders and wings, and a new curtain have been painted,—but of these hereafter.

The works have been carried out under the direction of Mr. G. Somers Clarke, architect. Messrs. Frow were the stage carpenters; Mr. Garland the modeller of the enrichments on the ceiling and panels. The *carton pierre* enrichments are by Messrs. Jackson and Son; and Messrs. Pantainius and Bendixon executed the painted decorations.

ARCHITECTS' RESPONSIBILITIES.

WE have received a number of letters on this subject, approving the views already advanced in this journal, but as they do not extend the argument it would be useless to print them. We insert one which takes another view of the question.

Observing that your correspondent "R. K." has been supported in his views by your other correspondent "District Surveyor," I am very anxious to trouble you with this, because I should be very sorry that the opinions of these gentlemen should be considered by the public as those of all the profession. And first allow me to say that I do not in the least wish to express any opinion as to whether Mr. Abraham be or be not guilty of neglect with regard to the Strand accident: the matter has yet to be tried; and I hope that all members of the profession will maintain a decent silence until the investigation has been made by a higher Court.

"R. K." states that any interference of the architect with the builder in such a matter as scaffolding or shoring, or the underpinning of a wall, would be "a pragmatical impertinence." This is a new doctrine, to say the least of it, and one which I am prepared to say is totally at variance with the usual practice of the profession. But "R. K." is strangely inconsistent at the same time. He admits that if the scaffold be designed for some "extraordinary operation," then it would become the architect's duty to attend to it. This is curious. I never heard before that because works were comparatively easy and of ordinary construction, therefore, an architect was not to give a proportionable amount of time to their inspection. "R. K." might as well say that if an architect were to have two buildings in course of erection at one time, the one a palace and the other a cottage, the cottage would claim *no* share at all of his attention.

Allow me to put a case. An architect visits a building in course of erection under his own superintendence, and there sees a scaffold-pole placed in such a manner, and so insecurely wedged or tied, that it must infallibly, sooner or later, fall on the heads of the passers by. What would be his duty? "R. K." says, to point out the defect to the builder, and let him do as he likes. I am free to own that I should consider it my duty in such a case to *insist* on the immediate remedy of the defect; and, I believe, most architects would do the same.

Then with regard to the underpinning of a wall. This is never a very easy matter, and is sometimes attended with considerable difficulty. Would "R. K." in a case like this, think it sufficient to say to a builder, "Here is a wall: I want so much brickwork put under it, and do it how you like." There is another reason why it is an architect's duty to attend to shoring and scaffolding, and that is, that he is *paid to do it*. The cost of shoring and scaffolding is inserted in the builder's estimate, and the architect always receives his commission on the whole.

I am very sorry to see architects shirking their proper responsibility in this manner, because this is one of the causes which lead the public to do without architects at all. When a client employs an architect, he always depends upon him for everything. The architect says, "My design will cost so much," and finds a builder to do it. The client has, or ought not to have, anything to do with the choice of the builder. The builder is only the subordinate of

the architect, and the architect ought to be responsible to his client for all the builder does, just as the builder is responsible to the architect for everything done by his own workmen.

If there be many architects in London of "R. K.'s" way of thinking, it may solve a mystery which has to me been hitherto inexplicable: I mean the very unscientific and insufficient shoring which is to be seen every day about London. In all cases where shoring is required, let it be always a practice among architects to describe it carefully in their specifications, and even, if required, to furnish drawings for it.

Depend upon it, sir, an architect will never stand very high in the estimation of the public when he tries to make underlings responsible for his own inattention; and I say this, without, I repeat, meaning to apply it in the slightest degree to Messrs. Lucas and Abraham.

A. B.

OUR "ROTTEN RAGS."

The strong views and violent terms of abuse employed in Mr. Ruskin's third volume just now published (and to which we shall look before long), have excited the wrath of some of our correspondents who hold different views. If they would use argument instead of returning abuse, they would be more useful: mere vituperation and calling of names we cannot insert. One to whose expression of dissent we have on other occasions given place, writes with some strong expressions which we omit:—

So at the bidding of Mr. John Ruskin, we must now, it seems, prepare to cast away forthwith our nasty "cast clouts and rotten rags," viz. "whatever is connected with the Greek, Roman, or Renaissance architecture, in form or in principle!" At all events, he is not over refined, delicate, or courteous. "Clouts and rotten rags," forsooth!—applied to a style which has given us St. Paul's and Greenwich Hospital—a Chiswick and a Chatsworth,—a Blenheim and a Holkham,—to Paris, a Louvre, and a Madeleine;—and, not to be tedious, to Berlin and Munich structures which have of late conferred on them no small degree of architectural interest and importance. What does he mean by insolently vilifying such a style?

After what he has now said, no other course is left for professional men than either openly to oppose him, or else as openly to go over to his side, confessing that they have been hitherto all along in the wrong, and are now willing to make a holocaust of Vitruvius, Palladio, Chambers, Stuart's Athens, and all extant treatises on, and encylopædias of architecture. Of learning the task is easy in comparison with that of unlearning what we have all our lives been studying; yet such task is now imposed upon us by the *ukase* of this *autocrat*.

I, myself, am a mere nobody and a cypher; but were I in the position of a Royal Academy professor of architecture, I would transform John Ruskin into a Saint Bartholomew, by flaying him alive, without the slightest mercy or compunction. Of course, I am no *gentleman*; nevertheless, yours, &c.

Z.

SANITARY MEMS.

An "Unfortunate Inhabitant" of Agar-town, while thanking us, on the part of himself and others, for the endeavours to ameliorate the shocking position they are in, complains that the Ecclesiastical Commissioners, who receive many thousands annually for the ground in this disgraceful district, are the really blameable parties for the want of drainage, in not providing a proper sewer into which the house and surface drainage can be carried. A 4-inch main, choked up for several months, he says, is all they have in this densely-populated place.

The subject of deficient water-supply is now, we are glad to observe, seriously engaging the attention of some of the metropolitan authorities. The chairman of Marylebone vestry, Mr. Whitmore, has called the public attention to the fact, that by the Metropolitan Water-supply Act of 1852, the parish authorities throughout the metropolis have the power to compel the owners and occupiers of every house to provide a proper and adequate supply of water from the companies, so far at least as a rate not exceeding 3d. a week will furnish such a supply; and the vestry have thereupon unanimously passed a resolution requiring all owners or occupiers of houses within the parish of Marylebone, not having an adequate supply, forthwith to provide the same according to the Act. This is an example worthy of imitation in every other parish throughout the metropolis. The vestry-clerk, Mr. Greenwell, on being asked as to the powers of the authorities to recover costs of water-supply from landlords, replied, that if the expenses of laying on the water were actually paid out of the poor-rate, it might be economy in the end, as it would probably be less than the permanent pauperism brought on by sickness and disease; but the Act certainly gave extensive powers for the recovery of the expenses from the landlord by distress, the same as the poor-rate; and an agent receiving the rent was held to be liable in the same manner. Mr. Hodges, at the same meeting, called the attention of the vestry to the fact that the water companies had not for years flushed the drains and sewers in some districts, as they were bound to do; and that the stench from them was intolerable.

The Reading Board of Health, we are informed, are engaged in improving the roads and pavements, doing surface matters first, after which they purpose to turn their attention to drainage, which, as our authority remarks, must tear up all they are now doing. Communications from the local and general Boards of Health, the medical officers, and the poor-law inspector, having been sent to the poor-law guardians, as to the sanitary condition of the union, the guardians have addressed the local Board of Health in a series of resolutions in which they insist upon effectual drainage as the first and most essential step towards sanitary improvement of the union district, and attention to the powers of the local Board of Health, under the Lodging House Act of 1851, as the next in importance; and the guardians remonstrate with the health board on the fact that from failing to mature and carry out a system of drainage, they allow the horrid evils of the cesspool system to continue, and to prevent the attainment of any thorough sanitary improvement whatever; while they also allow their power to cause low lodging-houses to be cleaned, whitewashed, and regulated, to lie inoperative, so that these lodging-houses are both filthy and overcrowded, as well as dangerous to the health of the town.

SMOKE CONSUMPTION.

As the question of smoke consumption is at present so fully before the public, and as information on this subject must be valuable, we direct attention to the following form of notice to engine-men, in use on the Dock Works, Liverpool, under Mr. Hartley.

There have been upwards of 100 patents for burning smoke. The "*patent*" in use at the Liverpool Dock Works consists of 3s. a week to the fireman, over and above regular wages, if the smoke is consumed: fine and dismissal if smoke is not consumed. The public have heard of failure; and, in Parliament, the feat has been pronounced impossible. There has been no case of failure, as we are told, at the Liverpool Docks.

To consume smoke requires three things; plenty of boiler room and extra fire space; constant and careful firing on the part of the fireman; and, above all, a full and perfect belief on the part of the owner of the engine-power that smoke can be consumed, with a firm determination that the feat shall be accomplished.

It has been this belief and determination on the part of Lord Palmerston which has given to the metropolis the Smoke-consuming Act. Our magistrates must imbibe the same belief, and fine all transgressors, with a determination to abate the nuisance.

"Take Notice.

The officers of 'The Health of Towns Commissioners' having frequently made, and continuing to make, serious complaints against the quantity of smoke issuing from the chimneys of the steam-engines employed on the Dock Works, and it being my wish to prevent all cause of complaint in future—knowing that, by proper care and attention of the engine-drivers to the fires, no smoke need be seen to issue from any of the Dock engine chimneys, after the first hour from the fire being lighted,—and in order to encourage prompt and strict attention to this matter,—I have determined to allow each engine-man, against whose engine chimney no cause for complaint has been found, 3s. per week over and above his regular wages; which money is to be kept in hand, and become payable quarterly, after the expiration of the second quarter, so as always to leave one clear quarter's smoke-money in hand, when the previous quarter has been paid. And that if proper attention be not paid, and smoke be seen to issue from the chimney, the engine-man will be forthwith discharged, and all arrears of such smoke-money in hand will be forfeited, without any appeal whatsoever, and the money paid into the Dock Workmen's Sick Relief Fund.

The steam must be efficiently kept to the full required power of the engine. It is to be understood that, whatever assi-tant the engine-man may be allowed, such assistant is to be under his entire control; and if not satisfactory, the foreman of the works must be informed thereof, who will inquire into all complaints, and, if substantiated, will discharge such assistant forthwith, and send another in his place."

It has been proposed by some influential persons in the City of London to organize a society to bring the Smoke-consuming Act efficiently into operation, and to assist in other ways in getting rid of the costly nuisance we *enjoy* at present. We shall gladly transmit intimations of willingness to co-operate to the proper quarter.

BUILDING AND OTHER WORKS IN IRELAND.

A new convent for the Sisters of Mercy is to be built near the cathedral at Killarney, to the right of the town on entering from Tralee. The site has been given by the Earl of Kenmare. We are glad to see some signs of progress in this hitherto neglected locality. The intended cathedral works, for which the services of Mr. McCarthy have been engaged; the Killarney Junction Railway Hotel (previously noticed); and some other matters which we hear spoken of, will be improvements to the town.

Mr. Farrell, architect, is the successful competitor for the new Academical Institution at Coleraine, and we are informed that the second premium has been awarded to Mr. Boyd, architect, Belfast.

We hear that a fac-simile of the large Railway Hotel at Galway is to be built by capitalists at California, and that the working plans, &c. are in preparation by the architect, Mr. J. S. Mulvany.

A new savings-bank containing the ordinary arrangements of public hall, actuary's and other offices, &c. is to be erected in James-street, Dublin, from the designs of Mr. Hugh Carmichael, architect. The cost will be between 3,000*l.* and 4,000*l.*

The superstructure of the Dunkitt Viaduct, on the Waterford line, is nearly 600 feet in length. Piles from 40 to 45 feet long have been driven in to form the foundation, and the structure contains upwards of 26,000 cubic feet of timber and 40 tons of wrought and cast-iron.

A linen factory consisting of one large apartment 107 feet by 64 feet, with roof of glass, and eighty-seven looms and warp-mill therein, has been erected at Belhavel, county Leitrim, by a Scotch company. The same company intend building a scutch-mill near the site. Mr. John Corry, architect.

It is announced that the Dublin Exhibition will close on 31st inst. but we have good authority for stating that this merely concludes the committee's contract with season ticket holders, and that for some time afterwards the public will have access at reduced charges.

The Brick Trade in Glasgow.—The brick-making trade this season has been uncommonly brisk, according to the local papers, owing to an increasing demand for materials for building public works, such as cotton-mills, foundries, chemical works, common sewers, &c. besides dwelling-houses for number and extent unprecedented in Glasgow. Brick manufacturers, in some works, have now introduced machinery. The price at present is 30s. per 1,000 at the work, having advanced 5s. last month. The drain-tile and pipe works are also kept in constant operation. There are large manufactories for these now in Glasgow.



ST. AUGUSTINE'S SCHOOLS, LIVERPOOL.—Mr. H. P. Horner, Architect.

ST. AUGUSTINE'S SCHOOLS, LIVERPOOL.

St. Augustine's National Schools, in Salisbury-street, Liverpool, occupy an area of twenty yards in front and thirty-seven yards deep, which was purchased at a cost of 550*l*.

The building consists of a principal or main portion, lying on the northern part of the site, and two wings; the main building containing the schools, the infants' on the ground-floor, the boys' on the first, and the girls' on the second floor, each about 65 feet by 28 feet: the land falling from east to west, the infant-school is partially sunk on the Salisbury-street side, and the ascent to the other two schools is proportionably diminished. The infant-school is 15 feet high, the boys' 16 feet, and the girls' 11 feet to the wall-plate, and 30 feet to the ridge. Of the wings, which project southwardly from the schools, the front one contains the approaches and cloak-rooms, and the back or western wing the class-rooms and a committee-room; the intermediate space, which is bounded southwardly by other buildings, forming the girls' yard; those for the boys and infants lying westward of the schools and class-room wing, next Back Salisbury-street. The infants' and boys' class-rooms are each 24½ feet by 23 feet, and the committee-room the same, occupying a *mezzanine* between the boys' and girls' class-rooms, the last-named being 24½ feet by 27½ feet. There is accommodation, without overcrowding, for about 900 or 1,000 children.

The general character of the building is the Early English exhibited by some of the plainer conventual buildings of that period. The front to Salisbury-street is the principal one, and displays a gable, flanked by buttresses, and pierced by the eastern windows of the schools; those of the infant school being six lights, in pairs; those of the boys' five (a triplet in the centre and a single light at each side); and the girls' an arrangement of five lights combined, rising into the gable. The approach to the boys' school is by an external stair, and above it rises a turret, oblong on plan, surmounted by an acute leaded roof, crested with cruciform ornaments in gilt metal.

The materials of the front are Upholland wall stone and white Runcorn stone dressings, the remainder of the building being of brick with red stone dressings: all the bearing timber is of Baltic growth.

The work was contracted for by Mr. James Burroughs, for the sum of 2,800*l*. and associated with him, as sub-contractors, are Mr. William Wells, mason; Messrs. J. and R. Duckworth, bricklayers; Mr. Alderman Bennett, ironfounder; Mr. Thomas Jones, plasterer; and Mr. James Crellin, plumber, &c. The architect is Mr. H. P. Horner. The first stone was laid on the 18th of May, 1852, and the schools were opened on the 18th of April, 1853.

An excellent chamber organ, the gift of Mr. Thomas, a member of St. Augustine's congregation, occupies a convenient position in the girls' school-room. A bell is to be placed in the turret. The schools were in the month of September visited by Mr. Kennedy, the Government inspector for the district, who expressed entire satisfaction with the arrangements.

THE NEW CORN-HALL, MUNICH.

As the whole corn-trade of the south of Germany centres in the Corn-hall of the Bavarian capital, the erection of this new building was one of great importance; and it now proves to be the first structure of the kind on the continent. Its whole length amounts to 1,477 feet: the transept is 80 feet, by a depth of 105 feet; the lateral wings 76 and 95 feet deep. The two halls erected at the end of the central building are supported by four rows of columns, the length of each hall being 563 feet, with a depth of 86 feet. These seventy-two columns and the entablatures are of cast-iron, and of Bavarian fabric; and the putting up of the framework and the roofing of one hall occupied twenty-three, that of the second only twenty-one days. The columns were erected during the short lapse of four hours. Each column weighs 28 cwt., one entablature, 40 cwt.; and the amount of cast-iron used is 20,000 cwt.; that of wrought-iron, nearly 10,000 cwt. The time required for this building extended to two years, the whole expense being from 800,000 to 900,000 florins—a large sum in Bavaria. The original plan for this gigantic undertaking was made by a Frenchman, M. Wolfberger, the architect who also built the Munich gasworks: to this came one by the building counsellor, M. Muffatt; and from the combination of these two the actual building was constructed. M. Maffei, the well-known owner of the engine-manufactory of Munich, was the contractor. The only objection raised against this large hall is its situation, which being distant from the railway termini, will require a shifting and unloading of the corn, now chiefly conveyed by rail.

PROVINCIAL NEWS.

Leadbridge.—The South Essex Gas Company have laid the foundation-stone of gas-works here for the supply of Leyton, Leytonstone, Walthamstow, Wanstead, and Woodford. The plans for the works were furnished by Mr W. M. Stears, C.E. of Sydenham.

Chatham.—The formation of a basin with three docks will shortly be commenced here, for the accommodation of larger ships than heretofore.

Southampton.—The foundation-stone of a new graving-dock was laid at this port on Friday in last week, by Mr. A. Giles, engineer to the dock company. Messrs. Baker and Sons are the contractors. The recent enlargement of the average calibre of ships is also the occasion of forming this new dock.——An extensive enlargement of the gas-works here is in progress. The retort-house will contain upwards of 100 retorts. The builder is Mr Snook, and the architect Mr. Joseph Hill. The ironwork and machinery were contracted for by Messrs. Walker and Co. of London, and the Bartley Iron Company.

Upper Studley.—St. John's Church here was consecrated on Tuesday in week before last. Earl Manvers gave the site for the church and yard, parsonage and school. The church has been erected at the cost of an unknown benefactor. The building is in the Old English style, and simple in design.

Malvern.—The new church erected at the cost of the late Earl of Beauchamp, on the site of the old parish church, will shortly be ready for consecration. It will contain 200 sittings. Mr. Pugin is the architect, and Mr. Myers the builder. An east window of stained glass, given by the Countess of Beauchamp, is to be furnished by Hardman, of Birmingham. The church, which consists of chancel, nave, north chapel, stone porch on south of nave, and bell-turret over the western gable, is in the Decorated style. The old family mausoleum remains unaltered on the north side of the church. The seats are open.

Chichester.—The foundation-stone of the new training-school for school mistresses for the diocese was laid by the Countess of Chichester on Wednesday in week before last. The site of the new building is on Rose-hill.

Felton.—The foundation-stone for a new church for the parish of Felton, diocese of Hereford, dedicated to St. Michael, took place on St. Michael's-day. The stone was laid by the lady of the rector. The church is to be built upon the site of the old one, in the Decorated style of Pointed architecture, after designs by Mr. T. Nicholson, architect to the diocesan board, and is to consist of chancel, nave, south porch, tower, and vestry. The materials of the walls are to be the rough stone of the country, relieved with Bath stone dressings. Internally the tower is to be open to the nave by a lofty arch, the roofs visible and framed with timber, and the chancel laid with encaustic tiles: all the internal arches and doors are to be of Bath stone. The builder is Mr. George Morgan, of Hereford.

Holyhead.—The new church of St. Seiriol, designed by Mr. C. Verelst, of Liverpool, will be built on ground presented by the Marquis of Anglesey. The edifice will be surmounted with a spire, 131 feet high, and will be in the Early Decorated style; the plan consisting of a chancel and nave, with north and south aisles. The roof will be open, and the woodwork of it, as well as the open seats, will be stained and varnished. The eastern window will be of four lights, surmounted with flamboyant tracery, and filled, it is hoped, with stained glass. The church is designed to accommodate 753 persons, half free. The foundation-stone was laid on 30th August.——A recent storm, severely felt in North Wales, has caused serious damage again to the works at the new harbour, particularly to the pilings.

Bangor.—The greater portion of a new chapel, now in course of erection for the Calvinistic Methodists, has been blown down, the damage being estimated at 100*l.*

Rhosllanerchrugog.—The new church here dedicated to St. John the Evangelist, was consecrated on 4th inst. by the Bishop of St. Asaph. It is a fine specimen of Norman architecture. The total cost was 2,290*l.* Mr. Thomas Penson, of Gwensyllt, was the architect, and Mr. Ebenezer Thomas, of Menai-bridge, the builder. The work does him great credit.

Nantwich.—The small church here has been rebuilt and re-opened. It is of the second period of pointed architecture, and built of native limestone with dressings of Mold stone. It consists of nave and chancel, with a bold tower and spire. The roofs are high-pitched, and open to the rafters, which are stained and varnished. The seats are low and open. The east window is filled with painted glass by Gibbs, and the western rose window with heraldic glass. The church will seat 320 persons. It has been rebuilt under the superintendence of Mr. J. Lloyd, of Mold, the design having been furnished by Mr. T. H. Wyatt.

Shenstone.—The new parish church was consecrated on Thursday in week before last. It stands on a site adjacent to the old church; is dedicated to St. John the Baptist and St. Peter; and is of Gothic architecture of the fourteenth century. The building consists of nave, two aisles, vestry, and recess for organ. The nave and chancel are 120 feet long and 22 feet wide; the north and south aisles 12 feet wide; the organ recess 30 feet 6 inches by 12 feet; and the chancel 32 feet long by 19 wide. The church seats 600 persons on ground floor without galleries. The tower will be at north-east angle of nave: it is yet unfinished, a portion only of the necessary subscriptions for that particular purpose being raised. The internal window dressings and arches of the church are faced with stone. The roof of nave is open, and is of stained deal varnished, covered with Staffordshire tiles: the chancel roof is of same material, with moulded arches springing from stone corbels. The fittings are of deal, stained and varnished; the pulpit, reading-desk, and altar-rails of oak; and the floor is laid with ornamental tiles. The edifice is lighted with three and five light windows.

Bromsgrove.—The corn exchange here is nearly finished.

Newcastle-under-Lyne.—The foundation-stone of the new covered market to be erected here was laid on Thursday in last week by the mayor. The ceremonial included a masonic procession, with military band, &c.

Fenton.—The foundation-stone of an Athenæum was laid here last week. The style of the building will be Italian, and the material red-stone and brick, with white stone dressings and panels of Minton's tiles beneath the windows.

Liverpool.—A new pile of building for merchants' offices is in course of erection in the Italian style near the Exchange. Mr. Culshaw is the architect, and Mr. Jones the clerk of works. The premises will be let by auction when completed. A narrow plot of freehold land adjoining the site of this building was recently sold, according to the local *Journal*, at 40*l.* a square yard.

Manchester.—There is now in course of erection in Mount-street, Peter-street, a warehouse which will consist of six stories, including the basement, and will be at least 70 feet high to the cornice: it will have a frontage of 162 feet, and the breadth will be 106 feet.——The foundation-stone of new schools, near the Denton chapel, was laid last week, by a little girl, seven years old, a daughter of the donor of the site. The Bishop of Oxford and Mr. and Mrs. Gladstone were present. Mr. Bird is the architect, and Mr. Brammall the builder. There will be two school-rooms, 65 feet by 18 feet, with class-room to each, 20 feet by 16 feet; the whole accommodating 300 children of both sexes. The style will be Tudor.

Preston.—The Ragged School is in course of erection, from a design presented to the committee of the local Board of Health, by Mr. J. S. Hardy, of York, architect. Mr. J. Todd is the contractor for the brick and stonework, and Mr. R. Aughton, jun. for the carpentry and other work. Further donations will be thankfully received by the committee.

Derby.—The town council have passed a resolution to erect public baths and washhouses.

Doncaster.—St. George's chapel is to be enlarged so as to provide 236 additional sittings.

Holmfirth.—The old church of Holmfirth has been renovated. Extensive repairs, cleansing, painting, varnishing, &c. have been effected.

Grimsby.—The gas company here have recently announced, that the price of gas per 1,000 cubic feet is henceforth to be reduced from 5s. 10d. to 5s. Many, it is thought, will now admit it into their dwellings as well as shops.

Tynemouth.—Mr. Walker, civil engineer, recently attended at Tynemouth, to receive evidence and statements as to sites for the piers proposed to be erected at the mouth of the harbour here. There were eleven plans in all,—from Mr. Rennie, Mr. Rendell, Capt. Purdo, Mr. Thomas J. Taylor, Capt. Washington, Lieut. Calver, Capt. Veitch, Mr. Henry Turner, and three from Mr. Brooks. The witnesses examined were all in favour of Mr. Rendell's plan, which was to construct piers over the Herd Sand and another on Tynemouth rocks; and also two inner piers at the Narrows, running east, one from the Low Lights on the north shore, and the other parallel to it on the south shore, to commence near the Herd Sand beacon. Capt. Walker said that with regard to parallel walls he was decidedly opposed to them, so that the evidence given in favour of Mr. Rendell's plan varied a little from his opinion.

Cockermouth.—The spire of the new church was completed on 7th inst. in the midst of balloons, fireworks, &c. The height is about 175 feet.

Carlisle.—In cleansing one of the large pillars of the cathedral a rude painting, somewhat like those on the side aisle, was lately discovered. The restoration of the cathedral is proceeding.

Edinburgh.—The proposed new street from the High-street to the Waverley-bridge is to be executed. The cost will range from 50,000*l.* to 60,000*l.*

Dunfermline.—A filtering-floor for the town waterworks has been formed. The filter, according to the *Fife Herald*, is composed of a floor of stone slabs, open and uncemented at the joinings, and supported from below on pillars 8½ feet high, including the lintels. On this floor a layer of 12 inches of rough granite is laid, and above this a layer of fine gravel 6 inches deep. The whole is covered with a layer of fine sand of 18 inches depth. Through these three layers the water must percolate into the filteries beneath the slab-floor. The gravel and sand are washed before being put into the tank. The gravel, after it has gone through two riddlings, to reduce the pebbles to the diameter of half-an-inch, and free them from dirt, is carted to a washing-mill, erected behind the reservoir.

Water is conducted in a trough from the fountain to a scaffolding, and falls into an apparatus like the hopper of a mill. Into this hopper the gravel is pitched, and is rolled by the water down three inclined troughs 8 or 10 feet long, each running opposite to the one above. On the lowest of these troughs there are two screens: the first lets through all pebbles below a quarter of an inch, and stops all above that diameter: the second is an eighth-of-an-inch screen, and stops all the quarter-of-an-inch pebbles. Thus the rough and fine gravel is selected and washed at the same time. The reservoir is a great shed, with a pyramidal roof. The shed is 80 feet long and 40 feet wide, and the tank is divided near the middle with a brick wall, and edged round with a narrow footway.

Hoddington.—The ceremony of laying the foundation-stone of the new Corn Exchange took place on Monday in week before last, amidst a brilliant masonic display, headed by the Marquis of Tweeddale, who laid the stone. The day was held as a general holiday. The proposed covered grain-market will occupy a site immediately to the east of the county buildings. The area which it will cover is 128 feet by 50 feet, and can be enlarged. The work of erection was commenced about a month ago, and is expected to be finished in March. The walls will be of stone, and the roof of iron, with large glass windows. The front elevation will be of a plain and unpretending character. The cost of the building has been estimated at 1,472*l.* the expense of the site being 775*l.* The subscriptions have realized 1,800*l.* leaving 400*l.* or 500*l.* yet to be made up.

RUINOUS BUILDINGS IN LONDON.

Our attention has been asked to the condition of a house at the corner of Davies-street and Oxford-street. It is unquestionably in a very dangerous state, but it has been shored up and is apparently under supervision. It stands at the corner of two streets, and is one of those miserable pieces of construction wherein both front and flank wall are supported on wooden story-posts or small iron columns. It has come over, and the adjoining house, notwithstanding a secret skin of compo,—or hider of rottenness,—has followed it, so that if anything should happen the two would come down together. To make matters worse, there seems to be a heavy chimney-breast attached to the party wall which has been cut away at the bottom, and is therefore pulling the wall over at the top. All we can do is to awaken attention to the fact that it is in a very doubtful condition, and so, by the way, are many other houses in the metropolis at this moment which have not yet received any attention.

BOSTON CHURCH, LINCOLNSHIRE.

The Architectural Society of the diocese of Lincoln held their annual meeting a few weeks ago, Lord Monson presiding. Various papers were read, and amongst them one by Mr. Place on Boston Church, from which we take the following particulars.—

No part of the church as we now see it, he said, is older than 1320 or 1330.

About this time the greater portion of the present edifice was built consisting of the nave and aisles, south porch, and three bays of the chancel, but no tower. The west front of the decorated church is yet traceable: externally the large turrets show themselves though built into the tower and almost hidden: internally the arch which opens the tower to the nave plainly shows itself to have been formerly the arch of the decorated west window. The present wooden doors of the tower are the same which hung beneath the west window of the decorated church. We see then that the church was first built without the tower and the two additional bays of the chancel.

Let us now try to call back the church as finished about 1360. We must take away the tower, restore the door, window, and the turrets of the west end, put on the high pitched roof of the nave, and reduce the chancel to three bays in length.

To see Boston Church without its tower would certainly seem strange, but that it was finished without and so remained for many years is quite certain. To have rebuilt the church on a scale quite unprecedented for its vastness is a matter well worthy of investigation. There are many large churches 70 to 80 feet wide by 150 to 200 long, such as Louth, or Grantham, or Newark; but the grand dimensions of 100 feet in width by 300 in length were only such as could satisfy the parson and people of Boston in the days of King Edward III.; and a century later, they were not content until the tower of their church had reached 300 feet in height, to the surpassing of all other churches.

About a century after the church was finished, a change in its constitution took place, and it became not only parochial, but also collegiate. About this time (A.D. 1440), considerable additions were made: the chancel was lengthened to give room to its new occupants, some of the tracery of the windows altered, and the tower added to the west end. Indeed, the fabric was then altered and completed to the form in which we now see it, or at least nearly so.

For the sake of keeping the details as clear as I can, I will mention them as they occur.

Firstly, the Anglo-Norman church of about 1150, for about 4 feet of its height lies buried under the present floor, and what it was may yet be seen in the nave (at least) of Sibsey church.

The plan was—nave, about 25 by 60; aisles, 12 by 60; chancel tower, 9.

Secondly, the decorated parts are—the east wall of the chancel, the three west bays of the chancel, the nave, aisles, and west end, now built into the tower, the south-west chapel, and the tower story of the porch, and the most beautiful wooden doors. The handle on the staircase door.

Thirdly, the perpendicular works are the two bays (east), and the parapet and pinnacles of the chancel; the chancel stalls, the tracery of the windows of the east ends of the aisles, the parapet of the east end of the north aisle—well worthy of examination. The upper story of the porch, the tracery and pinnacles at the west ends of the aisles, and, lastly, the great west tower, with, of course, the roof and wooden groining of the nave.

Fourthly, still later works are the roofs and groining of the aisles, and the present pulpit of A.D. 1620.

Upon considering the church as a whole, it is so proportionate and harmonious that the general observer would never imagine it to be the work of two distinct times, and of two distinct styles of architecture.

In noticing more particularly the perpendicular works, we shall observe how carefully the architect designed his new work to harmonize with and to complete the former church. For instance, he was careful, in enlarging the chancel, not only to continue the walls further east of the prescribed pattern, but also to remove the east wall and rebuild as it formerly stood. The walls and window-arches, &c. were carefully matched, but to these was put the prevailing tracery of the day, of course perpendicular. The parapet and pinnacles are also perpendicular, and occupy the places of much fairer decorated ones.

It requires not the most splendid design, the deep calculation of weight and thrust, or in a word that perfect knowledge of the regal art of masonry so well possessed by the perpendicular architect of the tower of Boston—I say it requires not these to show that he was also a man of the highest good taste; for instead of perpendicularizing the church (as was the fashion of the day), he developed and completed in spirit, if not quite in detail, the noble idea of his decorated predecessor.

The building of the tower according to the ancient documents so well known begins about A.D. 1300. I am of opinion that this is a mistake, and should be sooner 1409. If the document be correct, then the decorated architect laid in the foundations of a tower which he never finished, and for which, above ground, he appears never to have provided. It is much more likely that the date should be 1499, and that, 50 or 60 years after the completion of the church, the tower was begun and finished, including foundations and all.

To notice the tower in all its bearings is no slight task.

As a work of ornamental art, its fame is world-wide. As a piece of constructive building, its lightness and its strength are so calculated as to give it the best endurance that anything in this world can have.

I will now notice the condition of the interior previous to the restoration.

About 100 years ago, a restoration and refitting of the interior took place in the then prevailing taste. The east window of the chancel was blocked up by a Corinthian altar-piece; the floor paved in white and black marble; the chancel stalls were cropped of the canopies and other ornaments; the screen was taken away to make room for the late organ and singing gallery, the body of the church was furnished with high pews, and the glazing of the windows newly done in oblong panes.

But the greatest mischief was the destruction of the groin of the lower lantern of the tower, and the building of the late ringing-chamber and its floor at the general height of the rest of the interior.

It is but fair to state that these works were done in the best manner, and upon a most liberal scale: of the taste which suggested them, we can say but little; but sure it is that our forefathers of that day were denied the privilege of working in the same manner, though in the same spirit as their forefathers.

ENLARGEMENT OF SALFORD ROYAL LIBRARY AND MUSEUM.

The building of the Royal Library and Museum at Salford, has now been enlarged so as to form part of a still more extensive design, and was reopened on the 1st inst. The work has been carried out under the superintendence of Messrs. Travis and Mangnall, of Manchester, architects, the designers of the enlargement. The alterations consist of the re-arrangement of the rooms of the old house, the additions in the erection of a spacious new building on part of the site of the old stables and out-offices at the back,—the rest of the site being laid out for the construction of another wing at some future time.

The new portion of the building is of stock bricks, and presents five large arches with stone keys, beneath each of which are two windows. Above them is a cornice, marking the height of the reading room; then a large mass of brick-work, relieved by a thin band of stone, forming the walls of the picture-gallery; above that another cornice, on which is imposed a finishing tier of brickwork, hiding the sloping roofs of the gallery. There are various ornaments upon the corners to complete the design. Internally, however, the alterations will strike the visitor as much more considerable.

They are fully described, with plan, in the *Manchester Courier*, from which we glean a few particulars. The dimensions of the whole are as follow:—Length of portico front, 63 feet; length of library, 64 feet 9 inches; length of reading-room, 75 feet; giving a total length of 139 feet. The entrance-hall and corridor are 64 feet 9 inches long, and the staircase-hall, and staircase, 42 feet long by 25 feet wide. The vestibule of the corridor within the portico is a space 18 feet long by 12 feet broad. The lower corridor measures 47 feet in length by 18 feet in width, and 13 feet 6 inches in height. The corridor is filled with statuary. The floor is of stone, and there is about 11 feet clear space between the pedestals. The hall in front of the grand staircase, which is next entered, and where the new building begins, is 17 feet in length, width 25 feet. Opening from this hall the most extensive apartment is the reading-room below the picture-gallery. The length of the reading-room is 75 feet, width 30 feet, height 16 feet.

The grand staircase is constructed in a building erected on purpose for it and the hall in its front. It is of polished stone. There are first, fifteen steps 8 feet 6 inches long, rising 7 inches, and with 1 foot tread. Up each side is a baluster of 2 feet 10 inches high, starting from massive square pedestals, and finishing in the same on the first landing. The landing is 24 feet

6 inches by 10 feet 6 inches, and is adorned with sculpture.

The picture-gallery opens from the upper landing. It is of the same proportions, in respect to length and breadth, but something higher than the reading-room, upon which it rests. It is lighted by sloping lights along both sides and one end, forming a portion of the roof, and resting upon the upper edge of an enriched cove. Cast-iron has been extensively used in the construction of the roof, which is divided into five sections by enriched arches. The arrangement of the roof and light follows that of the picture-gallery of Lord Northcote, at Cheltenham, with such improvements as the skill of the architects suggested, the wall space being extensive. It is intended to occupy the floor of the room with cases filled with specimens of the industrial products of this and other districts. As the building is of great height, and this room of considerable altitude, iron girders rest upon the wall pilasters, here almost taking the form of abutments; and upon these girders so supported is imposed the weight of the beams forming the upper part of the cove upon which the thrust of the sloping roof is cast.

The upper corridor extends over the lower, and is of the same dimensions in length and width. The architects seem to have had an awkward task to arrange it, as the floor of the upper story of the old building is 3 feet 6 inches lower than the height they required for the ceiling of their reading-room and landings. They have therefore constructed a descent from the landing of six steps of wood, each 7 inches deep. The opening for this short flight of steps is 12 feet, and its height about 8 feet.

The foreign natural-history room extends along the whole front of the building, and measures 60 feet by 18 feet.

The contractors for the works connected with the enlargement were,—for the woodwork, Messrs. Suthern, of Salford; for the grand staircase, Mr. Charles Sigley; plastering and painting, Messrs. Ward and Co. of Strangeways; brickwork, Mr. Joseph Barker; stonework, Mr. James Dawson; plumbing and glazing, Messrs. Harrison, of Salford.

RENOVATION OF ALL SAINTS' CHURCH, HEREFORD.

This venerable fabric was formally re-opened for divine worship on Tuesday, the 20th ult. after having undergone, during several months, an entire renovation internally, and a refitting with new oak sittings in the prevailing low-backed style. Authorities are silent as to the date of the building, but records tell us that it was presented to the Master and Brethren of the Hospital of St. Anthony, of Vienna, by Henry III. and that they, early as Edward I. established a society here to protect and superintend their property. The edifice, which stands nearly in the centre of the city, possesses little in its external appearance to attract the attention of the traveller, unless it be its spire, a fine old porch at its south entrance, and the general dilapidated state of the building, which consists of a nave, chancel, and side aisles, with a massive tower springing from the ground, and terminating in a lofty and well-proportioned spire, which from every part of the surrounding country forms a striking object in the landscape. This tower has for a century or more considerably overhung its base on the north side, and about the year 1780 much danger being apprehended from its appearance, two immense buttresses were accordingly built to sustain it. The nave is separated from the aisles by circular columns sustaining pointed arches, and the roof is a very beautiful one of timber, that of the nave being a "king-post" in the Perpendicular style of the fifteenth century, and that of the north aisle, a "queen-post" in the Decorated style of the reign of Edward III. The galleries which formerly existed in the north aisle, and also under the tower in the western part of the edifice, where the organ also originally stood, have been taken down, giving not only greater cheerfulness to the place, but also bringing the ancient projecting angel-head brackets, pierced panels, pendants, &c. of the roof into fuller view. The organ has been transferred from where it originally stood to the further part of the south aisle; but though its position has not by any means been improved, its removal from under the tower has given a better idea of proportion and lightness of appearance to the whole structure, which before was one of the most miserable that could well be imagined. The roof has been cleaned down, and the colour given to the walls makes it stand out in better relief. In the chancel, which is panelled oak, there are a number of fine, massive old stalls, which are supposed to have been appropriated to the use of the brethren of the Hospital of St. Anthony. The elbows of these relics exhibit carvings of the heads of men and animals, and their supports are carved after ideas of a far more whimsical character: their canopies are ornamented with quatre-foils, flowers, and foliage. The exterior still bears (and is likely to do so) the dilapidated and shabby appearance it has worn for years; and the Vandalism that substituted a row of red bricks for a decayed stone cornice, running along the parapet on the southern roof, still remains to contrast with the fine old porch below it, and as an inheritance to those who have not the spirit to restore the place to its primitive appearance. The floor of the church has been improved in appearance by being covered with encaustic tiles, of good manufacture; but much of the beauty observable in flooring of this kind is marred by the uneven and unworkmanlike manner in which they are put down. The architect for the alteration and repairs was Mr. Nicholson, of that city, and the work was executed by Messrs. Davies and Treherne, builders.

Concerning the spire, there has been much warm contention for some time past,—one party in the parish advocating the removal both of church and spire, on the ground that it was dangerous to the public, and another party opposing this movement on the ground of expense. It has at length been determined that it shall stand, Mr. Carline, of Lincoln, having been called in to give his opinion, which was in favour of its safety.

THE EDINBURGH BELL-HANGING TRADE.

The business of bell-hanging, as a separate and distinct trade in Edinburgh, is of modern date, having originated in the progress of building in the new town of that city. Previous to that time bell-hanging usually formed part of the business of a locksmith.

The following particulars as to this modern trade in Edinburgh are condensed from the local *News*:—

The first great improvement was the introduction of the present method of concealing the bell-wires. Until within the last thirty years they were all exposed—run along the cornices, or in some cases just above the skirtings of a room. In that position they formed anything but a sightly ornament; and however serviceable, were often dispensed with in elegant drawing-rooms for that very reason. The first improvement, then, was the concealing of these wires. This was originally effected by simply encasing the wire in a tube sunk under the plaster. But the improvement was carried still further. In place of pursuing a direct route, for example, between a parlour and the kitchen, the whole wires of the house, however numerous, are now conveyed into one great leading channel in the staircase, and from thence are carried to the top of the house, whence they are again distributed to their proper destination. Some of our Edinburgh bell-hangers are also bell-founders.

This system of bell-hanging concentrates the wires in one particular place, of easy access, and renders the repair of them at all times a comparatively easy matter to what that would be were the different channels to every bell-wire scattered throughout the house. The tubes for these purposes are constructed of white iron, zinc, and in the best houses of copper. The bell-wires are mostly of iron, but copper is the best. A considerable amount of skill is requisite in the proper fitting up of these wires and tubes. In place of the old pulls a neat crank is now substituted at each side of the fireplace. From this, in a good modern house there are no wires to be seen, no bell-pulls to come down by the run when "missus gets in a passion," and none of those crimson tassels which young ladies love to embroider or decorate with crochet.

The next great improvement in the trade was the invention of what is called "apparatus for common stairs." Most of our Edinburgh readers who live in flats will recognise in this the very convenient machinery for opening the "stair-foot door." This was introduced about twenty-five years ago, and was immediately adopted in all the common stairs of the New Town when in the course of erection. The contrivance originally consisted of first carrying a tube up the inside of the staircase wall: brass sliding pulls were attached to this at every landing: a stout wire was then connected with these pulls at the one extremity, and at the other with a large crank at the stair-foot which opened the door. It was next improved upon by the method of carrying the wire, like that of a house-bell, up to the roof; where it passed over a large pulley and was then applied to the crank and chain as before. The latest and what we take to be the greatest improvement is that of converting the outside pulls and plates into an interior handle, by which means the stair-foot door can now be opened from the inside of each house in the stairs.

The science of speaking-tubes and telegraph-bells was then taken up by the Edinburgh bell-hangers, who have really carried the details of these things to the limits of perfection. Those of our readers who frequent public offices must have observed a cabalistic-looking brass plate attached to the wall in a prominent position. That is the termination of the speaking-tubes or the telegraph bells, which communicate with the different parts of the building, through which the messages are conveyed to the different officials up-stairs, down-stairs, or in the back settlements. The speaking-tubes, if they are such, are constructed of copper or block tin; and recently gutta-percha has been successfully adopted for the same purpose. The idea of speaking-tubes, we may add, is as old in this country as the Roman era. The different forts along the line of the great Roman wall were connected with speaking-tubes of copper.

To construct, to hang, to put together, and in whatsoever manner to fit up these bells, bell-wires, telegraphs, and speaking-tubes, is then the business of the modern bellhanger. It will be seen at a glance that the trade is one that requires no ordinary degree of skill on the part of the workmen. The greater part of the business in Glasgow, throughout Scotland, in Ireland, and to a considerable extent in England, is executed by the master bell-hangers of Edinburgh. But these gentlemen are not content with following after one intricate business. They follow after some more. They are brass-founders; they are gas-fitters, they are Venetian window-blind makers, and hand-railers. They supply all kinds of name-plates, door-plates, and carpet-plates. They purvey all kinds of luxurious ornaments in the shape of furniture for doors and windows; porcelain for drawing-rooms, buffalo for dining-rooms, ivory for bed-rooms. In short, the business of an Edinburgh bell-hanger is one of the most heterogeneous character.

Confining ourselves, however, to the business of bell-hanging proper, we believe there are about forty of that class of tradesmen in Edinburgh. The wages are somewhat above the average of most trades connected with building: they range from 20s. to 22s. per week. In addition to this they are allowed 9s. per week when working in the country. There have been no strikes in this trade, and it is not likely there will be. The men are almost uniformly intelligent, temperate, and well-behaved.

Map of the Arctic Regions.—The recent researches in these parts, which the various scientific journals are now actively discussing, has been an incentive to Mr. Wyld to publish a chart, taken from the Admiralty surveys, but which he has rendered interesting as showing, by means of the colouring, those portions which it has been the fortune of the different investigators to discover, from the Rosses, Parry, Franklin, Back, &c. down to those of the latest date, Penny, Austin, Kellett, Inglefield, McClure, and Belcher.

DRAUGHTS IN PUBLIC BATHS.

I went the other day to take a warm bath at one of the public establishments recently opened, and had not been two minutes in the bath when I became sensible of a current of cold air descending upon my head. The roof over the baths formed a sort of lean-to towards a wall or partition, 12 or 14 feet high, against which the head of the bath stood. The upper 5 feet, or thereabouts, of the aforesaid wall or partition was glazed in a continuous line of sashes, about 5 feet high, and there was a line of skylights in the centre of the lean-to roof, which roof appeared to me to be merely boarded under the slates.

I looked to see if any of the lights were open, or if there were any arrangements for artificial ventilation, which, if improperly contrived, might have caused the draught in question; but perceiving nothing of the kind, it only remained to attribute the descending current of cold air which I felt to the cooling effect of the roof or ceiling, whichever it may be styled, and to the large surface of glass, disposed in a most favourable position for creating reciprocating currents. This would be likely to induce serious consequences. Double glazing for the skylights, and for the lights in the partition wall, with a counter-ceiling of lath and plaster under the roof are absolutely required; for however suitable such a roof as this may be for a railway-shed, it is quite out of place in a public bath and wash-house establishment. S. E. R.

"LIME FLOWERS."

I was much pleased when on reading the *Builder* (*ante*, p. 611), I discovered that the formation of (what for want of a better name we are forced to call) "lime flowers" has attracted the attention of the members of the British Association. I have paid some attention to the circumstances which operate to produce such, and the explanation which I have determined on has obtained the approval of engineers of eminence.

In 1834, when building the Victoria Dock, at Passage, Cork Harbour, I noticed most particularly this curious and interesting phenomenon, and I endeavoured to possess myself of a knowledge of the causes which tend to produce it. I have invariably discovered that the effect occurs most eminently when the lime is used in as fresh a state as possible. The lime I used I obtained from Aberthaw, and it is of a particularly superior quality. The bottom of the excavation was composed of strong clay, intermixed with gravel, which allowed the leakage to ooze through in innumerable small apertures. Each morning, I observed those parts of the work on which the mortar was laid immediately over the small openings curiously covered with "lime flowers," varying from the size of a wheaten straw to the thickness of a goose-quill, and standing quite erect: they were all tubular, and the thickness of the material of which they were composed, I found generally to be not more than that of an egg-shell, and it appeared to me to be principally carbonate of lime, but was not smooth as the shell: on the contrary, it was coarse and rough. The height or length varied with the time allowed for their formation: sometimes on coming to the works on a Monday morning, they having been allowed to grow undisturbed on the previous day, they were more than *fifteen inches long*.

If we suppose minute portions of water percolating through the mortar, we may readily understand that they will become impregnated with lime, which will be disengaged when the water is freed from the pressure, and in consequence of the laws of chymical affinity or attraction, aided by a curious mechanical effect, will be precipitated from the solution in parallel layers, which of course will increase in height according as the solution advances.

Any person who has observed water rising through a leakage, must have seen that the water having passed up is forced to progress with a circular motion, carrying small substances, which may be mingled with it in a corresponding manner: if these materials be small pieces of wood, the motion is most discernible. A small leak will exhibit, though in a less degree, all that I have described; and if the water be saturated with a substance possessing such chymical affinity as will induce those particles to attract and cohere, a long stalk, such as that belonging to the "lime flower," must be the result.

I have not observed a head or flower form on the stalk, but can readily account for the occurrence of such by supposing the stem to have grown to the height of the pressure, and in consequence of its diminution to take the oval form described in your journal.

James Sutcliffe.

ARCHITECTURE IN LAMBETH.

The emollient effects of the "great art" upon barbaric manners, are shown so brightly by the Lambeth Burial Board, that this tribute to the efficacy of compo demands attention.

Seated in its plaster shrine at Kennington, brave, new, and glorious, with prodigality of stucco, so ennobling has the contemplation of artistic power proved, that Lambeth, exalted in life by the aid of architecture, appeals to architects for a dignified cemetery too. And mark the generosity and expanse of soul, and the depth of intellectual reverence for her priests which the art-goddess has inspired amongst the chosen who guide the helm of Kennington.

They proclaim their need of architectural service: a gentleman in my own office applies for their instructions, and receives intimation in reply that,—

"The *charge* for the plan is 5s.; and I have left one for you as above.

(Signed) J. B. Clare, Vestry-clerk."

Now really, sir, the Burial Board of Lambeth ought to be perpetuated in the memory of architects as a body of men intellectual, gentlemanly, and generous beyond their day. My poor friend, who was only an architect, was so overcome by the receipt of the *senatus consultum*, that he immediately withdrew his intended suggestions for a sanitary and decent burial-ground—a place which might without insult be called "God's acre."

I would propose that the profession subscribe to erect a brazen memorial commemorative of, and dedicated to, the "wise men of Kennington," to be set up before the awful porch of the new vestry-hall, and to carry down to a remote posterity the individual names of that great burial-board which in the unenlightened nineteenth century stretched out a hand of great and generous help to aid the highest art to her place, and artists to their just respect. I will cheerfully promise 5*l.* at once towards so noble an object. Perhaps the proposition of a Pasquin may be of more use than a mere joke.

May the "Burial Board of Lambeth" flourish until it buries itself beneath accumulated honours and renown; until it has left a Kennington of compo where it found one of brick; and until it has taught architects to rightly know their place, and troop with dollars in their hands to buy one chance in the lottery of a parish vestry's favour. J.

MASTERS AND LABOURERS.

In the Marylebone County Court, last week, an action was brought by a labourer against a master builder, in which a new phase of the relationship of master and man was deliberated on. The labourer claimed four and a half days' wages, and the defence set up, and which was proved, was, that the man, through his insolence to his master, and which led to his summary dismissal, had forfeited all wages due. Evidence was given in support of the latter plea by two masters, who gave it as their opinion that labourers and mechanics were *de jure* hired by the week, although custom ruled that men could be dismissed and leave at a quarter of a day without notice on either side, and that usually wages were paid for any broken period of the week. On the other hand, the "boys" demurred to this, and one patriarch of the "hod" said, a man could be "sacked," and could "sack," at any time in the week, and was entitled to wage, not only for the quarter-day he was sacked in, but for the time he was waiting to be paid;—that, although it was too true the masters kept them out of their day's wages until the end of the week, they were to all intents and purposes day labourers, and not weekly ones.

The Judge, who had taken considerable pains to arrive at the facts, said, he was of opinion, from the evidence of the masters, and from the fact of the men only being paid weekly, that workmen so employed were weekly servants *de jure* if not *de facto*. From the evidence adduced in this instance, the master was clearly justified in dismissing the insolent labourer, and he was of opinion that the plaintiff had forfeited all wages due, as would be the case with any other servant guilty of misconduct. Verdict for defendant accordingly.

Miscellanea.

Railway Matters.—Last week a goods train, while running into Reading station (Great Western), with one of the flaps of a truck hanging loose, came into collision with the iron pillars supporting the roof, and snapped them all, one after the other, "as if they had been so many boiled carrots." The roof, of course, fell, and the station was rendered a mass of ruins.——The goods station of the Edinburgh, Perth, and Dundee Company, at Dundee, was burnt down on Saturday week.——Great expense and trouble have been experienced in crossing a Somerset bog with road, rails, and culvert, all having disappeared in the bog, together with 50,000 cubic yards of rubbish instead of 2,000.——The Taff Vale Company are to erect their plant near their Crockherbtown station.——The first sod of the European and North American line, to connect St. John's, New Brunswick, with the whole of the railway systems of Canada and the United States, was turned on 15th ult. at St. John's, by Sir Edmund Head, the Lieutenant-Governor. Mr. W. Jackson and Mr. E. L. Betts were present.

An Unfortunate Contractor for Public Buildings.—At the Court of Bankruptcy, London, on the 11th inst. before Mr. Commissioner Evans, Joseph Bates, a builder, at Stevenage, and contractor of the new model house for the Windsor Royal Society; the new model houses, New-street, Golden-square; the model lodging-house for the Windsor Royal Society; for the new school, Great Berkhampstead; and a creditor of the Ecclesiastical Commissioners, for repairs and alterations done to Codicote Church, came up and applied for his certificate. The balance-sheet commences on the 1st of January, 1852, and ends on the 15th of June last, and is thus summed up, viz.:—*Debtor.*—To sundry creditors unsecured, 5,541*l.* 1s. 3d.; ditto to be paid in full, 28*l.* 0s. 6d.; ditto holding securities, 1,388*l.* 7s. 6d.; capital, 1st of January, 1852, 1,400*l.* 4s. 11d.; profits on trading and rents received, 193*l.* 17s. 6d.: total, 8,528*l.* 11s. 2d. *Creditor.*—By debtors,—good, 186*l.* 1s.; ditto doubtful, 185*l.* 8s. 9d.; debtors upon contracts, estimated to produce 800*l.*; property realized, after deductions, 542*l.* 17s. 4d.; property in dispute, 675*l.*; property held by creditors, estimated value, 1,515*l.* 15s.; trade charges, 541*l.* 9s. 6d.; personal expenses, 455*l.* 4s 3d.: law charges, 58*l.* 7s. 7d.; interest, 132*l.* 19s. 5d.; losses from various sources, 2,423*l.* 15s. 6d.; work done at the model lodging-house, Golden-square, estimated to realize after deductions, 1,000*l.*; balance, 6*l.* 12s. 10d.: total, 8,523*l.* 11s. 2d. The debtors upon contracts are, Windsor Royal Society, for the model house and model lodging-houses, 671*l.* 16s. 10d.: Ecclesiastical Commissioners, for repairing the chancel of Codicote Church, 46*l.*; Bourne's schools, 50*l.* 17s.; the committee for repairing Codicote Church, 234*l.* 18s.: total, 1,003*l.* 11s. 10d, which is estimated to produce 800*l.* as some of the work done has not been certified by the surveyors. The principal creditors holding security on freehold property belonging to the bankrupt in Stevenage are, the Rev. G. A. Oldie, of Aston, a creditor for 511*l.* 5s. and Miss Venables, of Aston, whose debt is 710*l.* 10s. His Honour inquired if any creditor was in attendance to oppose, and upon receiving an answer in the negative the Court granted the bankrupt an immediate certificate as of the second class.

Locomotive Engine-manufactory at Birkenhead.—The buildings for carrying on the manufacture of locomotive engines, and other machinery, by Messrs. Peto and Co. on the south side of Wallasey Pool, are fast approaching completion. The works will occupy an area of upwards of 22,000 square yards. The range of sheds, workshops, &c. forms a crescent, running from the edge of the pool along the whole length of the canal on the west side. It commences with the boiler-makers' shed, 190 feet long, fitting and erecting shop 281 feet, engine-house 25 feet long, a second boiler-maker's shed 100 feet, smithy 170 feet, brass foundry 40 feet, pattern shop 40 feet, and stores 60 feet, the whole being upwards of 900 feet long, with an uniform depth of 33 feet inside. A branch line of railway from the Birkenhead and Chester Railway is now being laid down, which will extend along the front of the works to the edge of the pool, where a powerful crane will be erected. The machinery manufactured at these works will, in the first instance, be principally locomotive engines, &c. for the Canadian Railway, the contracts for constructing which Messrs. Peto and Co. have recently entered upon. It is anticipated that the works will be in operation in a few weeks. We perceive, from a Scotch paper, that Mr. Peto has taken a fourteen years' lease from Sir William Drummond Stewart, bart. of the old castle and grounds of Murthly, at an annual rent of 800*l.*—*Liverpool Times.*

The Marble Quarries of Carrara.—The following information respecting the marble quarries of Carrara, may not be without interest to your readers. It is translated from *L'Eco d'Italia*, a paper published at New York, in Italian: "Leaving Tuscany behind me," says a correspondent, "I passed into the Duchy of Modena, in which are the celebrated marble quarries of Carrara. I had more than once heard that they had begun to be exhausted, and that the sculptor would soon be deprived of that material which would appear to be almost necessary for the perpetuation of his name: such, I am happy to say, is far from being the case: the famous mountains of Carrara, are as it were, like the coal-fields of Great Britain—inexhaustible. On my arrival at Polvaccio, a celebrated spot, where Sig. D. A. Fabbricotti possesses one of the richest quarries of statuary marble, I was fortunately in time to witness a popular festival—the quarriers having succeeded on that day in detaching several large blocks of immense sizes, one of which measured not less than 800 feet cube, another of 600, and one also of 400 feet cube, besides many of smaller dimensions. The appearance of these blocks just quarried was most beautiful: they equalled the purest alabaster in whiteness, and to give an *éclat* to the operation, there were present several French dignitaries, who had arrived at Carrara for the purpose of selecting a large piece of statuary marble of which to erect a public monument to their living emperor."—T. T.

Gilston House.—This fine old mansion, perhaps the purest specimen of Elizabethan architecture remaining in the county, is about to be pulled down, and as announced by advertisement, the materials are to be sold by Messrs. Pullen and Son, the eminent London auctioneers. The hall was built by Henry Chauncey some few years subsequent to 1547, but the manor of Gilston or Gildeston can be traced to the time of Henry III. when it was held by Robert de Roos, whose son Robert became a Knight Templar, went to Jerusalem, returned, died, and was buried in the Temple Church, in London. There is an effigy of him in Eastwick church, and a cast of it, with copy of inscription, is in the entrance-hall of Gilston House, surrounded by quaint wood carving. The manor afterwards fell into the Giffard and Brockhole families, and then into the Chauncys': and after them to the Packers and the Gores, and the place was in the latter part of the last century the residence of William Plumer, Esq. who represented Hertfordshire from 1784 for nearly forty years. Some time after his death, his widow, Mrs. Plumer, was married to Mr. Robert George Ward, the celebrated author of "Tremaine," who thence assumed the name of *Plumer Ward*. His son, Henry George Ward, was M.P. for St. Alban's, and is now Lord High Commissioner of the Ionian Islands. Some four years ago, the entire estate passed into the hands of Mr. Hodgson, a London merchant, who has recently erected a magnificent new house in the park, and who is also erecting new farm buildings on the estate, on a most liberal and extensive scale. On Mr. Hodgson's [illegible] he found that the venerable old pile had suffered so much from neglect, that a thorough reparation would be a work of very great, and indeed indefinite expense. He has, therefore, reluctantly decided on pulling it down; and Messrs. Pullen and Son, before the stroke of whose relentless hammer so many London buildings (including the Fleet Prison) have fall[illegible] personally, and literally to knock down Gilston Hall on the 27th inst. Meanwhile, we advise all parties and lovers of good architecture to take a last look at the fine old place, with its handsomented gables, its richly-stained windows, its escutcheons blazonments, busts, and sculptured work. There is much to see and admire, and the sale will bring together a numerous gathering of [illegible] *Herts Guardian*.

Stop-Going Signals.—Some years since we suggested for consideration of [illegible] giving [illegible] also that [illegible] desirable [illegible] purpose [illegible] whatever [illegible] was remarked, a-would show within ten minutes [illegible] hour, [illegible] it was since a [illegible] had passed the spot, specially [illegible] things could be easily invented [illegible] exceedingly useful, and even were they occasionally to fail [illegible] property, the public could, on these particular occasions, be no worse off than they now are without any warning signal at all. Various attempts have been made to realise this idea, but [illegible] based on it have not hitherto met with much consideration by railway directors, who clearly enough see that they would lead to additional expense, and pretend to regard them simply as designed to be *a substitute* for signal-men, and as such objectionable,—rather a disingenuous way of getting rid of a little necessary outlay. We take the opportunity of recurring to these endeavours at present afforded us by a letter in the *Examiner* on the subject, by a gentleman named Blackburn, to which our attention has been drawn. We would wish to warn him against any proposal to *substitute* "the infallibility of mechanism," for "the fallibility of signal-men," for that will infallibly afford railway directors an excuse for pooh-poohing and smothering his inventions altogether. He ought rather to insist on them as a cheap *addition* to the signal system, affording the public, as we have before said, something like a cheap and permanent substitute for that series of signal-men along a whole line of railway, by whom the safety of the progresses of her Majesty is most properly insured, but whom His Majesty the Public would be very well content to have permanently substituted by "the infallibility of mechanism."

Wanted! Museums.—On the whole, there is not a single museum throughout the country to which we could point as a model of a good school for the people. Gardens to teach botany and glad the eye are equally wanted. Good wages are now given to the worker: he is above the want of physical comforts—let us in time refine his thoughts and elevate his amusements. When God planted this world he made it a museum full of beauty as of use. The man who has learned even instinctively to feel the loveliness of a landscape, will appreciate those curious beauties which likewise appeal to the eye from the cases and stands of a museum. Once win a popular liking for museums, and the people will come into them on wet evenings as naturally as they crowd the green lanes on a fine Sunday. Like those commons which adorn the face of England more than its widest parks—for they show the living respect for olden right of the poor, while the parks tell but of human pride—let the museums become, not the haunts of a few silent students, but the ready rendezvous of humble people. Let the homely wonder of the worker be awakened there, and the joyous exclamations of children at each new marvel be an audible catalogue of its contents. And if it be at first a meeting-place for idlers or a resting-place for women with children in their arms, let us be patient. It is good for them to be there: and even if lovers' whispers are heard in the mediæval court, the precincts will not be profaned. By natural degrees men advance from humanity to learning, and the man of feeling becomes the man of thought.—*The Leader*.

New Cemetery for London. Mr. J. Simon, the Officer of Health, has addressed an introductory report to the Improvement Committee of the City Commissioners of Sewers, on extramural interments, going fully into the whole subject. He fixes on a [illegible] acres as sufficient for the dead of the City [illegible] annually for twenty years. With respect to site, he suggests that it should be easy of access, otherwise the expenses would be an intolerable burden to the poor, and proposes that one payment should cover all cost of conveyance by railway and burial; the responsibilities of the ordinary undertaker to end at the London terminus of the railway; public hearses to be at the service of the indigent. On ornamentation, Mr. Simon says,—"Fifty-four acres of land and foot-stones, or the same extent of bare mounds, might vulgarise even the aspect of death. By the judicious introduction of trees and turf and shrubs, of bends and undulations, you would probably seek to interrupt the long perspective of so many tombs, and by these artificial resources of planning and planting, to enhance the native solemnity of the spot. Amid such ornamental portions of your ground might be scattered irregularly the various sites of exceptional monument—family graves, personal graves in perpetuity, long treasured graves, and the like; and the interposition of these large portions of comparatively unoccupied soil, with much appropriate vegetation as could conveniently be introduced, might not only allow much tasteful decoration of the ground, but would likewise conduce to the healthful accomplishment of those purposes for which the cemetery is established."

The Carpenters.—The delegates of this trade, meeting at the Carpenters' Progressive-hall, Ryder's-court, Leicester-square, have come to a determination to commence a vigorous agitation to do away with the systematic custom of working overtime as now practised in the trade. The custom is alleged to have the effect of "keeping numbers of journeymen who would otherwise have at least partial employment entirely out of work, entailing great misery on them and their families." It is the desire of the great body of journeymen carpenters and joiners, therefore, that in all shops where work is required to be expedited extra hands should be put on, and that in no case should overtime be worked when unemployed hands are ready and willing to come in. The men have addressed the masters on the subject, and a discussion thereon was to take place at Exeter-hall, on Thursday, the 20th.

River Nene Improvements.—The works designed by Mr. Rendel, for the improvement of the navigation of the Nene, at Wisbech, and for the drainage of the valley up to Peterborough, were let, at the meeting of the Commissioners, on Friday last, to Mr. J. T. Leather, the contractor for Portland breakwater. We understand these works will be vigorously pushed forward, the contract time for their completion being about four years.

Enamelled Fountains in the Sultan's Palace.—We have been asked to mention that the enamelled slate fountain in the Sultan of Turkey's new palace on the Bosphorus, described by us recently as being "exquisitely painted in flowers," was manufactured by Mr. Magnus, of the Pimlico Slate-works. We gladly do so, because to Mr. Magnus is certainly due the credit of having brought this branch of manufacture to its present state of excellence. Many of our readers will remember his works in the Great Exhibition of '51; and should they visit his show-rooms, will find that since then he has not stood still.

New Motive Power.—Dr. Carosio, a Piedmontese, according to *La Presse*, has invented an electro-magnetic apparatus, called the hydrodynamic pile, which, he says, will create a new motive power, and effect a revolution in the production of light and heat. The apparatus is based on the theory of electro-chemical equivalents, and on what is called Faraday's law, that the electric current is equal to the chemical action, and that, consequently, the electricity which serves to decompose water into oxygen and hydrogen gas, is equal to that resulting from the combination of the two gases in forming water.

The Iron Trade.—At the quarterly meetings the resolution not to attempt any rise in price was confirmed. The trade is now in a much better state than while the higher prices ruled. Complaints still prevail of a short supply of coal, and of obstruction to the iron trade in consequence. The attempt of colliers to raise their wages is being resisted.

The Value of Dust.—The *Lambeth Gazette* says,—"Dust O-o-o-y-e! Like most other things, the parish dust has at last risen in price. Last year, the Lighting Board, under the Lambeth Improvement Act, received 325*l*. for the dust. The same contractor, Mr. Hearn, offered 1,300*l*. for it this year, but was outbidden by Mr. Robt. Drummond, the City contractor, who closed for 1,600*l*. and paid the first instalment, 400*l*. the same evening: indeed, one party offered the enormous sum of 2,300*l*. This looks very much like *gold*-dust." The following is a list of the tenders for the dust of the hamlet of Mile-end Old Town, in the parish of Stepney:—

Smith	£1,520
Plowman	1 500
Snell	1,365
Lighton	1,225
Peacock	1 005
Hastie	1,000
Franklin	950
Pound	836
Tomkins	810
Flowers	800
Wood	800
Milton	750
Sumott	720
Dodd	700
Abbott	690
Parsons	550

The tender of Mr. Smith, of Lambeth, was accepted. We are told that the present contractor, Mr. Robert Drummond, only gave 219*l*. for the same at last year's letting. This is certainly not "coming down with the dust."

TENDERS

For building the Crescent Hotel, at [illegible]. Mr. John Fetch, architect. Quantities not supplied.

Geo. Vasey, jun. (Whitby)	£6,570 0 0
John Stamford (Filey)	6,520 0 0
Hutchinson and Musgrave (Hull)	6,400 0 0

For building Cemetery Chapel at Hanwell, for the parish of Kensington. Mr. Allom, architect.

Cowland	£1,610 0 0
Carter and Ellis	1,443 0 0
Higgs and Cunningford	1,363 0 0

For the erection of a pair of semi-detached Villas on the Highbury-hill Estate, for Mr. A. Peebles and Mr. Jno. Hunt. Messrs. Barnett and Birch, architects.

Casse and Church	£3,111 0 0
Glenn	3,090 0 0
Wilhams	2 920 0 0
Roland and Evans	2,890 0 0
Ashton	2,648 0 0

The Builder.

SATURDAY, OCTOBER 29, 1853.

HIGH-STREET, Southwark—High-street in the Borough, as the Loudoners call it—presents a busy scene on a Saturday night—probably every night,—but it was Saturday night when we last saw it. A countless throng streams along the pavement, omnibuses and carts fill the wide roadway, and the shops are blazing with light. Lightest of all these and most numerous are the linen-drapers' and the grocers', before which the crowd oftenest breaks: at one of the latter it stands still, so that those who would pass on must go into the road. It stands still that it may read the "poetry" in the window, wherein the generous proprietor, most anxious to serve his fellow creatures, actually says,—

"However wonderful, however strange,
We take old coin and give new in exchange—
That is, if you will buy our coffee, so good,
Which has long been the best in the neighbourhood."

An ingenious offer of—nothing, grandiloquently. Where all the people are going, and how they all live, are subjects for speculation; but there they are, and, as we just now said, it is a bright and busy scene.

Here and there women and children are sitting at what would seem to be extra doors to some of the houses, but if you penetrate the darkness you will find these are the mouths of courts to which they have come to see the world, and get some fresher air, and you begin to have an idea of what may be behind all the brightness and bustle. Nor in walking here can you quite confine your thoughts to the Present: you remember, as you pass one house, that Chaucer wrote—

"Befell that in that season, on a day,
In Southwarke, at the *Tabard*, as I lay,
Readie to wander on my Pilgrimage
To Canterburie with devout courage,"—

Came there the "nine-and-twentie in a compaine," whose persons, minds, and adventures he has placed so vividly and enduringly before us, that we have a much better knowledge of them than we have of the majority of our own living acquaintances.

Southwark (Suthgeweorke, as it was called as early as 1023), is sprinkled with interesting associations, recalled here and there even by the names of the streets. In early times it had a bad character: in 1327, when it had come into the hands of the Crown by some means, the citizens of London showed King Edward III. that felons and thieves, privily departing from the City into Southwark, where they could not be attached by the officers of the City, were openly received and harboured there; and the King, in accordance with their prayer, granted the town of Southwark to the Corporation of London for ever. This, the old town, however, was but a small portion of what we know as the Borough, and is what is now called the Guildable Manor, extending from St. Mary Overy's Dock westward, to Hay's-lane, Tooley-street, by the side of Hay's Wharf eastward, running west along Tooley-street a certain distance, then going south to the High-street as far as the Town-hall, and at the back of the Town-hall to Counter-street, and thence to St. Mary Overy's Dock. The other Manors, viz. the King's Manor and the Great Liberty Manor, were not part of the Borough until they were purchased by the Corporation of London from King Edward VI.

The turning at the south end of High-street, opposite St. George's Church, is Mint-street.*

Here stood Suffolk-place, a noble mansion, erected by Charles Brandon, Duke of Suffolk. A view of it is given in a drawing by Anthony Van Den Wyngrerde, made about 1546, and given in Mr. Brayley's excellent "History of Surrey." The duke gave this house to Henry VIII. who was his brother-in-law, in exchange for a palace in St. Martin's-in-the-Fields, and in it the king established a Mint for coinage. We may say, by the way, that there was a mint in Southwark in earlier times, but this was without doubt in the old town, the Guildable Manor.*

After vicissitudes, Suffolk-place, or "the Mint," was sold: a great part of it was pulled down, and on its site many small cottages were built, as Stowe says, "to the increasing of beggars in the Borough." The district became the resort of lawless persons, the privilege of exemption from legal process being claimed for it: it was an Alsatia, a sanctuary for evil: nor was any proper control obtained there until 1723. Here died Nahum Tate, once poet laureate; and Pope constantly refers to the place as a residence of poor poets in his writings. *Mat o' the Mint*, it will be remembered, is a character in the "Beggars' Opera."

But we must get back from the past to what more immediately concerns us; so let us walk up this Mint-street out of the busy thoroughfare described at starting. Its evil character has not departed from it. With a gin-shop at the High-street end, and St. George's Workhouse at the other, it has on either side of it congeries of filthy courts unfit for habitation. The houses are tumbling down, the approaches in a miserable condition. Let us take one of the courts on the south side of it—Wallis's-alley, where the houses (of wood) are in the most distressing state of dilapidation: the ceilings have fallen, the floors are full of holes, and the windows glassless. "I have but two panes," said a poor old woman, living in the upper part of one of them, "in my two rooms." In this house, for which the landlord receives 2s. per week for the front room on the ground floor; 1s. 6d. for the back room; 1s. 6d. for the front room above; and 1s. 3d. for two small back rooms on that floor,—equal to 16*l.* 5s. per annum, there are fifteen persons living, and we may consider that there is at least the same number in each of the adjoining three tenements. For the "convenience" of this body of people there is a hole in the rotting back yard, but partly covered by two or three planks and a dilapidated seat: there is no door, no enclosure, other than a few boards, 3 or 4 feet high from the ground! The decomposing contents of the open cesspool beneath contaminate the air around, and decency is out of the question.

We can scarcely restrain ourselves to speak calmly on such abominations.

On Monday last two men opened a cesspool in Pelham-street, Spitalfields, and, becoming suddenly exposed to its foul gas, both died. In the case of those who die more slowly, the cause is not recognised.

To the blind persistence in the answer to inquirers, given by the occupants of such places as the Mint, that they enjoy very good health, and that their place is very wholesome, we have again and again referred; but it cannot be too often spoken of for the guidance of those engaged in sanitary investigations. In the immediate neighbourhood of the court just now mentioned, we asked two women as to their health, and received the usual answer. Will it be believed that, on further questioning, we found the first had had seven children, but that only one was alive, and that the second had been the mother of thirteen, *and that the whole were dead?* This is no invention: we assert it solemnly as a dreadful fact.

In Wallis's-alley there is a tap at one end, where the water runs for about a quarter of an hour each morning, and the inhabitants have to catch what they can. On Sundays they have none. The approach is unpaved; the general condition a disgrace to the locality. Visiting the neighbourhood again, in the daylight, we found in the courts adjoining "conveniences" without doors, and rotting dung-heaps on all sides. In Mitre-court, the general dust-bin had not been emptied for more than three weeks, according to the statement of the inhabitants. Here the water does not run until night, sometimes as late as eleven o'clock: "When we are forced," said a woman, "to wait for one another, it runs so slowly, and some of us have nothing to store it in when it does come." "On Sundays," said another, "I and my children are miserably off: it is no use trying to be clean." In South Sea-court, running into Southwark-bridge-road, the refuse lies rotting on the unpaved road. Though boasting such names as King-street, Queen-street, Duke-street, the whole district has an aspect of poverty and misery, and we were not surprised, though a little startled at the moment, to find a sufferer from cholera in one of the rooms we entered.

As the poverty and distress, so would seem to be the number of children. In one of the courts, on entering, we counted thirty-seven children at play: merry little things, as yet unsaddened or debased; pure little souls, ready to take any impress!

A few years ago some influential inhabitants of the Borough sought to improve this neighbourhood by forming a new street from Blackman-street, where it joins High-street, to Southwark-bridge-road, and farther, and an Act of Parliament for it was obtained. Funds, however, could not be obtained; the scheme was abandoned, and the place remains in the sad condition of which we have given but a faint notion. Inquiries are now being made, we understand, by a committee of the inhabitants of the parish with a view to some ameliorations. A better supply of water they may at all events enforce; refuse matter may be removed, and the drainage improved. Simply paving the roadways would lengthen life, lessen crime, and save money. According to one member of the committee, the great obstacle to all their endeavours is the Board of Sewers. "It is very difficult to get them to do anything; and what they attempt generally makes things worse than they were before." * * * * *

If the thousands who are still streaming past the blazing shops in the High-street were made to understand and feel thoroughly the loss produced *to them themselves* in money, health, safety, and life, by the close, unpaved, ill-drained, vitiated, and vitiating dens behind, we should soon have matters put in train to bring about a better state of things in the "Borough Mint."

* St. George's Church was designed by John Price, architect. The first stone was laid on the 23rd of April, 1734. In the old church here the arithmetician Cocker, "according to" whom people so often speak, was buried.

* Mr. G. R. Corner, who has well investigated the antiquities of the Borough, thinks that the ancient Mint was most likely at the place commonly described as The Prior of Lewes's Hostelry, but which he considers was the house of a fraternity, brotherhood, or guild of Jesus; the guildhall, probably, of the ancient town of Southwark. It came into the hands of the parish of St. Olave by grant from the Brethren of Jesus, with licence from King Henry VIII confirmed by Edward VI. and became the Vestry-hall of the parish.

SCRATCHES ON THE ROAD.

BERLIN, POTSDAM, AND WIND-UP.*

THE road from Dresden passes over a dreary-looking moor: one uninteresting level meets the eye the whole of the distance, and the city of Berlin partakes of the character of the country that surrounds it. The consequence is, that there is great difficulty in draining it; and a stranger is made acquainted of his arrival in a continental city by those peculiarities which Coleridge has immortalized in his satire on Cologne, and which every traveller must too well remember to render it necessary to particularize. The cholera had been stalking forth with its fearful retribution for this, but there was no apparent effect produced in the minds of the inhabitants to adopt such a change in their

* See pp. 570, 592, 616, 625, and 638.

habits and arrangements as to prevent a recurrence of the sad scourge.

When Berlin was originally planned by Frederick the Great, he determined to have a large city, and the streets were made exceedingly wide to fill up the space allotted. This must have had a somewhat desolate appearance at first, but now the population has so much increased, and its trade and manufactures have so developed, there is enough of life and activity to constitute a crowd without the houses or the people appearing to jostle each other. The original arrangement has been most beneficial to the public buildings, all of which are seen to great advantage from the broad and open sites on which they are placed.

In proceeding to some of these, the first thing that meets my view is the Unter den Linden—a main artery of Berlin, extending from the Brandenberg gate to the palace, a distance of a mile. The centre is planted with lime-trees, under which is a broad path forming a sheltered promenade, and on each side of this is a roadway of considerable breadth. Proceeding along this, the first object that attracts your attention is the monument of Frederick the Great, consisting of an equestrian statue in bronze on a pedestal 25 feet high, the sides of which are adorned with bas-reliefs emblematic of that hero's life. Beneath these are inscribed the names of the distinguished men of his age; so that it serves at the same time to glorify the great king, and to keep in remembrance those whom he delighted to honour.* Beyond this is the statue of Blucher—a name familiar to every Englishman. It is the production of Rauch, and is very characteristic. The drawn sword and the action portrayed mark very strongly the energy and fervour of him who was called in Germany "Marshal Forwards," and by Napoleon "*Le vieux Diable.*"

It is marvellous to observe the contrast between the manner in which the memory of a great man on the continent is treated, and the paltry honours we offer to the good, the brave, and the exalted of our land. There they bring poetry to their aid, and show the man not only as he lived, but stamp him with such an impress of the hero, that even those who do not know his story, must be struck with the contemplation of that which unmistakeably delineates all that is great and noble, or all that is generous and beneficent.

When I think of some of the pigtails and peculiarities that adorn our metropolis, I am led to think that our rigid observance of the 5th of November has had such an influence on our tastes, and so great is our gratitude "for the happy deliverance from the most traiterous and bloody-intended massacre by gunpowder," that the juvenile representations of the arch-conspirator who designed "Old England's overthrow," must be taken as models of those things which we place on pedestals, and call statues.

Proceeding onward, we approach the bridge, which is decorated with eight statues, representing the life of a warrior. Up to the present period there were only the plaster casts, but now they are completed, and the effect is very beautiful. They are vigorously executed in Carrara marble, and are placed on a pedestal of that of Silesia, in the front of which is a medallion of the former, containing a *bassi-rilievo* of an eagle, variously displayed, forming a pleasing contrast to the darker colour on which it is placed. The base is formed of polished granite.

Crossing the bridge, we arrive at the palace, in which is the museum, containing many objects to interest the antiquary, the historian, and the wonder-seeker. The first will find works of art by Durer, Vischer, Michelangelo, enamels of Limoges, cups and vases of various periods, majolica, and different wares; the second will find relics of remarkable men, who have borne an important part in the world's turmoil. The Great Frederick, modelled in wax, wearing the uniform he had on at the time of his death: in front of him are his sceptre and his flute, both powerless now to command or amuse; and the last, among much that is curious, will find a tree, in the centre of which are the horns of a stag, round which it has grown, and two cannon balls that met in the air at the siege of Magdeburg: each has one side flattened, and I suppose they were preserved by those who witnessed the occurrence. The palace contains many apartments, most of which are decorated with gold and crimson, the former in excess; but the White Hall, which has been recently completed, is most charming for the elegance of its proportions and the lightness of its decorations. Adjoining this is a new circular chapel, much enriched with marbles and frescoes; but it is little adapted for the purpose intended, as the variety of colouring distracts the attention, and the entire form and appearance produce neither solemnity nor contemplation.

Berlin is worth visiting even for one object alone, and that is the new Museum which is in the course of construction, and from the parts that are complete an idea can be formed of what it will be when perfect, and what a monument will exist to the honour of the artists who designed and the nation that raised it. The apartment that you now first enter is that devoted to the casts of distinguished statues, and they find a resting-place worthy of their fame. The colour of the wall is green, but the upper part is covered, in fresco, with views of Greece, Rome, and Pompeii, and the roof is supported by columns of light brown Bohemian marble, fluted with gold, which gives them great elegance. Each hall has its appropriate decoration for the treasures that it contains. The Egyptian antiquities are placed in an apartment which you enter through an exact model of a temple at Philæ. Great outcry has been made against the despoilers, who have brought away so much from Egypt; but upon this I will not enter, simply saying that there are the memorials and I must acknowledge the taste and discrimination with which they are arranged, affording not only valuable historical illustration to the student, but enjoyment to the mere pleasure-seeker, and thereby, perhaps, inducing the latter to tread in the path of the former. The entrance when complete will be by a beautiful hall; and leading to the upper rooms is a noble staircase, the walls of which will be decorated with allegorical pictures, painted in the new mode called "Wasser-glass," which looks brighter, but would be taken by a casual observer for fresco. Besides these, there will be a large collection of casts of statues, friezes, and rilievi, famous for their beauty and valuable as studies.

The picture-gallery does not contain such specimens as are to be met with at Dresden and Vienna, and though the authenticity of some may be questioned, the arrangement is worthy of all praise. This is due to Herr Waagen, who, you will recollect, attended the meeting of the Archæological Institute at Bristol. He has classified them chronologically, but at the same time according to the schools; so that the comparison of periods and masters is materially aided, and the general observer has always before him an illustrated history of art. The catalogue is perfect, and it would be most desirable to have a translation of the preliminary remarks, bearing as they do the name of so eminent and distinguished a critic as Herr Waagen, as they would be found quite as serviceable and instructive for other collections.

The poetical feeling that is to be noted in so many of the early painters, is here illustrated by No. 217, "A Virgin and Child," by Bernardino Luini. The child has an apple in his hand, which he is presenting to the mother, whose thoughtful and contemplative look fully expresses her comprehension of what is meant to be conveyed: "The seed of the woman shall bruise the serpent's head."

The arrangement of the gems deserves equal praise to that bestowed on the picture-gallery. Instead of being placed indiscriminately in cases, as at Vienna, those which are historical are arranged chronologically; the others according to the objects they represent, each class being distinct, and by the side of the intaglios are impressions taken with great delicacy. The advantage of this arrangement must be obvious, for you not only have a facility of reference, but you likewise have, in juxtaposition, a comparison of the treatment of the same subject by different artists.

Every capital has its Windsor, and what this is to London, Potsdam is to Berlin, and illustrates in about the same degree the architectural taste of a former monarch. The new palace was erected by Frederick, not out of bravado, at the end of the Seven Years' War, as stated by Murray, but, I am assured, to give employment to the people, who were in great distress at that period. No accounts are preserved of its cost, for it is said he paid all the bills with his own hands, and subsequently destroyed the receipts. Perhaps the archives of other nations can inform us whence the money came. Under all circumstances, perhaps, it is better that nothing should be said about this building, leaving it a moot point how far benevolence is to disarm criticism.

The Sans Souci, with its associations, is exceedingly interesting, whether we contemplate the proofs of the eccentricity of Frederick, the wit of Voltaire, or the principle of the maintenance of right suggested by the Windmill.

In a temple, close to the new palace, is Rauch's statue of Louisa, the late queen; a representation of a smaller size of the recumbent figure on her monument at Charlottenberg, the Richmond of Berlin. It represents her asleep, and the expression of the face is exquisitely beautiful, with an appearance of breathing, but so slightly, as just to indicate the relationship between—

"Death and his brother Sleep."

The hands are graceful and expressive, but here my admiration must stop, as the drapery is formal, and composed of fine plaits, which show a greater illustration of the laundress than the sculptor. The monument strongly reminded me of that touching and beautiful one by Chantrey to the memory of Lady W. Stanhope, which is in Chevening Church, Kent.

One great object of attraction with the stream of visitors is the Prince of Prussia's new Gothic palace, in the park of Babertsberg. It is from the design of Schinkel, and is somewhat of the pasteboard character. It is built of white bricks with stone quoins and dressings, and the oriels partly stuccoed and partly of the same material. A lightness and good effect one produced by the use of plate-glass, upon which the stanchions, mullions, and cusps, which are of oak, show to great advantage. The entrance is small and mean, and the interior indicates that it is designed more for a comfortable retirement than a model of feudal splendour. The apartments are very small, and filled with modern furniture, with the exception of the dining-room, in which the character of antiquity is preserved. The ball-room is a copy of some chapter-house of the thirteenth century. It is not to be compared with Ravensworth Castle, the hall of which would contain a great portion of it.

The most charming thing at Potsdam is a villa built by the present king in the style of a dwelling at Pompeii. It is arranged with the greatest taste, and it contains, besides some genuine paintings from that place, numerous antiquities of great beauty. Among the engravings are numerous copies of Raphael, by "that noble artist Monsieur Dorigny," as Addison called him, and who spoke of the "Transfiguration" as "a work which it is impossible for a man of sense to behold without being warmed with the noblest sentiments that can be inspired by love, admiration, compassion, contempt of this world, and expectation of a better." The villa is the best imitation I have seen, and its comforts as a residence have not been sacrificed to its artistic character: it is therefore not a useless toy, as many such things frequently are, but a classical retreat worthy of a monarch's taste, and in which he must find a dignified repose. After viewing these things, a stroll in the park follows, and then the return to Berlin.

I was much disappointed with the Brandenberg gate. It is formed of ten Doric columns, five on each side, supporting a pediment, on which is a car of victory. Its character as a triumphal arch is much destroyed by brick and plaster portions being thrown up between the columns for the purpose of supporting the ugly doors.

There are two modern Gothic churches illustrative of the use of moulded bricks. This is a subject you have frequently advocated, and these specimens fully justify your views of what

* A view and detailed account of this monument will be found in our 9th volume, pp. 689, 691.—Ed.

improved appearances might be given to our buildings by the adoption of these materials.

The Prince of Prussia's palace, which is close by the statue of Frederick, contains little beyond an evidence of the idea he has imbibed of English comfort, and of his patronage of modern art, the walls exhibiting numerous examples of his taste, and the genius of those he so graciously encourages. In the ball-room there is a most remarkable echo, which replies twenty-four times as distinctly as that at Thornbury Castle, near Bristol; but this effect ceases when there are forty persons present. Now whether the echo is puzzled by the number of voices or whether there is any peculiar atmospheric effect produced, and the sound is not thereby conducted, I cannot say, but I think it is a subject worthy of consideration by those intrusted with the construction of large rooms, and who must be desirous of avoiding such a peculiarity. It may be as well to mention that the ceiling is domed with a circular opening and a skylight.

Circumstances caused me to hurry from this spot towards home. With the disappointment that usually seems to attend the promises, whether made by foreigners or ourselves, about quick passages, I arrived, cold and weary, in the middle of the night, at Dover. In passing the custom-house there I was most politely treated by the officer, who loudly lamented the frequency with which railways and steam-packets broke faith, and called upon him to perform his duties at such unseasonable hours. All I say is, do not be tempted with "a thorough passage" either on the score of time or economy, if you value comfort, and do not wish to waste the former.

The next morning I started on a journey, for the first time for two months, without making that important fact known to the police and procuring their permission; and as the train rushed through Kent, I contemplated the beauty of its scenery with undiminished pleasure; and whatever delight or instruction I may have derived abroad, I felt a satisfaction that home had lost none of its charms.

I have thus fulfilled my promise of giving you a slight notice of some of the things that have struck me on the road: many others will dwell in my memory; and I feel that the two months thus spent will prove an endless source of enjoyment from the associations they have produced.

In conclusion, permit me to say, that though I have not illustrated, I assure you I have most deeply felt the truth of Sterne's remark:—"What a large volume of adventures," says he, "may be grasped within this little span of life by him who interests his heart in every thing, and who, having eyes to see what time and chance are perpetually hoking out to him as he journeyeth on his way, misses nothing he can fairly lay his hands on."

F. S. A.

THE EFFECT OF WINDS UPON EDIFICES.

ALTHOUGH accidents are very frequent from the force with which winds act upon buildings during heavy gales, but little has been done in the way of investigating these forces. This probably arises from the great difficulty attending any experimental research into the velocity and force of the wind, although both Smeaton and Hutton have recorded independently the results of their experiments upon the subject. There is, however, another method of investigation, namely, by considering the wind as a fluid set in motion, and applying the equations which have been investigated by Challis and other writers on Pneumatics, who have obtained the following simple law:—

When a fluid in motion is resisted by a plane perpendicular to its direction, the resistance is equal to the weight of a column of the fluid whose base is the area of the resisting plane, and whose height is that due to the velocity of the fluid.

Let A = the area of the resisting plane in square feet; v = the velocity of the wind expressed in feet per second; h = the height (in feet) due to v, and found from the equation,

$$v^2 = 64{\cdot}4 \times h.$$

Now the weight of one cubic foot of air is found to be equal to $\frac{1}{13}$ of a pound avoirdupois; we can therefore express the above law in an algebraical formula, as follows:—

$$\text{Resistance} = \frac{1}{13} \times \frac{v^2}{64{\cdot}4} \text{ A, in lbs. av.}$$

Let R = the resistance on one square foot of surface,

$$\text{then R} = \frac{v^2}{837} \text{ very nearly;}$$

and the pressure on the plane = A × R.

In order to find the force tending to overturn a wall against which the wind is blowing, we must consider the whole force to act at the centre of gravity of the wall, and take the moment of the force about its base; or, we have to multiply the preceding pressure by half the height of the wall. Let a be the height of the wall, and l its length: therefore the force tending to overturn the wall =

$$\text{R} \times \text{A} \times \frac{a}{2} = \text{R} \propto l \times \frac{a^2}{2}.$$

Let us take as an example to which we can apply this formula, one of the lofty chimney-stacks which rise some 20 feet above the roofs of many London houses, and let the width be 10 feet. Now in a high wind the velocity is about 45 miles per hour, or 66 feet per second; therefore $\text{R} = \frac{(66)^2}{837}$, or the resistance on one square foot, is 5·2 lbs.; therefore the force tending to overturn the wall =

$$= 5{\cdot}2 \times 10 \frac{(20)^2}{2} = 10{,}400 \text{ lbs.}$$

This result shows us why chimney-stacks, and other unsupported walls, such as the gable-end of some old ruin, are frequently blown down in heavy gales.

The experiments made by Smeaton, and afterwards by Dr. Hutton, would lead us to think that the formula just obtained gives too small a pressure, as Smeaton found that a velocity of 35 miles per hour gave a pressure of 6 lbs. on the square foot; and Hutton found that a velocity of 36 miles per hour gave a pressure of 5·2 lbs. on the square foot; and taking an average of their results, we find that, according to Smeaton, we shall have $\text{R} = \frac{v^2}{440}$, and, according to Dr. Hutton, we shall have $\text{R} = \frac{v^2}{530}$. This discrepancy between the theory and experiment seems to arise from their taking too low a rate of velocity, as may be seen from experiments on the velocity of the wind made by aeronauts, who frequently travel 70 or 80 miles per hour; whereas Smeaton states that the velocity of high winds is about 30 miles per hour.

E. W. TARN, M.A.

A BOUQUET OF OPEN SEWERS, GATHERED AT RANDOM.

RECENT reports on the epidemic, now unhappily so prevalent, are all unanimous in ascribing the tendency of the disorder to the low districts; and several calculations have appeared which graduate the havoc of mortality just in proportion to the elevation of the parish or district. The returns and tables of mortality show, however, that the most elevated places are not exempt, and that Paddington, Kentish-town, St. Pancras, Marylebone, and high central parishes have furnished their contingent to the harvest of death.

It cannot be too strongly impressed on the public mind that good sewerage and cleanly habits offer the best immunities against the visitation of typhus and cholera. No portion of London is lower than Belgravia, but from its extreme cleanliness, with fair sewage and open streets, none has been more exempt: it is in the noisome alley, with dust and varied accumulations, with open cesspools and close air, that the horrid spectre stalks triumphant.

Great efforts have been lately made to improve the sewage, and to remedy the evils of filth deposits in the low quarters of town; but nothing has been done to abate the nuisance of open drains and sewers, which may be found in nearly all the suburban regions of the metropolis. On Haverstock-hill, now a populous place, an open ditch, bordering England's-lane, remains as it has been for years, collecting the sewage from Hampstead downwards, and emitting in summer a pestiferous reek, which drives the wayfarer towards the railway with quickened pace and loathing nostrils, away from a scene otherwise pleasing. In Kentish-town, another high district, there are cess ditches quite as offensive. In the heart of Chelsea, through the nursery near Hans-place, an open sewer, teeming with exuviæ, remains as it was before Sloane-square was built, but infinitely more fetid—"it smells to heaven." From Kensington-gate, again, a brick-bottomed dyke conveys the sullage of 1,000 houses, black and festering in putrescence, sluggishly trickling over a plain with a slight incline, and *alongside a much-frequented public pathway*, nearly to Cromwell-lane, and then across the grounds lately purchased and appropriated by the Commissioners of the National Exhibition! this poison duct is open for at least half a mile; and, as if to make the nuisance more flagrant, there is painted in several places on gateways across it, "Metropolitan Commissioners of Sewers!" This pestiferous dyke and the Effra are the *ilium* and *colon* of West London.

From Lambeth to Kennington, Vauxhall to Wandsworth,—again, from Kennington to Camberwell, to Walworth, to Greenwich, and all through the yet surviving hortulan suburbs, the fields and thoroughfares are *redolent of sewage*.

It may be said, that the great nucleus of population is not affected thereby; but as building societies plot out and cover the vicinal open spaces, all these conduits become more tainted; and even although, as sewers, such ditches may not be permanent, still the expense of a slight half-brick arch could not be much, and the benefit to the general health of the community would be very great. At present the law empowers, under some circumstances, the enforcement of sewage and the stopping up of cesspools; but there are thousands of houses, many of them occupied by affluent people, having charming gardens, &c. which are most noisome and unhealthy from cesspools in the *cellars and gardens*. The landlords will not incur the expense of making sewers, nor can the tenant from year to year hazard the outlay: nothing but the imposition of a penalty can stop this evil source of contagion: 5*l.* to a common informer against every cesspool nuisance (in cases where a public sewer exists within a certain distance), would soon clear the atmosphere; and this penalty should be increased to 20*l.* or even to 50*l.* in cases of obstinacy or resistance.

QUONDAM.

A NEW PRINCIPLE IN NAVAL ARCHITECTURE.

ALTHOUGH to one acquainted with the strength of trussed carpentry the proposition of bracing the timbers of ships may appear manifestly advantageous, yet in practical building, the original system of framing a ship like that of the skeleton of an animal is still maintained as though the substance of the two things were similar. So much have I been convinced of the waste of materials under the present system, that I have registered a patent for bracing the framing of a ship together on a different plan from that hitherto adopted, and saving one-fourth of the cost.

The system is this:—The two sides of the vessel are framed as two immense trussed beams, deep enough to carry the whole weight of the vessel and cargo, and sufficiently stout to resist the blow of waves. These trusses would be constructed in the usual manner, either as lattice-girders or with suspension-bolts and braces, the spaces filled in with uprights: in either case the outside and inside planking of the ship would constitute a very complete longitudinal tie. The floor would be firmly connected with these sides, binding in, or breaking joint, as it is called, and being in the form of an inverted vault, supported by the sides and not broken on the keel, would possess great strength. In the case of a wide vessel, a truss on the keelson from end to end, forming a central support along the hold, would divide the bearing, and be a very strong back-bone. The sides would be firmly supported in their upright position by the decks; and cross-trusses athwartships would

stiffen the whole in a manner to prevent straining and the necessity of recaulking.

Almost the only objection I have met with is, that until Lloyd's committee, and surveyors, who class ships, will recognise the merits of the new system, it will not answer the purpose of builders to adopt it, though the fact mentioned by your correspondent that ships built with crossed planking (a weaker system than the above) have outlived classed vessels, ought to decide the question, if our ships are to be built as strong and cheap as possible.

A. J. Baker.

THE NECESSITY OF ENFORCING SANITARY MEASURES.

We have been favoured with a communication from Mr. Wheeler, of Swindon, complaining of the Nuisance Act as itself a nuisance, and entering at some length into his favourite subject of sanitary reform for Swindon. We must give our readers the benefit of it in the abstract, as our pages at the present moment will not permit of so much devotion to Swindon as would be requisite were we to give the communication *ad longam*.

The *Builder* is thanked for its advocacy of measures for the promotion of health,—a subject, Mr. Wheeler remarks, "which the denizens of palatial grandeur are too apt to think they have no part in but the pecuniary cost;" but "the pages of the *Builder* have brought home to its readers the fact that the innocent and the helpless suffer and die, rather than those who are influential and responsible, and therefore guilty."

As regards the state of Swindon, one of its medical men informs him, that he has had upwards of 300 cases of fever since last January, and this, be it remembered, out of a population of 5,000! No one who knows anything of the causes of fever, therefore, needs to be told that Swindon teems with filth; and well it may, since it has actually no sewerage at all, only surface drainage; and the matter, from its open gutters, in one place collects into a fetid deposit of tons weight in an open space beside the most frequented thoroughfare in the town.

"As a substitute for the comprehensive Public Health Act," proceeds the complainant, "Swindon has, in common with other towns, forced upon it that farcical nullity, the 'Nuisances Removal Act.' The Board of Guardians have issued instructions for a house-to-house inspection. The *application* of the Act is well meant, and the 'Inspector of Nuisances' does his duty, so far as the Act gives him authority; but as the inspector of nuisances and surveyor of highways remarked to me after he had made his inspection, 'the Act is powerless.' . . . . . In some places, the street has been raised above the level of the ground floor; yet people living in houses so situated, have notice to fill up their dumb wells, thus leaving no alternative for sewage, rain-fall, and all else, but to fill the cellars, and perhaps the living-room. . . . . Future generations will thank you for the noble spirit, in which, on account of the toiling masses, you come to the rescue: you are grappling with a hydra-headed foe. The 'influential and responsible' are too generally opposed to progress, and I fear that the pestilence which decimates the poor, must take its tithe of the rich, before 'vested rights' will give way to public good, '*knock often and you will be heard at last.*' . . . . . But rest assured, sir, it is not London alone, or the great towns and cities in general, that have the exclusive title to squalor and filth. . . . . I would have you bear in mind, sir, the remarks respecting Swindon hold good respecting numerous other towns, the inhabitants of which have been taught to believe they live in a very healthy town: possibly 'the wish is father to the thought,' or they have never taken the trouble to examine the public registers, which are the unerring criterion of the sanitary condition of the locality: most probably the wealthy or middle classes have little idea that such infamous habitations for human beings are in existence, as may be found in Swindon and other small towns or villages. One of our churchwardens, a conscientious upright man of business, for four years that I have been advocating the Act, has always opposed me, but his official inspection under the recent order has made him consent to my views. Then, if it is only on examination into the actual state of affairs that men will advocate sanitary measures, Government ought not to leave a thing of such paramount and vital importance to the caprice of public opinion; but, when a competent authority (such as Mr. Lee) decides we do require the Public Health Act, it should be applied '*nolens volens.*'

In folio 39 of Mr. Lee's 'Summary of Experience on Disease,' he says,—'The question naturally arises—Is sanitary reform a thing to be accepted or rejected at will by individuals or even by communities? Is it a subject for a show of hands, when the persons whose lives depend on the decision are mostly either ignorant, misled, or coerced? Can it be left to the ordinary principles of supply and demand? Is there any parallelism between those arrangements that are necessary to existence, and private dealings with the butcher and the baker—although they may be equally necessary?' Yet, sir, as the adoption or rejection of the Public Health Act now stands, the Government will, in consideration of 'vested *rights*,' perpetuate these damning *wrongs* of excessive mortality, though proved to demonstration; and the reason assigned is, that a given proportion of ratepayers (through being snubbed or hoodwinked) prefer to continue in filth and degradation. There would be nothing more un-English in compelling them to abandon typhus than there is in forcing vaccination on the thousands who are weak enough to still prefer innoculation for smallpox.

With one more quotation from Mr. Lee's 'Summary,' &c. folio 64, I will conclude:—

'The poor again are the chief sufferers; but the more wealthy and influential inhabitants do not escape with the same degree of immunity from the financial consequences of sanitary neglect as from preventible disease. The present subject enters into all the relations of life—individual, social, civil, and national, and the amount of taxation everywhere levied for this excessive sickness and death, constitutes in the aggregate the most oppressive burden ever laid upon a people.'"

MEETING OF THE METROPOLITAN CARPENTERS AND JOINERS.

OVERTIME.

On 20th inst. a meeting of the carpenters and joiners of the metropolis was held in Exeter Hall, to consider the so-called evils of overtime, and the means of abolishing it. The great hall was quite full of grave, steady, and respectable looking men, and spoke powerfully for the extent and importance of this branch of metropolitan business.

Mr. Hooper was called to the chair, and explained the object of the meeting to be the distribution of the benefits of labour among the trade as equally as possible without any spirit of hostility either to employer or to workman. The request of 6d. of advance had not been so successful as they had wished, but he trusted there was now a good understanding between employers and employed, and he believed that in carrying out the present object there would not be much difficulty with the former. What they objected to was, continuous systematic overtime, the abolition of which would have the effect of more equitably diffusing labour among the trade. He regarded this as a legitimate mode of raising prices in the labour market. When one man, or a number of men, were overworked, they kept other men out of employment, and he for one thought that he ought to be content with ten hours' labour, in order to allow others to get five or six.

The first resolution, moved by Mr. Ferris, joiner, was to the effect, "that, in order for operatives to become skilled workmen, honest citizens, and good men, it is requisite that they should have some time set apart to them for the development, cultivation, and improvement of their mental faculties; and this meeting feels fully assured that much overtime necessarily incapacitates them for the full attainment of that which is essential duly to qualify them for the discharge of their moral, social, political, and religious duties of life."

An amendment was moved by Mr. Nottage, to the effect—"That while they admitted systematic overtime was prejudicial to the interest and comfort of the working-classes, yet it did not prevail to such an extent as to justify any interference, as a body, on the part of the trade at the present time."

The original resolution, however, was passed, with very few dissentients.

Mr. Grassby then moved,—"That this meeting being impressed with the evils resulting from the system of one portion of operatives being compelled to work overtime whilst a great portion are kept in forced idleness, by which means there is a fictitious surplus in the labour market, and the price of labour is thereby unduly depressed, and many an honest labourer cannot get employment: in order, therefore, to equalise the supply of labour, this meeting strenuously recommends that the practice of systematic or compulsory overtime be for the future abolished, except in cases of emergency, and for which time and a half shall be paid."

This resolution was also almost unanimously carried.

On the motion of Mr. Royston, a resolution, to the effect that in order to make the foregoing resolutions beneficial to the trade, a general plan of organization be adopted, not interfering with any existing local associations, was carried, and the basis of such a plan having been presented by the committee and approved by the meeting, the proceedings terminated with a vote of thanks to the chairman. The meeting throughout was conducted in perfect good order.

The carpenters have since given notice to their employers that it was their intention to discontinue working systematic overtime. In cases of emergency, when contracts required to be completed, or when extra hands could not be obtained, the men would continue to work overtime as heretofore. The daily working time is now fixed at ten hours—wages, 5s. 6d.

PROVINCIAL NEWS.

Erith.—All Saints' Church, Belvidere, was opened last week. The edifice is cruciform, and is built of brick, faced with cut flint, the windows and doors being ornamented with dressings of Caen stone. It consists of nave, chancel, and side aisles. The roof is raised upon pointed arches, and the supports spring from ornamental bosses of carved stone. There is a stained glass window to the east, and the pulpit, reading-desk, and pews are of varnished oak. The building is intended to accommodate 600 persons, one-half free. The site was presented by Sir E. Culling Eardley, Bart. whose property adjoins. The church was built by Messrs. Locke and Nesham.

Brighton.—The foundation-stone of a new Congregational Church in this town was laid by Mr. Rice Hopkins, C.E. on 3rd inst. The site is in Queen's-square, a new locality rising up where for many years nothing but hovels of the lowest description were to be seen. The proposed building will consist of a nave, 73 feet long by 33 feet wide in the clear, with a *double* transept on either side. In the rear will be public and private vestries, with organ-chapel over. On account of the contracted size of the ground, galleries were considered indispensable. They are placed in the transept and at the end, connected by one sitting only, along the sides of the nave. A staircase is provided at each end of the church. The walls are being carried up in flint rubble-work, bonded together by courses of horizontal and vertical brickwork, and the whole faced with Caen stone ashlaring. The end gable will have a rose window, 13 feet 6 inches in diameter, below which will be an arcade with columns, &c. The entrances are placed at the sides. The nave is lighted by three two-light windows on each side, with traceried heads; and the transepts by two rose windows, of same character as the front one. The designs for the building were selected in competition, and were prepared by Messrs. Joseph James and Raffles Brown. The contract has been taken by Mr. John Fabian, of Brighton, at 3,200*l.* The chapel will have accommodation for 1,026 sitters, and is the first of fifty chapels, proposed, we are told, to be built over the country by the "English Congregational Chapel Building Society."

Nantwitch.—A Chester paper makes an appeal

to the county, if not to the country at large, on behalf of the restoration of Nantwich Church. Of the required sum, which is 8,000*l.* according to Mr. Scott's plans, about 2,200*l.* have already been contributed by the inhabitants of Nantwich and its vicinity, but the project will fail unless further aid be granted from some other quarter. "Ever since Cromwell stabled his war-steeds in this as in other churches," the building may be said to have been "laid waste," and it is full of cumbrous galleries and pews, &c. since erected, and which still further disfigure the building.

Dunstall.—St. Mary's Church and School, erected from funds (12,000*l.*) left by the late Mr. Charles Arkwright, are now completed. The buildings were designed by Mr. Clutton, of London, and have been erected under his superintendence by Mr. G. T. Dovey, contractor. Mr. Andrew Pearson acted as clerk of works. The church, which is in the Early Decorated style, consists of nave and chancel, with south aisle, porch, and tower (with spire) at south-west corner of nave. The exterior and interior are carved, the chancel being lined with Derbyshire alabaster. The font and pulpit are Caen stone; the roof and seats of oak. The church is provided with three bells, and an organ by Bishop. The adjoining school and school-house correspond in character with the church.

Alford.—The following tenders for the erection of the Mechanics' Institution buildings have been lodged:—Mr. George Abbott, 432*l.*; Mr. Robert Stell, 496*l.* 18s.; and Messrs. Henry Hibbitt and B. E. Leake, 501*l.* 18s. 6d. Mr. Abbott's tender was accepted. The amount to be expended is so limited that nothing more than a plain building can be expected.

Wycliffe.—The restoration of Wycliffe Church has now been completed; and though the flat roof is retained, the edifice has resumed much of the appearance it must have originally presented. The windows have been restored, and the stained glass reinserted. The walls have been cleansed and repaired, and the floor partially relaid. The mouldering pews have been removed, and benches substituted. The monumental brasses have been reinstated; and such of the other monuments and slabs as could be repaired have been re-erected. The brasses are principally memoirs of the Wycliffe family, and the most ancient was erected about 500 years ago.

Manchester.—The Chetham statue, lately put up in the cathedral here, is now backed by a window of stained glass, by Wailes, the only one of that material in the cathedral. The window has been restored by Mr. J. P. Holden, the architect who has charge of the works now going forward, and has thus been rendered fit to receive the glass. The style of most of the windows is Perpendicular of the latest period, and they chiefly consist of five lights, with heads of pierced tracery. In the window under notice, three of the lights are occupied by figures of Fides (Faith), Spes (Hope), and Caritas (Charity), drawn between the ultra mediæval and modern style, and attired in flowing draperies. Each is symbolised by characteristic accompaniments. The other two lights are occupied by tiers of figures illustrating the words of Christ in rewarding those who have cared for his people upon earth, and under the feet of the three mitres are angels bearing scroll-bands. The highest piercings contain the arms of Humfrey Chetham. The local *Courier* remarks that "had the colours in the canopies over the three principal figures been deeper it would have added to the general effect, the greens appearing to want depth. It darkens the aisle of the church considerably," it adds, "and we are almost afraid that the fine statue below it will not be seen to the best advantage for the larger portion of every day."

Rawtenstall (Bury).—A new Unitarian Chapel has been opened here. The building is said to be in the modern Gothic style from a design by Mr. J. Chattwood, of Bury, architect, and will seat about 550 persons. The estimated cost was 1,500*l.* of which 300*l.* still remain unrealized.

Leeds.—The foundation-stone of St. Stephen's Church was laid on Thursday in last week. The church, the site of which is near Accommodation-road, Burmantofts, will be in the Early Decorated style. It will be 81 feet long, 31 feet broad, and 60 feet high to ridge of roof; sittings, about 600. There will be a bell-turret, and at the west end of the church a marigold window. Mr. Jeremiah Dobson is the architect. The funds raised amount, according to the local *Intelligencer*, to nearly 1,750*l.* There is still, however, a deficiency of 600*l.*

Preston-Patrick.—On Wednesday week the Bishop of Chester attended here, to consecrate the new church and churchyard. The church has been designed and built under the superintendence of Messrs. Sharpe and Paley, of Lancaster. It is of Anglo-Norman style, with square tower and elevated staircase. The cost will be about 1,400*l.* raised by voluntary contributions.

Ceres.—The ruins of Craighall Castle have lately been repaired. By way of strengthening the building, several props have been built by the proprietor. The last addition to the building was made in 1697, and the repairs now completed, will, it is thought, render it endurable for at least another century. Mr. Mitchell, builder, Cupar, conducted the recent repairs.

MEETING AS TO TEMPLE-BAR.

A MEETING of the citizens opposed to the removal of Temple-bar was held on the 21st inst. at Anderton's Hotel, Fleet-street, Sir James Duke in the chair. A very strong feeling in its favour was shown, and the speakers urged, as to the obstruction said to be caused by it, that the roadway would not be *sufficiently* widened by the removal to obtain any advantage. Mr. Freedy, Mr. Newton, Mr. Barnard, Mr. R. B. Seeley, Lord Dudley Stuart, and others, spoke. Mr. Cox, by invitation, gave his reasons for urging the removal of the present Bar, and exhibited some drawings for an iron gateway, which would increase the roadway from 18 feet 7 inches to 26 feet 9 inches.

The following resolutions were passed:—1st. "That this meeting views with repugnance the proposal to remove the ancient landmark and barrier between the cities of London and Westminster; and that it regards the principal reason assigned for such removal as entirely delusive; believing that the mere removal of Temple-bar, without the adoption of any other improvements, would conduce to no desirable end whatever;" and, 2ndly, "That while this meeting would regret to oppose itself to any substantial improvement in the western entrance of the city of London, it must deprecate any plan of mere demolition as productive of no advantage, and as tending rather to disfigure than to improve the appearance of the street. Hence it would ask of the corporation not to consent to any proposal for the destruction of Temple-bar, but rather to seek the counsel of the best judges of street architecture as to how this chief approach to the City may be rendered what it ought to be."

THE ARTERIAL DRAINAGE OF THE METROPOLIS.

PROJECTED WORKS.

FOR the information of our miscellaneous readers, and before speaking of the works in contemplation by the Metropolitan Sewers Commissioners, we may first explain, that besides the house drainage and the common sewerage of so vast a space as that occupied by the metropolis, a third order of ducts is thought to be requisite to the thorough drainage of the whole, and this is what is meant by arterial drainage. The common sewers of London are the receptacle into which its house drainage is disembogued. The arterial drains proposed to be formed will be the receptacle into which its common sewerage will be emptied, and through which, therefore, the whole area of the metropolis will be drained.

From a series of reports, by Mr. J. W. Bazalgette, the engineer to the Metropolitan Sewers Commission, and by Sir William Cubitt and Mr. Robert Stephenson, their consulting engineers, and which have been recently published, it appears to be intended, or at least proposed, to form, as soon as possible, three great arterial drains, one north of the Thames and two south of it, as a material and separately useful portion of the whole scheme of arterial drainage for the metropolis.

That on the north side is proposed to consis of the "Hackney Brook or Northern High Level Intercepting Sewer," an arterial drain expanding from 4 feet 6 inches in diameter at the outfall for the Hampstead drainage, in the line of the open Fleet sewer, to 12 feet 6 inches in diameter from Hackney, *viâ* Victoria Park to the River Lea navigation, into which it is proposed for the present to discharge this high-level arterial drainage through two parallel culverts, each 7 feet 6 inches in height by 8 feet in width, at the Hackney Brook outfall, and probably it may be ultimately deodorized and defecated by sewage manure works in that vicinity. This high-level artery is intended to direct the whole of the sewage and flood waters of fourteen square miles of the upper districts from the lower, and from the Thames within the limits of the metropolis, and it is also designed to afford the means of flushing and cleansing the lower district sewers above which it passes, and thus improve their drainage also in the meantime. The cost of this great drain in its complete state with a branch to Flour-mills, and stretching from Kilburn and Hampstead to the River Lea, with a branch from Edgware-road and Regent's-park, is estimated by the engineer at about 271,290*l.*; but the work proposed to be immediately executed are estimated to cost only about 181,290*l.* The expense of the whole Sir William Cubitt estimates in a round sum at 300,000*l.* As Parliament has already sanctioned the formation of a tunnel railway along the New-road, which will intercept the present main lines of sewers, it is considered that this upper line is rendered the more imperatively necessary, inasmuch as the immediate construction of an intercepting sewer along its route is thus actually necessitated.

The works on the south side will be more costly, inasmuch as, from the nature and difficulties of this low-lying swamp, two great arteries must be simultaneously formed, the one a high-level drain to intercept the flood waters from the southern watershed, as well as the sewerage of the suburban districts, and the other a low-level one, sunk indeed from 20 to 30 feet below high water mark, so as, by aid of engine power at a pumping station, to be equivalent to an elevation of the level of this low-lying district to an average of 20 feet. As many of our readers are aware, the common sewers on the south side are already below the level of the river and form mere elongated cesspools, and it appears to be intended, by sinking the arterial drain still lower, to obtain a practicable fall throughout the district, as well as a virtual elevation of the whole. From 1,500 to 2,000 horse power, it is estimated, will be required to raise the sewage at Deptford-creek, where it could be defecated and deodorized before being allowed to pass into the river. The high level, or catch-water arterial drain, is thus intended, as one main purpose, to render the lower arterial drainage practicable by pumping, as it will intercept the flood-water, which would deluge the lower; but it seems to be still contemplated that the lower shall be flushed, when requisite, by the higher; and it is moreover remarked, in the engineer's report, that the present sewers in the lower district could be used as a sort of reservoir in extraordinary floods, to be emptied at low water,—a very doubtful advantage, we should fear.

The high-level intercepting sewer or artery on the south side commences at Clapham-common, and expands from the ordinary dimensions (3 feet 9 inches by 2 feet 6 inches) to 12 feet in diameter, as it runs through Cold-harbour-lane, after junction with a northern branch, to the Lyndhurst-road, where it will receive a southern branch, and whence it is increased to two parallel culverts, each 11 feet in diameter, which run to the mouth of the Ravensbourne at Deptford-creek, into which it will discharge the drainage from 7,850 acres by gravitation at high water of the highest tides.

The lower artery is to include the drainage of Battersea. It commences with a circular sewer of 5 feet diameter, and expands, as it runs by Kennington-common and Old Kent-road to Deptford, from 8 to 10, and 12 feet in diameter, receiving the drainage from 4,450 acres, after which it will eventually receive an important branch from Lower Deptford-road, draining

about 3,300 acres; and end by running under Deptford-creek to a pumping station and sewage works.

Both of these arterial drains on the south side, with their branches, will comprise upwards of 20 miles in length, a small portion tunnelled. The cost of the whole is estimated at 637,000*l.*

COMPENSATION CASE—VALUE OF LAND AT NORTH WOOLWICH.

On the 14th inst. a special jury assembled at the Pavilion Hotel, North Woolwich, before Mr. Under-sheriff Palmer, to assess the compensation value of land the property of Mrs. Mary French, and required by the Victoria Dock Company. The *Kentish Independent* gives a report of the proceedings, from which we get the following particulars:—

The claim was for 67 acres of land, abutting upon the road leading from the Ferry to West Ham, and extending to Duval's House, with a river frontage of about 2,000 feet, and the damage by severance to about 70 acres, the residue of Mrs. French's land.

The chief feature in the contest of evidence was as to the value of the river frontage, the claimant's witnesses attaching much importance to it, from the high prices paid for land so situate, between the railway terminus and Blackwall; and the company contending, for reasons hereafter given, that the river frontage gave no additional value to the land in question.

On the part of the claimant the following surveyors, gave their opinion as to the compensation value the tenant was entitled to receive, as follows:—

Mr. Statter, land agent to the Earl of Derby	£44,765
Mr. Hammock, of Bow, Essex	26,200
Mr. Griffiths, of London	26,370
Mr. Ponsford, of Brentwood	27,229
Mr. Fisher, of Stratford	28,236
Mr. J. W. Higgins, of Furnival's-inn	26,800
Mr. Tite, of London	26,800

On the following day the company commenced their case by calling Mr. Charles Rowland, the Harbour-master to the Port of London, and Mr. Leach, the Engineer and Surveyor to the Navigation Committee, to prove that the river frontage could only be made available for wharfage purposes by an enormous outlay, owing to the length of the foreshore, and the great deposit of mud, caused by the set of the tide in Gallion's Reach; and gave their opinion that there was no part of the river frontage, from the land in question to London-bridge, so ill adapted for wharfage purposes.

Mr. Edmund Smith, of Woolwich, was then called, and produced plans and sections, with detailed estimates of the cost of wharfage construction, in order to prove that the great outlay that must necessarily be incurred, would consume more than the rental value when constructed, leaving nothing for the fee-simple of the land.

The following surveyors were then called as to value:—

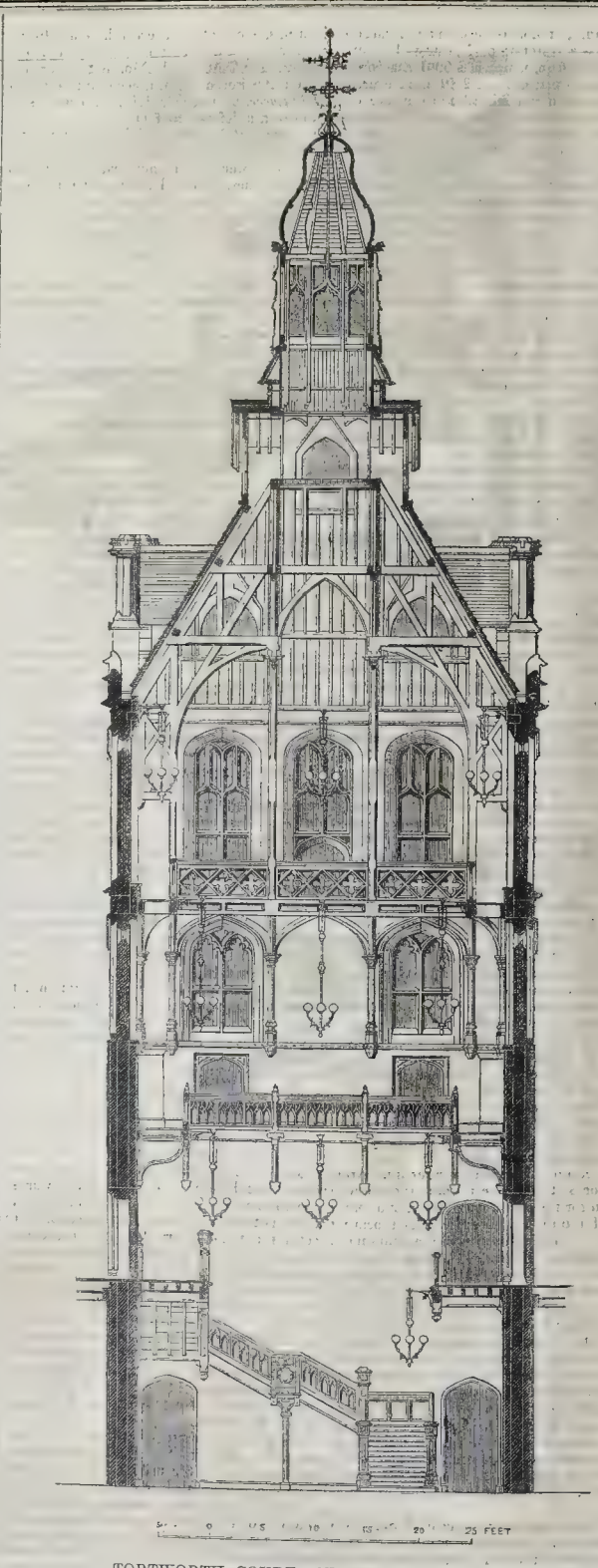
Mr. W. H. Dean, Stratford	£10,261
Mr G. Hudson, Woolwich	10,640
Mr. Brown, London	11,000
Mr. Withall, London	11,100

Mr. James, in replying, animadverted severely upon the company's witnesses, and dwelt upon the fact that the company, under the powers of their Act, took from the claimant about 2,000 feet of her river frontage, when all they required was about 100 feet for the entrance to their docks. The jury having retired for about an hour, upon their return gave a verdict for 16,000*l.* including severance.

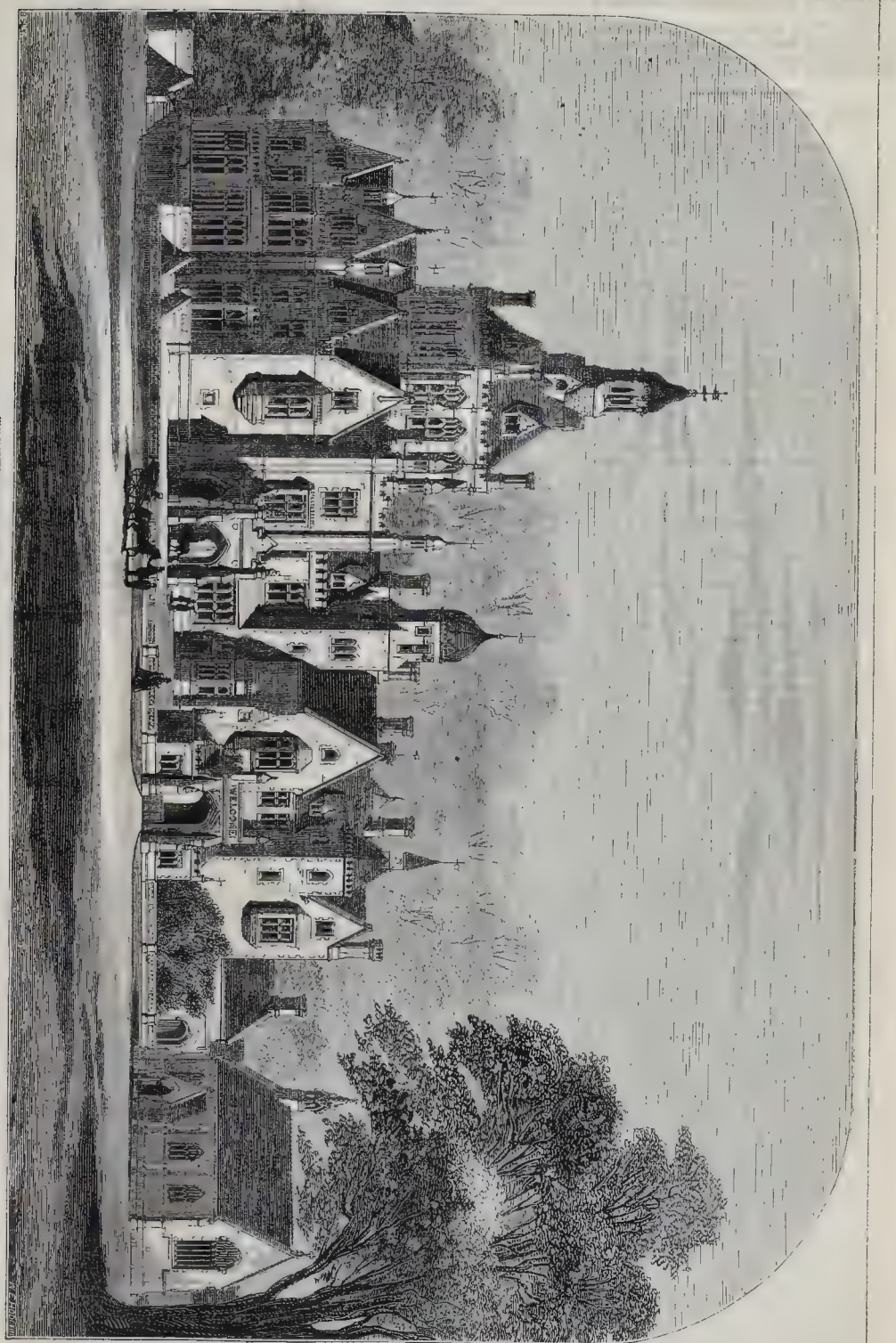
TORTWORTH COURT, GLOUCESTERSHIRE.

This week we give a view of the new seat of Lord Ducie,—Tortworth Court, Cromhall-park, Gloucestershire, with a sectional view of the hall.

In a future number we shall give other illustrations, with some particulars, of the building. Mr. Teulon is the architect.



TORTWORTH COURT: SECTION THROUGH HALL.



TORTWORTH COURT, GLOUCESTERSHIRE.—Mr. Teulon, Architect.



BRASS AND BELL-FOUNDING, &c. AT EDINBURGH.*

BRASS and bell-founding, it appears, were practised in Edinburgh at an early date on a small scale: but while the first of these arts has greatly increased, the latter, we believe, is now carried on by only two firms in the city. There were in former times several generations of bell-founders of the name of Watt.

Like most of the trades which have had their beginning in the small shop of a working master with one apprentice, the origin of brassfounding in Edinburgh is untraceable. The first brass-founder, however, who brought the trade into notice was Mr. John Milne, grandfather of the present Mr. James Milne, of Messrs. James Milne and Son, a well-known firm in Edinburgh. Having qualified himself in London for executing any kind of work, he was soon extensively employed by the nobility and gentry of Scotland. To James Milne and Son belongs the merit of being the first to introduce steam power and its accompanying machinery for the finishing of brass work, an improvement which must always be regarded as an epoch in the trade. They were also the first and most extensive manufacturers of gas metres, in which they continue to do a very large business. They are now erecting extensive workshops on the grounds belonging to Milton House, Canongate, which for air, light, and general comfort to their workmen, will not be excelled by any establishment in the city.

The next oldest brassfounding establishment in the city is represented by Mr. Brown, North Bridge. Mr. Brown deserves notice as the inventor of some articles useful in promoting the comfort, convenience, and safety of the public. Many articles worthy of notice, chiefly ornamental, we observed in other establishments, but one thing that will strike the visitor, who will be welcomed into any of them, is the number, elegance, and variety of gas lustres suspended from the ceilings of the different warerooms. These, considering that there is not a professed modeller in any of these manufactories, reflect great credit on the superior workmen who generally *get up* these tasteful dining-room, drawing-room, and lobby appendages.

In the operative department of the trade the workmen in the larger establishments are divided into founders, finishers, smiths, engineers, tinsmiths, coppersmiths, clock-makers, and wrights, though some of these are not required when the work is more strictly confined to the brass-founding business. In the large workshops in which quantities of goods of the same description are manufactured, a large proportion of the operatives work by the piece, and in some of them on the division of labour principle. With the aid of steam-machinery these piece-workers make excellent wages, while the physical tear and wear is greatly diminished. The turning-lathe kept in constant and rapid motion by steam power, and the turning-lathe kept in motion by the foot of the workman, are essentially different machines in all that respects speed, power, and ease in the operation of turning. By the lathe driven by steam, lads and even boys can and do turn work which they could not, for want of weight and strength, do at all upon the old foot-impelling system. Of course, steam power is rapidly superseding the power of muscle and sinew in this department of labour. Such a consummation will at once increase the profits of the employer and the ease and working durability of the operative. A few years will thus be added to the beginning of his life, and a few to the end of it, while his toil will be lessened by one half during all the time between. To whatever branch of industry steam power has been applied, it has wrought the heavy work for man, and in no description of work is this more apparent than in the turning of metals.

Founding has generally been considered an unhealthy branch of the trade, and certainly in confined and unventilated cast-rooms, from which the volatile vapour of melted zinc does not immediately escape, it must be considered so. But the importance of ventilation is now much better understood than it formerly was, and wherever this has been properly attended to, the founders themselves are of opinion that little or no specific disease is attachable to the trade. It is, however, admitted by them that in instances where the finishing shop is immediately over the cast-room, the fumes of the metal render the finishing shop, if not unhealthy, at least so uncomfortable that this arrangement should be avoided. Some of the cast-rooms are small and more confined than seems conducive to the health of those who work in them; but there are different opinions upon this subject, both amongst the employers and the operatives. Along one side of the cast-room is placed a row of air furnaces for melting the metal, over which is a large vent, which receives and carries off the fumes of the metal during this process, and if the cast-room is otherwise well-ventilated, it is all this time free of noxious vapours. When the melted metal is poured into the moulds, the fumes of the zinc rise like smoke. The smell of this vapour resembles that of phosphorus, and its taste in the mouth is very disagreeable. Now, where there is good ventilation, the cast-room is cleared of this vapour in a short time, and this is repeated generally only three times a day. This is the process of casting. It is certainly warm work, to which a drying stove always placed in the cast-room very materially contributes.

"Dipping" and "bronzing" are acknowledged on all hands to be unhealthy parts of the business. The dipping of the casting repeatedly in aquafortis is for the purpose of cleaning it after it comes from the mould. After it is thoroughly cleaned it is dipped in water to wash off the aquafortis, and sawdust is used for properly drying it: it then goes to be finished for bronzing or lacquering, as the case may be. The article to be bronzed is heated on an iron plate: the bronze is laid on with a brush, and it is again laid on the hot iron plate to dry. Now, there is arsenic used along with muriatic acid and smiths' ashes for producing a black colour; and, without doubt, wherever there is arsenic there is danger; and when aquafortis and brass come in contact there is also danger; but there is a man employed for this work, so that any unhealthiness attending it does not affect the tradesmen generally. Females are employed in lacquering. They work in a room by themselves, and have a fresh and healthy appearance. The process is much the same as bronzing, but the ingredients, we suppose, are less pernicious.

The number of apprentices seems out of all proportion to those in other trades. Of the whole number of persons employed boys form fully one-third. They do all the small castings, prepare the moulds, turn joints, and many other things. They can mostly all read and write. They are expected to serve seven years' apprenticeship, but very few of them are bound. It would appear that the expense of the indenture has been one reason for not binding them, but in one of the largest establishments we are informed, that so soon as the new Act comes into operation all the apprentices will be bound.

The difference between casting iron and casting in brass consists in the use of air instead of blast furnaces, in the finer quality of the sand used in moulding, and in the nature of the metals operated on. In all other respects the process is the same.

As regards wages, casters have from 22s. a week upwards. Pattern makers and smiths have similar work and wages to those employed in iron foundries, ranging from 18s. to 22s. per week. Clock-makers, who fit up the going work of gas meters, tinsmiths, and other piece-workers, earn from 20s. to 30s. per week. Apprentices, according to the time they have been at the trade, earn from 2s. to 7s. per week. In the mean time employers are busy, and wages rather on the advance. The operatives are pressing hard for the week of fifty-seven hours, and as so many other trades have obtained this boon, they are very likely to obtain it too. Indeed, they have been in the practice for many years of working extra time for the afternoon of Saturday, but what they now want is to have it without working the extra time, the same as other trades.

As to their intellectual and moral standing as a trade, they are reported to be much improved of late years, while not a few of them could stand a little improvement still. The casters are said to be less steady than the finishers and this is attributed to the nature of their work; but there are many intelligent and steady men to be found in the workshops of brass-founders, and that they are excellent workmen a reference to their weekly earnings clearly demonstrates.

The large number of boys and lads connected, one way and another, with the trade ought to engage the attention of employers, and the moral and well-principled men in the shops.

The number of men employed in brass-foundries may be about 500, the number of boys and lads about 350: the number of females is small, perhaps not more than twelve, making a total of 862. This, however, includes all the classes of tradesmen employed in these establishments.

* Abridged from the *Edinburgh News*.

MEDIÆVAL MS. ON GLASS-PAINTING.

THERE has been discovered in the parochial archives of Pfalzel, near Triers, on the Moselle, a MS. written, or rather copied by Cristoph Gretzer, of Coblens, in the year 1561, which contains many valuable instructions and recipes for painting and burnishing glass as practised then and in former times, when this art was most flourishing. The copyist states at the end of the volume that he has obtained the information from *Herr Nicolaus*, and it is to be supposed that he merely copied a MS. of that personage. Some German archæologists think that the H. Nicolaus thus mentioned is Nicolaus von Boensroedt, a gentleman who had been intimate with Elector John, and had learned the art of glass-painting both in the Ober and Netherlands, in Rome, &c. The title of the MS. is "Eynn Clarlicher bericht," &c. viz. "A clear Report and Instruction of the fine Art of painting and burnishing Glass, together with many Cautions (*cautelenn*) and Instructions appertaining thereto, and a thorough Information. Anno 1565." We copy the chief heads of this curious treatise, which, being in progress of publication in Germany, may furnish the profession with some novel instruction:—"Of the distinction between good and bad glass—Of the punctures—Of the filings of iron for marking—Of the fuzing glass or gett (?)—Of gummi arabic for the puncture of latt—Of the writing or painting on glass, and for the first of the *Lavirungh*, or working of colours—Of the red puncture, or how to burn lilac in glass—Another art to burnish red in white glass—A noble art, and unknown to many glass-painters, how blue is to be burnished into white glass—Of the *Blaen* (an especial sort of blue of very high hue)," &c.

PROPOSED RESTORATION OF THE SCULPTURE AT WELLS.

IT has recently been pretty generally rumoured by the press that the Dean and Chapter of Wells contemplate the "restoration and complete renovation" of the splendid thirteenth century sculpture of their cathedral, west front. This report, instead of proving a mistaken one, as all who feel a sensitiveness on such a point must have concluded, or at least hoped, is now followed by another, by which it appears the work is, or is about to be, commenced, and that the commission has been entrusted to Mr. Derham, a resident of the town. Before this impending mischief—which once inflicted will be irreparable—is perpetrated, I trust you will allow me to raise, in your influential pages, a protest, in the name of art, against the fatal injury which threatens these splendid old relics and their time-hallowed associations.

There is no man in England who has yet proved by his works in restoration or new architectural sculpture his capability to touch the Wells sculptures professionally without injury. Centuries and the elements have done their work gently as contrasted with the ruthless havoc of a modern chisel. Heads—limbs—hands—noses, have gone crumb by crumb to the winds: the fine feeling and spirit still pervades unimpaired the mutilated work. All authority for the parts wanting went with those parts ages gone; and modern guesses, even if they could be given with a talent equal to that of the mediæval sculptor, would offer but a sorry sub-

stitute for the original work, as they could not possibly be identical with it. Any proposition to restore the limbs of the "Theseus" or "Ilyssus" would be received by a "laughing chorus," and the unseconded proposer would be consigned—in people's wishes—to Hanwell; and yet these Wells sculptures, though not so marvellous in academic knowledge, are equally valuable to art in representing most favourably a school and a period, and on these grounds deserve the tenderest possible treatment. This care would be amply expressed by securing the most tottering of the figures from any chance of falling from their niches. In two instances, one on the north-west tower, the other in the tier above it, and to the south, restoration has done its work. A fine old seated figure bears a modern "invention" in place of the original head. In the other instance, new arms and hands raise similar feelings of sorrow that the spirit of the past should be thus insulted and destroyed. A knocking-off of these restored parts would certainly be a salutary procedure, but not quite a cure; for the new arms, heads, &c. require a letting into the old work, and this frequently involves much hacking and hewing of the figure, in preparation for the new stone.

I have ascertained that the Mr. Derham who is so confided in by the Dean and Chapter, is by profession a plasterer and retailer of beer and cyder; an honest man withal, without doubt, and one who may do credit to the town, but I scarcely expect he would be able to remove by his artistic efforts the many arguments that may be raised against the restoration of ancient sculpture—generally.

J. R. C.

THE LIVERPOOL ARCHITECTURAL SOCIETY.

At the first meeting of the present session, the president, Mr. Verelst, delivered an opening address, in the course of which he stated that the report as to town improvements made by the society, had materially assisted the council in coming to a conclusion. Afterwards, Mr. Picton read an interesting paper on the society's annual excursion to Banbury and Peckforton. The day was not propitious: as the reader said, altogether the scene strongly realized the description of the poet Longfellow:—

> "The day is cold, and dark, and dreary:
> It rains, and the wind is never weary."

But they comforted themselves with the reflection that

> "Behind the clouds is the sun still shining,"

and that

> "Some days must be dark and dreary;"

and so went on and saw what was possible. Peckforton Castle is a modern structure, the seat of Mr. J. W. Tollemache, M.P. It is said to have cost 80,000*l.* and, according to Mr. Picton, "is not a Strawberry-hill affair, nor a genteel villa mansion with elegant plate-glass windows; a bath-room converted into a donjon keep, and a water-closet putting on the resemblance of a watch-tower. It is a veritable and genuine castle, with all the solid grandeur thereto belonging; massive oak doors hung with heavy ironwork to the stone jambs; iron casements to the windows hung to the stone; stone floors to a considerable extent, and stone vaulting over the greater part of the building; yet the apartments are neither dark, gloomy, nor forbidding. In nothing has the architect shown greater skill than, while providing for all modern luxuries, in keeping to the strictest degree to all the requirements of the style and mode adopted. The plan of a building of this kind must of necessity be somewat irregular, particularly if adapted to the site. This is apt to be pushed, in the hands of the modern architect, rather to an extreme. Studied irregularity has a tendency to give somewhat of an affected air to a composition. How far the irregularity of the plan in question may have grown out of necessity, and to what extent it may have been courted, a mere glance is not sufficient to determine. On the whole, the building is bold and original in the conception, and satisfactory in the execution, presenting many hints, of which the thoughtful student may avail himself with advantage. The models which the architect has evidently had in his eye are the Edwardian castles of Wales, and the noble remains in Northumberland and Durham."

On the 19th the second meeting was held, when Mr. Huggins read a paper upon "The Columnar Architecture of Antiquity and The Stones of Venice."

THE WILTS ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY.

This new society was recently inaugurated at Devizes. It originated in the purchase of Mr. Britton's collection of books, drawings, &c. relating to Wiltshire, for a sum of 150*l.* and which, it is hoped, will constitute the nucleus of a future county library and museum, under the superintendence of this society. About 140 members were enrolled previous to the inauguration. An excellent address was given by the president, Mr. G. P. Scrope, M.P. who explained the purposes of the society and the reasons for the association of natural history with archæology. It was possible, he said, that some persons might fail to perceive, at first sight, the connection between the two branches of the study united in the title of their society—archæology and natural history. But, as has been said by others,—"The student of nature is a student of antiquities, quite as truly as the explorer of ancient art." An inquirer into God's works is as much of an antiquary and historian as he who examines the early works of man. The rocks and minerals of a country are the materials of its construction, and the monuments of the vicissitudes through which its surface has passed both before and since its occupation by man. Fossils have been aptly termed the "Medals of Creation" and the geologist, like the coin-collector, learns from them to distinguish the successive ages of the earth's history. Ethnology, again, not the least interesting of the natural sciences, examines and compares the various races of mankind by means of information supplied by archæology. To complete the history of a country, in truth, there is required a thorough knowledge of physical geography, its mineral structure, and the plants and animals, no less than of the human beings who have from first to last inhabited it. After a handsome dinner, at the Bear Inn, where Sir Thomas Lawrence was a petted artist in boy-days, an evening meeting terminated a long day. On the second evening, at which Mr. Britton presided, that gentleman explained the nature, objects, and importance of the society; whilst Mr. Cannington made remarks on the peculiar stratification, geology, and natural history of Wiltshire.

WATER, DRAINAGE, &c.

The inhabitants of Chester, according to the local *Chronicle*, are determined no longer to suffer the great and increasing deficiency of their water supply, both in quantity and quality. The Sanitary Committee have been induced to urge the Council to establish adequate water works. It is proposed to reappoint a water-supply committee to consider the matter.

At Gateshead and Newcastle, too, there has been for some time great discontent with the state of the water supply. The Whittle Dean Company, it appears, are unable properly to meet the requirements of both towns, and some of the members of the Gateshead Council, according to the local *Observer*, have been visiting the Ravensworth springs with the view of ascertaining how far they could be relied on as a source of separate supply to the borough. The quality of the water is said to be excellent, and the quantity abundant.

It is suggested by Dr. E. Meryon, in the *Times*, that prisoners might be profitably employed in pumping water, from artesian and other sources, for the supply of towns or localities contiguous to the prisons, making these latter self-supporting, without bringing prisoners into competition with the general industry of the country, and providing the former with labour which could be modified from the hardest due to the worst offenders, to the more moderate degrees necessary even for the health of others. We have longurged the hardship of compelling the honest and industrious mass of the community to support the more worthless, dishonest, and idle portion, and the advantage as well as the justice of compelling these latter to support themselves, by labour on public works, or in the direct production of food and clothing for their own bodies; and, amongst other employments, the substitution of some of our waste prison-power, in the place of costly steam, in the supply of water to towns, appears to be one amongst other proper enough modes of disposing of the former.

The corporation of Saltash are about to improve the drainage of the lower parts of their town. Plans have been prepared by Mr. Willcox, and notices for tenders for the execution of the work required issued.

The Burslem Board of Health have had a conference with Mr. Lee, of the General Board, as their consulting engineer, on the subject of the small pipe drainage about to be carried out at Burslem. They were induced to call for such a conference in consequence of the unfavourable impression as to that system of drainage produced by the Croydon reports of Messrs. Arnott and Page. Mr. Lee entered fully into the subject-matter of these reports with the view of proving that they were not impartial reports, and yielded conclusions as to the system not justified by the evidence. The Burslem Board appeared to be completely satisfied by the explanation of Mr. Lee, whose opinion of the objectionable nature of the Croydon arrangements in the main accorded with those of the reports in question, while he differed *in toto* as to the general conclusions on the system thence deduced.

We are glad, by the way, to see by an announcement of the Local Board of Health that Croydon has now less illness than is usual at this period of the year. This appears to be the case in the experience also of the medical practitioners of the town. All classes are now alive to the importance of removing every species of refuse and filth, and any cause of bad smells, from the neighbourhood of dwellings. They all now begin to perceive the value, not to be estimated in figures, of drainage that removes from off the premises and to a distance the refuse of life, instead of the old system of allowing it to soak away, disregarded, into the soil. "If the digging and trenching of the subsoil of Croydon, to make the new sewers," says the *Kentish Mercury*, in reference to this subject, "was really the cause of epidemic, in what an abominable state of saturation and filth must that subsoil have been, not to bear turning up without creating fever! Happily this source of danger to the health of the town is removed. The system of soakage is at an end."

The Huntingdon parishes have agreed on the necessity of having a general cemetery.

Scarcely anything is talked about in Stamford but the necessity of having a cemetery. Notices have been given of vestry meetings to consider the propriety of providing burial-grounds, or a joint burial-ground, under the provisions of the Act 16 and 17 Vict. c. 134.

At Whitehaven a deputation from the Board of Health, and the ministers connected with the burial-places in the town, have had an interview with Lord Lonsdale, when the subject of establishing a cemetery underwent considerable discussion, both with regard to graveyards, which the clergy did not seem to think were overcrowded, and with respect to their interests in the matter. The discussion terminated without any decisive measures being taken for the promotion of this long-desired object.

BUILDERS' BENEVOLENT INSTITUTION.

The annual dinner of this institution, to commemorate its sixth anniversary, took place on the 25th inst. at the London Tavern, Mr. P. Rolt, M.P. in the chair. In the course of his remarks on the toast, he announced that there were at this time twenty-two persons, male and female, receiving support from this institution. That, however, was a very small number, considering their institution had been established six years; and he therefore called upon them to support the directors in their endeavour to increase that number.

At the last election, owing to the inability of the founders to elect more for want of funds, seven candidates for election had been unsuccessful, and no doubt they and their friends were awaiting with anxious hearts the result of that night's appeal.

In the course of the evening various toasts were proposed, including "The President," "The Patrons of the Institution," "The Vice-President and Trustees," "The Brighton Branch of the Institution," "The Treasurer," "The Architects and Surveyors," "The Directors," "The Press," &c. all of which were duly honoured, and an appeal was made by the treasurer in favour of the building fund, which was intended to erect an asylum for the aged members, similar to that already raised by the licensed victuallers and other bodies in the metropolis. At the close of the proceedings, it was announced that the subscriptions of the evening amounted to upwards of 500*l.* including a donation of 50*l.* from the chairman.

Window, All Saints' Church, Margaret-street.—I observe a criticism in your current number upon the west window of All Saints' Church, Margaret-street. It is fair to state, without entering into the points raised in that critique, that the window is mainly a copy, both in design and colouration, of the east window of Wells Cathedral. Reasons, no doubt, existed why this window was proposed to M. Alfred Gerente as his model.

A Constant Reader.

SMOKE CONSUMPTION.

In your article of October 1st on the smoke nuisance, you say, "Down with the smoke; that is, let us never allow it to go up." Allow me to submit the following scheme for accomplishing this, which would take the power of doing so out of the hands of the public; and in consequence of the than purer state of the atmosphere, would not cost more than what would be saved in washing alone. I should have from every fire a circular flue, 2 inches diameter, carried down in the thickness of the contiguous wall, conducting the smoke into a main flue in the street, in which a vacuum equal to about one-tenth of a pound per inch should be maintained by an apparatus, consisting of a revolving fan, like those used in blast-furnaces, and a tall chimney with smoke-consuming apparatus at its base. A 2-inch flue, under these circumstances, would be four times as powerful in effect as an ordinary 9-inch flue, in which the smoke ascends 2 feet per second: its mouth, therefore, might be closed, so as to leave a circular opening 1 inch diameter. It would then take one-fiftieth of a horse power to work it, or four bushels of coals per annum, and cost about 2s.

There might be some difficulty in clearing the flues, but I think this would be overcome by first firing, and then sweeping them with an appropriate apparatus.

C. G.

NOTICE UNDER NEW BUILDINGS ACT.

In a recent number I was glad to read an announcement of an intention on your part to address a few words to a certain class of builders, who systematically evade the provisions of the Buildings Act in not sending the proper legal notice, and in other ways; or if they send it at all, send it at the eleventh hour, when some unforeseen difficulty may have arisen: then come palpably frivolous excuses, as to why the notice was not sent, the intention being to trust to the chapter of accidents as to the discovery of the work or not. I confess matters appear to me to have arrived at a point at which it has become necessary to put the full penal provisions of the Act in force, and make a salutary example of such defaulting builders, many of whom, from their positions and means, should know better.

In the majority of cases, the notice is not in the proper legal form, but comes in a handwriting not always intelligible, and not embracing any one of the points required to be specifically set forth.

Another act of illegality is, not sending a separate notice for each separate and distinct work: not unfrequently, for example, notice is sent of a house, and on a chance visit a few months afterwards, it is discovered that a large detached range of workshops has been built—irregularly and improperly.

A District Surveyor.

Notices of Books.

The Pantropheon; or, History of Food and its Preparation; from the earliest Ages of the World. By A. Soyer. Simpkin, Marshall, and Co. Stationer's-hall-court, London. 1853.

This is a very learned and curious book of its kind,—quite a gastronomical or epicurean classic. M. Soyer, in providing food for its pages, has not only ransacked the cellars, pantries, and kitchens of the ancients, but their poetical, historical, philosophical, and mythological storehouses, and has worked up a whole that may be called unique. Books innumerable, from the oldest and most venerable of all,—the Bible,—downwards, have been rummaged right and left for descriptive glimpses, hints, or allusions, as well as for more detailed information on his favourite science; and very good use has this man of taste made of his researches, which, as he tells us, have engaged his enthusiastic attention for several years past. M. Soyer, himself a genius, *sui generis*, dedicates this labour of love to a *genius* of a still higher order—namely, to "Victua, the genius of gastronomy" herself, whom he depicts in the midst of a tempting plenitude of good things, in an engraving of his own designing. The work indeed is profusely illustrated with engravings, having forty-two steel plates, many of them containing each a number of separate sketches, "illustrative of the greatest gastronomical marvels of antiquity." Two of the most elaborate represent banquets, one an ancient Roman "feed" of the year 64, and the other, one of the *chef's* own *chefs*, namely, the York Banquet of British Mayors to Prince Albert and the Lord Mayor of London: the contrast is curious.

The work reviews the history of every thing known to have been formally, and by choice, adopted as human food and drink amongst settled nations, civilized and semi-civilized, from turtle down to crab, and sturgeon down to sprat, from elephant down to ass and dog, and from the grape, fig, and pomegranate down to watercresses. M. Soyer is beyond criticism, but we cannot help triumphantly boasting that we have discovered one oversight scarcely less than astonishing. In his overpowering list of edibles, M. Soyer has absolutely forgotten the snail! Of the frog we have *quantum suff.*; but to omit the "luscious and fattening" testudo, is unaccountable. True, we have one or two incidental and gingerly allusions to him, but surely he ought to have had a *locus standi*—or *crawli*, rather—in a list so all-comprehensive as this Pantropheon appears to give. With this rap on the heel of our invulnerable Achilles of cooks, we must bid him adieu, first saying that the book is very handsomely got up, and a curiosity in its way.

Architects should never overlook the kitchen.

Poems. By James Payn, author of *Stones from Boccacio*. Cambridge: Macmillan and Co. 1853.

Milton, in his "Monody for Lycidas," gives as one reason for lamenting him, that

"He knew himself to sing and *build* the lofty rhyme."

This kind of structure would not entitle a volume of poems to any notice in the *Builder*, were it not that the one now before us contains a poem designated "Pygmalion." This every artist may read with advantage, as it will fill him with loftier aspirations, and make him feel the truth of what Wordsworth says:—

"Creative Art
(Whether the instrument of words she use,
Or pencil pregnant with ethereal hues,)
Demands the service of a mind and heart,
Though sensitive, yet, in their weakest part,
Heroically fashioned—to infuse
Faith in the whispers of the lonely Muse,
While the whole world seems adverse to desert."

Miscellanea.

Fall of a Portion of the Killarney Railway Hotel.—A considerable portion of the Terminus Hotel now in progress of erection, has fallen. Fortunately the accident did not take place during the day, as a considerable number of men were at work at that particular part which has fallen, and which was being roofed in. This is the second time that a portion of this building has fallen, which is attributed there to the insecurity of the foundation.

St. Paul's again.—Cannot something be done with St. Paul's? It is the fate of several friends of mine living in propinquity to that noble building, that they must either go to church to St. Paul's every dismal Sunday in the year, or have no prayers at all. One gentleman now goes to the Roman Catholic Chapel at Moorfields in preference, as he cannot leave the City; and many more connected with the newspaper press will, I think, follow his example. The cause of all this is the frightful unbearable cold of the building, coupled with the aristocratic insolence of the vergers. With the latter, of course architecture has nothing to do: the coldest day in winter it is a treat to rush out of the building into the open air. There must be at least 8 or 10 degrees of difference by Fahrenheit. It is useless for the poor choir to do their best; and a very rubicund gentleman, as last Sunday, to thunder forth about the "helmet of salvation," every one, especially in the galleries, shaking and shivering with the frightful drafts and cold, and turning up their collars over their heads. In the Madeleine in Paris, in the Cathedral at Cologne, in Westminster Abbey I have never felt this horrible iceberg frigidness. A few sheets of glass run up alongside the organ, and those gaoler-like gates near the communion-table brought down with their drapery to the same place would make the church quite warm. It may be argued it would injure the uniformity of the building, but it would save many lives; for no one is safe, I state as a medical man, from a fit of apoplexy, a cough, or cold that may bring him to his grave who attends service one winter in this most beautiful of all our churches. The poor young people from the wholesale houses around St. Paul's Churchyard, who are obliged to attend, and whose quiet reverent attention to the service is worthy of every encouragement, are to be pitied.—A Physician.

Portrait of Shakspeare.—Mr. Hogarth, of the Haymarket, has published an exceedingly interesting *fac-simile* of a portrait, formerly in the collection of John Lord Lumley, Lumley Castle, Durham. It is printed in chromo-lithography, by Mr. Vincent Brooks. It is uniform in size, style, and colour, with the original, and is certainly the best imitation of an old oil-painting that we have ever seen. According to Mr. Hogarth's prospectus, the picture from which this engraving has been taken, was sold at a sale of pictures at Lumley Castle, in the year 1785. "Subsequently it was, with other pictures, repurchased by the Earl of Scarborough, a descendant of Lord Lumley, and remained in the possession of that family until 1807, when the collection was again dispersed. The sale in 1807 appears to have been badly managed, for many of the portraits were sold anonymously, and this of Shakspeare among the number. Fortunately, an artist, Mr. Ralph Waters, of Newcastle, was present, who recognised the picture and bought it." The Lord Lumley who made the collection was contemporary with Shakspeare, and his death is recorded a few years prior to that of the poet. We are not disposed to give any positive opinion as to the authenticity of the portrait. It is not unlike the bust in Stratford-on-Avon Church, and attaching, as we do, considerable importance to the bust as an authority, this circumstance is in its favour with us.

Railway Matters.—Our usual traffic tables, says last week's *Railway Times*, display a receipt this week of 369,119*l.* 2s. 7d. earned on 6,640¾ miles, and giving an average of 54*l.* 4s. 10¾d. per mile, as compared with 317,665*l.* on 6,441¼ miles, or 49*l.* 6s. 4¼d. per mile, in 1852. The receipts are therefore 4*l.* 18s. 6d¼. per mile more than in 1852. The gross amount received since first week in July is 5,499,724*l.* earned on 6,640¾ miles, or 828*l.* 5s. 5d. per mile. In corresponding period of 1852, the income was 4,769,967*l.* on 6,441¼ miles, being equal to 740*l.* 11s. 3d. per mile. The gross receipts since first week in July are 87*l.* 14s. 2d. per mile more than in same period of 1852.——A modification of the self-acting signal has been invented by Mr. W. Greaves, of Leeds, chemist. He proposes to have connected to the whistle of all railway engines a hanging-lever; this so placed as to come in contact with a moveable tapit placed at proper distances along the line or railway, so that when one of the tapits is raised up on the line the lever from the whistle will hit it and open the same, so as to cause it to act in the same way as by hand. In this case, of course, the signal is only so far self-acting as the tapit would be set by the guard of a stopped train to warn the next of the obstruction ahead. At stations it would be frequently in use.

Transverse Joists, &c.—Mr. S. Perkes, of Walbrook, engineer, has recently, it is said, erected, at his works in the Borough, a series of timber joists, six in number, and 50 feet in length, supporting a flooring of 2,500 superficial feet, on a principle patented by him. Each is composed of lengths of half battens, placed vertically, 1½ inch thick, laid so as to break joint: these are crossed at an angle of 45° by pieces of like thickness, which are again covered with similar planks to the first-named, the whole spiked together, forming a beam or truss 3½ inches thick, and 20 inches deep. With a weight of 20 tons placed on the floor, supported by these six joists, the deflection is said to have been scarcely perceptible. The patent is secured for iron as well as wood, and the cost of structures built on this principle is said to be 50 per cent. less than ordinary.

Tax on Providence.—Permit me to refer you to a letter which appeared in the *Builder* some twelve months ago, signed, "An Insurance Clerk," for the reason why workmen do not insure their tools against the calamity of fire. The writer of that, I think, would not differ with me in assigning as the cause the charge that is made of 3s. per cent. as Government duty, while the insurance office asks but *half that sum per cent.* for the payment of the risk, including office expenses. Your columns have twice drawn attention to this fact in a forcible manner; but while such a bar to the providence and indeed welfare, of the working men remains, I hope you will lend all the influence you possess to keep this state of things known to the public, and promote its abolition. Looking at matters as they stand, however, I would suggest the economy, to men who insure for only a small amount, of inducing their employers to take out a floating policy for a round sum, and permitting them to hold shares in it at a *pro rata* cost, by which a saving in every respect would be effected,* equal, or even superior, security attained, and the payments, where a good understanding subsisted between employer and employed, reduced by easy instalments to next to nothing from a man's weekly salary.

"A Stitch in Time."

* The lowest charge made for duty is 1s. 6d. whether say for 20*l.* or 50*l.*

Wellington Docks.—A company has been formed for the construction of extensive "Wellington Docks," on the Surrey side of the Thames, close to the Spa-road Station of the South-Eastern Railway. It is intended to form import, export, steam, and collier docks, with a water area of 60 acres; also dry docks, for repairing vessels. Except of the Victoria Docks, now forming at North Woolwich, no material addition has been made since the opening of the St. Katherine Docks in 1828, although a recent parliamentary return shows that the amount of vessels and tonnage entered inwards from foreign ports since the year 1840 had nearly doubled. The river entrance will be opposite the London Docks, and the gates and locks will be constructed to admit the largest steamers and other vessels. The capital is to be 1,000,000*l.* in 25*l.* shares, 2*l.* 10*s.* per share.

The City Cemetery. A report on a site near Ilford and Epping Forest, in Essex, has been favourably given by the committee to the City Sewers Commission, and by the Commission adopted and laid before the Court of Common Council for final approval and adoption. The site comprises a farm of 120 acres, the cemetery being very properly intended to be surrounded by a belt of ornamental planting, or at least of uninhabited land, and the cost will be 150*l.* an acre for the freehold and 2,500*l.* for new farm buildings, besides compensation to the lessee for six years' lease. The distance is about seven miles from London, and close to the Eastern Counties line of railway, the directors of which are quite ready to enter into definite arrangements for the transmission of the dead.

Telegraphic Progress: the Atlantic Telegraph.—A gentleman of Massachusetts has discovered a method, it is said, by which the conducting capacity of telegraphic wire is increased to an astonishing power, being many hundreds per cent. over that possessed by the wires now in use. The same gentlemen is also said to have made an important improvement in submarine and subterranean insulation and protection, at a cost, too, of less than one-third of present modes. Both improvements have been purchased by a new company, called "The European and American Submarine and Subterranean Telegraph Company," now in course of organisation. Their object is to construct a line of telegraph between New York and Liverpool, *vid* Dublin, and Galway to Newfoundland (1,500 miles), thence to Nova Scotia and New York. The whole route is about 2,800 miles. The cost per mile for the submarine wire, on the improved plan, is estimated at less than 600 dollars instead of 800 dollars. For the subterranean portions of the route the estimated cost is about 200 dollars per mile, which is said to be less than one-third of the cost of such lines now in use. The entire cost of the line is estimated at about 350,000*l.*

Prevention of Strikes.—"Since strikes," says the *Spectator*, "arise chiefly from imperfect knowledge, and that generally on the part of the labouring class, of the ratio between the demand and the supply of labour—that is, of the natural wants of the employing and employed classes,—might not this deficiency of knowledge be supplied, and the consequent uncertainty as to fair rate of wages be removed, by forming, in every manufacturing town or industrial district, a committee composed of equal numbers of employers and working men, to be chosen by their respective constituents at certain periods, and meet once a month or oftener, for the full and unreserved communication of all the facts known to both parties affecting their relations to each other, and for settling, for a limited time, the rate of wages which the actual state of affairs rendered just and necessary?" The writer adds that it would be indispensable that the considerations by which the committee were guided in fixing the rate of wages should in all cases be fully *made known* to its constituents, the essential function of the committee being to ascertain the facts and to publish them; for that nine-tenths of the disputes about wages are occasioned by want of the necessary knowledge on one side or other.

Experimental Brick-field.—A correspondent, "S. P." suggests that builders, architects, and all connected with the building trades should unite to raise a fund by which a model brick-field could be maintained near a canal or railway, and near the metropolis, which could be divided off, and let to parties having reasonable projects for lessening the costs of bricks, reserving also a small per centage on profits afterwards to be realized by any such parties. That they may thereon try their projects whether it be by machinery, modes of making and mixing and burning, or any other improvement or saving in cost; also in drying, so as to continue the making of bricks throughout the whole year, let the weather be what it may, by inventing cheap modes of mixing, drying, and burning, that in the seasons of short demand an accumulation of bricks should be preparing for the busy time of using them. Premiums should be offered.

Camden-road Chapel, Upper Holloway.—The foundation-stone of this chapel (being the first to be erected by the Baptist Metropolitan Chapel Building Society) was laid by Mr. Peto, M.P. on Thursday, the 20th inst. Mr. C. G. Searle is the architect appointed. The building will be in the Perpendicular style of Gothic architecture. The dimensions of the chapel are 76 feet 6 inches in length by 50 feet in width. The amount of the contract is 4,467*l.*

Accident at Chelmsford Drainage Works.—Part of an excavation 7 feet in depth in the High-street, connected with the public drainage works here, fell in last week in consequence of not removing, or providing sufficient shoring against, 40 to 50 tons of iron which stood against a wall just above the trench. Two men were partially buried, and one had his leg fractured.

Lecture on Paper.—A lecture on the origin, manufacture, and importance of paper, delivered in the Museum of the Islington Literary and Scientific Institution, by Mr. R. Herring, a proprietary member, has been published by Jackson, of Paternoster-row. The author is practically acquainted with his subject, and the lecture is well worth perusal.

The City of Adelaide.—The *Register* states that the city surveyor had lately suggested the expediency of commencing the works necessary to the construction of a durable bridge between the northern and southern divisions of the South Australian metropolis. It is understood that Mr. Perryman does not contemplate a total expenditure exceeding 12,000*l.* for the construction of a durable bridge, which would not only be an ornament to the city, and an invaluable public accommodation, but serve to indicate, unmistakably, where the upper terminus of the Adelaide City and Port Railway ought to be.—*Australian and New Zealand Gazette.*

"The Last Supper."—"The Last Supper" of Leonardo da Vinci, being painted in and for the refectory of the Dominican convent of Santa Maria delle Gracie, at Milan, has suffered so much from time and exposure, that its colours scaled off lately at every breath of air. The restorer of paintings, M. Steffano Barezzi, has, however, made a discovery, by which these decaying colours can be again combined together and fixed to the wall, which being tried on the above picture, has, it is stated, completely succeeded. Something has been said of removing the fresco from the wall altogether, and placing it on panel.

Flower-pot Nuisance.—In traversing one of the narrow streets by the Strand, my progress was momentarily arrested by the fall of a flower-pot from the window-sill of a third-pair floor: four more were ready to follow. The lodgers had gone out, locked the door, and there were no means of getting at them. Proper balconettes would at once effectually stop this nuisance, and at the same time enable those florally inclined to indulge in their pursuits without danger to the public. The folly and wickedness of placing these pots on the weathered sill of a window, liable at any moment by a gust of wind to be swept into the street, no one will perhaps deny; but how is it that the placing of flower-pots and boxes in such positions is not strictly prohibited and made a matter of police regulation?—S.

Campanile, Trinity College, Dublin.—In a notice of the architectural designs in the Dublin Exhibition, given in the *Exhibition Expositor*, we find a memorandum of the model of the Campanile in progress of erection at Trinity College, the gift of the Lord Primate, under the direction of Mr. Lanyon, architect. "The basement is pierced by four arched entrances, with massive piers and Roman Doric antæ, tastefully ornamented with vermiculated ashlars. Above the entablature is an octagonal superstructure of Corinthian columns, with pedestals resting on a circular base, and having a semi-oval roof enriched. At the angles are four figures representing Divinity, Science, Law, and Physic, by Kirk. The whole is surmounted by a lantern turret, and terminated by a gilt cross."

The Font at Islip.—"In the garden is placed a relic of some interest—the font in which it is said King Edward the Confessor was baptised at Islip. The block of stone in which the basin of immersion is excavated is unusually massy. It is of an octangular shape, and the outside is adorned by tracery work. The interior diameter of the basin is 30 inches, and the depth 20. The whole, with the pedestal, which is of a piece with the rest, is 5 feet high, and bears the following imperfect inscription:—

'This sacred Font Saint Edward first *reserd*,
From Womb to Grace, from Grace to Glory went,
His virtuous life. To this *fayre* Isle *begeeth'd*,
Prave . . . . and to *re* but lent.
Let this remaine, the Trophies of his Fame,
A King baptized from hence a Saint became.'

"Then is inscribed:—

'This Fonte came from the King's Chapell in Islip.'"

Extracted from the "Beauties of England and Wales," title "Oxfordshire," p. 454.—*Notes and Queries.*

Proposed Town-hall, Cheetham, Manchester.—A correspondent informs us that on Thursday, the 20th instant, the committee for the erection of a new town-hall and overseers' offices for the township of Cheetham, in the parish of Manchester, held a meeting, adjourned from the previous Monday evening, to examine plans, &c. sent in by four competing architects, and those produced by Mr. Bird, architect, of Manchester, were adopted. The design is of Italian character. Contracts for the erection of the building are to be entered into immediately.

Dust in Marylebone.—Seeing your notice of the rise in dust, I thought you would like to know what has been given in Marylebone parish: the contract was signed on the 24th, and the first payment made in advance. It was let for one year, and divided into three districts, and taken by the undermentioned contractors:—Benj. Abbott, St. Mary's Rectory and All Souls, 3,640*l.*; H. Tame, Christchurch, 1,500*l.*; G. Tilley, Trinity, 511*l.* Total, 5,651*l.*—R. D.

The Tenders for Llanelly Reservoir.—In our notice of these tenders (p. 636), it was said that Mr. Lewis's tender had been accepted, but that he had withdrawn it. Our correspondent, it seems, was misinformed as to the name, and as Mr. Lewis thinks the statement calculated to be injurious to him, we willingly contradict it.

TENDERS

For building Mr. Simon's Villa at Beddington, Surrey, as advertised for in the *Builder*. Mr. C. Foster, architect. Quantities were not supplied.

Mr. Gadsby	£1,097 0 0
Mr. Fowler	1,090 0 0
Mr. Brake	980 14 0
Mr. Chapman (accepted)	928 0 0
Mr. Wilkins	875 0 0
Mr. Williams	850 0 0

For New Filter-bed, Deptford Waterworks, Kent, according to quantities furnished.

Struthers	£5,341
Jay	5,289
Aard	4,895
Ellis	4,851
Perry, Hackney (accepted)	4,697

TO CORRESPONDENTS.

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"*Books and Addresses.*"—We have not time to point out books or find addresses.

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The Builder.

SATURDAY, NOVEMBER 5, 1853.

LORD PALMERSTON has addressed a letter to the Edinburgh Presbytery of the Scottish Church, in reply to their inquiry if a national fast would be appointed on account of the re-appearance of cholera,—which ought to have attention in every town-council, parish vestry, and private house throughout the kingdom. With the fullest expression of opinion that "manifestations of humble resignation to the Divine will and sincere acknowledgments of human unworthiness are never more appropriate than when it has pleased Providence to afflict mankind with some severe visitation," it does not appear to Lord Palmerston that a national fast would be suitable to the circumstances of the present moment.

"The Maker of the Universe," says the Home Secretary, "has established certain laws of nature for the planet in which we live, and the weal or woe of mankind depends upon the observance or the neglect of those laws. One of those laws connects health with the absence of those gaseous exhalations which proceed from overcrowded human beings, or from decomposed substances, whether animal or vegetable; and these same laws render sickness the almost inevitable consequence of exposure to those noxious influences. But it has, at the same time, pleased Providence to place it within the power of man to make such arrangements as will prevent or disperse such exhalations, so as to render them harmless; and it is the duty of man to attend to those laws of nature, and to exert the faculties which Providence has thus given to man for his own welfare."

The recent visitation of cholera the writer views as a warning that the people have neglected this duty, and that those persons with whom it rested to purify towns and to remove the causes of disease, have not been sufficiently active. "Lord Palmerston would, therefore, suggest, that the best course which the people of this country can pursue, to deserve that the further progress of the cholera should be stayed, will be to employ the interval that will elapse between the present time and the beginning of next spring in planning and executing measures by which those portions of their towns and cities which are inhabited by the poorest classes, and which, from the nature of things, must most need purification and improvement, may be freed from those causes and sources of contagion which, if allowed to remain, will infallibly breed pestilence and be fruitful in death, in spite of all the prayers and fastings of an united but inactive nation."

It is unnecessary to say how cordially we echo the advice. The cholera is proceeding in London in its fatal course: death appears in the old spots, and under the usual sanitary conditions, and the measures adopted are not yet equal to the emergency. Foremost amongst the steps urgently required, we would place the removal and avoidance of cesspools; the closing of graveyards; and arrangements for the speedy and proper burial of the dead.

It is often stated that the poorer classes, particularly the Irish, delight in filth, and would not live in properly conditioned houses if they could have them for the same money they pay for worse: it has been mentioned that whitewashing has been refused by some, and violence offered against improvement by others. We admit the frightful amount of ignorance amongst more than the very poor. How can it be otherwise, born and reared as they have been? Experience, however, tells us that in ninety nine cases out of a hundred the poor have not the means of rising out of their filth and degradation. They are bound down to dirt. Still we have generally found the poor open to suggestions, willing to have the condition of things explained, and mostly anxious to escape, if it were possible, from the dens which it has been our painful duty to describe. The managers of public baths and washhouses will bear out this statement, but say at the same time that they have not yet reached the very poor: many have not even the small means required to go to these places, and more are ashamed to show their rags in the presence of others. It cannot be doubted that the poorer Irish require a peculiar kind of management, and it would be generally useless to attempt to interfere by apparent force with the forms in which they believe: let us, however, relate an instance which shows that reason and a kind way of putting the truth will receive attention.

A fatal case of cholera occurred a few days since in Ashby-street, close to the "Paradise" of King's-cross—a street without any drainage, and full of cesspools, already mentioned in the *Builder*. This death took place in the back parlour on the ground floor abutting on the yard containing a foul cesspool and untrapped drain, and where the broken pavement, when pressed with the foot, yielded a black, pitchy, half liquid matter in all directions. The inhabitants, although Irish, agreed to attend to all advice given to them as far as they were able, and a coffin was offered to them by the parish. They said that they would like to wait until the next morning (it was on Thursday evening that the woman died), as the son was anxious, if he could raise the money, to bury his mother himself; but they agreed, contrary to their custom on such occasions, to lock up the corpse at twelve o'clock at night, and allow no one to be in the room. On Friday, the day after death, the woman was buried, and so far it was creditable to these poor people, since they gave up their own desires and customs which bade them retain the body.

Is what followed equally creditable to the arrangements in St. Pancras? We think not. This corpse was brought to Old St. Pancras graveyard, when, will it be believed, it was actually placed near the top of a pit 20 feet deep, containing two rows of full-grown coffins, which from time to time had been placed there until the pile reached within a few feet of the surface. The effluvium from this pit was abominable: children were packed into the corners, so that not an inch of ground might be lost; and here during Saturday all this pitful of dead bodies, some of whom had, perhaps, fallen by fever and small-pox, together with the woman who had died of cholera, were left without a sprinkling of earth upon them. *On the Saturday afternoon the hole remained uncovered, waiting for more.* Probably on Sunday the complement was obtained and the heap was made complete; and then a few spadefuls of soil would be thrown over this mass of corruption to hide it from sight. Surely not a day should be lost in putting a stop to such disgraceful and dangerous proceedings. Who can, with justice, find fault with the improvidence and obstinacy of the poor when we see such doings on the part of those who are in authority and ought to be better informed?

With respect to the cesspool system in the metropolis, all who inquire into the subject must be struck by the enormous magnitude of the evil. The number of cesspools allowed to remain, even in neighbourhoods where sewers have been formed, is extraordinary. None but those who have examined the subject can appreciate either the extent, or the sad consequences to health resulting from it. The excuses for this state of things are numerous. "Cesspools are certainly not right," says one, "and no doubt the drains below the kitchens smell very badly now and then; but my landlord is a very decent fellow; I have lived here some time, and I don't care to put him to expense;" or "My landlo.. 's lease has not long to run, and he won't do anything." Some are in arrears of rent, and cannot remove. Others have established a business, or find their houses in some way suitably situated for ..letting, and near their employment; while ... *are utterly ignorant of the extent of ... ...lth resulting from imperfect drainage;* and but few, comparatively, know that by an Act of Parliament passed in 1848 (11 & 12 Vict. c. 123), any offensive cesspool, &c. can be removed by the parish authorities upon receipt of a notice, in writing, signed by two inhabitant-house holders. Cesspools ought at once to be got rid of in all neighbourhoods in which a sewer exists. This is a matter which not only affects the poor, but those above them in the social scale.

It is not necessary to explain the construction of the ordinary cesspool and surface-drain to the practical readers of the *Builder*, but many into whose hands this journal falls may be benefitted by a few particulars. Here is a section of what



exists in hundreds of cases, even where there is a sewer. The brick drains to take the overflow from the cesspool are seldom trapped at their entrance into the sewers: the consequence is, that the rats find their way into them, and eat through to the dwellings, causing often damage to a greater amount than the ordinary cost of a glazed pipe-drain, which would resist their attacks, and at the same time be wholesome. Most of us have seen the ordinary brick drains completely riddled by rats, and of course admitting under the floors of the houses pools of stagnant water and dangerous gases.

Many will remember houses of large size and respectable condition in which an atmosphere dull and heavy seems to hang in a substantial form. It is palpable and distinct. However cheerful a person may be at his entrance into one of these places, he will feel his spirits chilled and his whole system depressed. The smell is not of an acute description, but produces similar effects to those caused by a prolonged visit to one of our London crypts thickly occupied by the dead. Hundreds of houses in good streets are thus circumstanced.

Persons residing not only in London, but in other large towns, who have not taken the trouble to understand the formation and ill effects of improper house-drains, wonder at the deadly air which fills their apartments, particularly in the evening, when doors and windows are closed, and the air within the house is rarefied. We sometimes hear of persons smoking tobacco, as they say, "to purify the air," but this is only disguising the poison:—dressing the skeleton: the bones are within. We have been into many houses which are positively shocking, and where, nevertheless, the smell is scarcely regarded by the inhabitants. The children are pale, and have no appetite; the older occupants anxious and weary, with wide-open eyes, and half-closed mouth. To them everything looks black: the world is a prison. There are thousands in this beautiful world who do not know what a cheerful pleasant home is: fault-finding and lamentation are their chief pleasures: and we verily believe that this number would be very considerably lessened by simply filling up the cesspool, and brightening up the house.



DUKE-STREET, SOUTHWARK.



MINT-STREET, LOOKING TOWARDS HIGH-STREET.

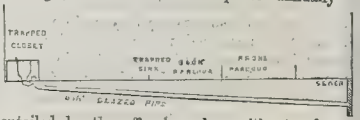


AT THE BACK OF EWER-STREET, GRAVEL-LANE.

When fever and other epidemics break out in houses with such drainage as we have alluded to, and deaths occur, the inhabitants become alarmed, and throw gallons of water through the closet into the cesspool, vainly thinking by that means they are gaining safety. By referring, however, to the diagram, it will be at once seen that flushing with water is only adding to the danger by stirring up the contents of the cesspool, and passing them beneath the houses.

The remedy for the evil is cheap and simple, and so well known, that it is surprising persons will persist in pursuing the old and offensive plan.

Fill up the cesspool and let pipes take away all refuse at once to the sewer. The cost of the arrangement here indicated is but a very few pounds, the interest of which is but a very few shillings;—less than the expense annually



entailed by the offensive plan, without refer-

ence to the damage from rats and damp, and the money cost of illness and death. The evil is of immense extent, and should be dealt with vigorously.

As a matter of course, we have received expressions of opinion that the Borough "Mint" "cannot surely be so bad" as we described it to be last week. So far from having exaggerated, our feeble words give but a weak idea of the miserable condition of this neighbourhood. Here is a sketch of Duke-street, where it adjoins Queen-street, and a second which shows Mint-street, in all its stability. The third represents a location called James's-place, behind Ewer-street. The latter is a long street of dilapidated houses, partly wood, which comes into Gravel-lane. The drainage is here most defective; and according to an old inhabitant, —"In this and the surrounding neighbourhood, were formerly many open ditches, into which the tide regularly ebbed and flowed; these have been covered, and now form 'blind drains.' Even now the tides often overflow parts of this street to a depth of from 2 to 3 feet. The cellars about here are often flooded." The houses are dilapidated, and as a matter of course, have cesspools at the back, many of them without even a covering. The health of the people is very bad: fever, we were told, had killed many lately in Ewer-street, and the courts leading from it. In Red Lion-court, a neighbour said "there have been lately several deaths." Here are cesspools and choked surface drains, which at the time of our visit were undergoing inspection. The place at the back of Ewer-street, which we have sketched, contains twenty or thirty houses. It would be difficult, either by words or illustrations to give an idea of the squalid and unhealthy condition of this spot. The houses are unfit for occupation: at the back is a large dust-heap. If this disgraceful and unwholesome accumulation be disposed of at the present time, it may be at a loss to the proprietor; but surely this is not to be set against the lives of men, women, and children? The pavement of this neglected place is broken and uneven, strewed with refuse amid puddles of water. Sometimes, in parts, the water is up to the knees of the people. The houses are thickly inhabited chiefly by Irish: there are only four closets, with cesspools, for the use of the neighbourhood, and these we found in a dreadful condition.

Should any of our readers consider that we have devoted more than a fair amount of space to a painful subject, to them repulsive, we must entreat them to bear with it for the sake of suffering humanity, and in the hope that some good may be effected by endeavours well intentioned, however weak.

"ARCHITECTURE" IN THE "ENCYCLOPÆDIA BRITANNICA."

WITH reference to the new edition of the *Encyclopædia Britannica* now publishing,* it was urged in our journal that the article "Architecture" would require further development to bring it up to the present time. The part containing it has just now been issued, and we find the writer, Professor Hosking, has added a supplement of seventeen pages, saying that as the original treatise, published in a separate form, together with another and more purely technical treatise by the same writer, had become to some extent a text-book to the student, as well as an authority upon its subject in an established book of reference, it has been thought better—there being nothing in its statements to unsay—to let it stand unaltered save by the correction of a few patent errors of the pen or of the press.

We proceed to give our readers the pith of the new matter.

"The main defect of the treatise on architecture consists, in the estimation of its author, in the narrowness of its range and in insufficient reference to construction. It takes the artist's view rather than the architect's, and makes the mere adornment the prominent subject; taking the vulgar view of architecture, indeed, which does not regard the causes within, but which looks only to what may be, and too often is, the factitious outer form, leaving aside all consideration of that which can alone give consistency and propriety to the outward presentment. This is truly the vice of almost all that has been written on architecture under that name. Architecture, in the broad sense in which it really exists, and in which alone it ought to be understood, has been ignored, and the world has been content to take the shadow for the substance. Construction, including in the term the disposition of a building with reference to its uses, is commonly taken to be to the architect what the lay figure is to the painter and the sculptor,—an articulated machine upon which to hang drapery,—and it is, by the great as well as by the little vulgar, both lay and professional, esteemed, and by some designated, the common part of the art. But construction, taken in its double sense, is really the bone, marrow, muscle, and nerve of architecture; and the arts of construction are those to which the true architect will look, rather than to rules and examples, for the means of producing two at the least of the three essential conditions of building well—*commodity*, *firmness*, and *delight*—which conditions have been aptly said to be the end of architecture as of all other operative arts.

A true architect, who arose and flourished, and has passed away within the period that has run out since the writing of the foregoing treatise, said, with equal truth and point, in commencing a lecture on architecture, which he published in 1841, and entitled, 'The True Principles of Pointed or Christian Architecture,' though the doctrine is alike true in respect of every style of architecture,—'The two great rules for designs are these: 1st, *That there should be no features about a building which are not necessary for convenience, construction, or propriety.* 2nd, *That all ornament should consist of enrichment of the essential construction of the building.* The neglect of these two rules is the cause of all the bad architecture of the present time. Architectural features are continually tacked on buildings with which they have no connection, merely for the sake of what is termed effect; and ornaments are *actually constructed* instead of forming the decoration of construction, to which, in good taste, they should be always subservient.'

A glimmering of the truth here enunciated had led the present writer to remark, under the head, 'Principles of Architectural Composition' that 'the object in architectural enrichment is not to show the ornament, but to enrich the surface;' but it was reserved for Mr. Welby Pugin to see it clearly and to state it fully. It is in propriety or fitness that the condition of delight which Sir Henry Wotton claims as one of the three conditions of building well, that architecture consists, and not in inconsistent devices.

The readiness of the world to accept the shadow, outward presentment, or even mere colour, for the substance, architecture, of which the true embodiment is construction, has made it the aim and pretence of the student in architecture to be an artist rather than a constructor, instead of grafting the artist upon the constructor. In the practice of the law the graces of oratory are taken to be of value only when supported by the sound learning of the lawyer; and in the practice of architecture the taste of the artist ought to be held merely ancillary to truthful disposition for structure and service.

* * * * * *

The use of unfitting materials on the other hand, or the employment of fitting materials inappropriately, leads almost certainly to incommodiousness, infirmity, and offence, or some of them. The bearing towers of suspension-bridges are commonly built of masonry, and being so built are of necessity massive, and being massive they tend to narrow if not to obstruct the way,—the necessity of the construction in most cases requiring that the towers shall intercept the footways, whereby the pedestrian is compelled to take the carriage-way; or for the same cause the way is narrowed if it be but one, as in a foot-bridge. In the Brighton jetty, conventionally called the Brighton pier, the substructure of the bearing towers is of timber in piles, upon which are raised trestle-like frameworks—standards, they may be designated,—and these are made to present the outward form of towers, as of masonry, by casing them with cast-iron plates to that effect, and as if to keep up the false character thus given to the standards, they are so arranged in plan as to obstruct the way along the floor of the jetty.

Cast-iron in its proper character, and in the forms which the duty to be imposed requires it to assume, would not be more inappropriate as the material of a superstructure upon piles of timber, than a tower of masonry is; and an open structure well composed of cast-iron to form trestle-like framework, would, in the case of the Brighton jetty, have left the bridged way wholly unobstructed and convenient for use.

At Rouen there is, over the Seine, a wire-rope suspension-bridge in two bays; the ropes are anchored at the banks and carried over a bearing structure which is founded on an island in the middle of the river. In this case the substructure of the bearing tower, if it may so be called, is, properly enough, and as it conveniently might be, of masonry; but the superstructure is, as to the main supports of the suspending ropes and their load, in fact of cast-iron disposed as columns about the piers of arches; so that the iron structure takes the appearance of a structure of stone, whilst the proportions are those appropriate to the stronger material of which it is, and not of the weaker material of which it pretends to be. The result to the eye is what might be expected. The bearing structure, which, being of iron, is sufficient to carry the bridging way, pretending to be stone, presents the appearance of excessive weakness; while as cast-iron, properly disposed with reference to the duty required of it, the standard would have been not only strong enough, but it would have appeared to the eye to be so.

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'In architecture, as in all other operative arts, the end is to build well.' But, with whatever limitation in his own mind Sir Henry Wotton may have made that declaration, the conditions of well building declared by himself, give a much wider meaning to it than the words are ordinarily taken to convey. Architecture in its broad and catholic sense admits of no limitation—it is subterrene as well as superterrene, formative as well as structural, and includes the general disposition of a site as well as the particular arrangement of the parts into which it may be divided. It is thus applicable to towns, or aggregations of buildings, as such, as well as to the individual buildings which go to make up the town, and ought to be applied in such manner that the general result, in building a town, shall be in accordance with the conditions, and that they shall be fulfilled in the aggregate as completely as they are required to be fulfilled in each particular building which may go to compose it.

In the choice or selection of a site for a town, intrinsic circumstances,—some peculiar advantages in a commercial, or a merely pleasurable, or it may be indeed a military point of view,—commonly determine the general question, and impose upon the architect to fit it in all particulars for the contemplated purpose. Whether the site have the advantage of railway communication, or not, easy access by carriage-roads must be provided; which roads must be laid out and set out with such inclinations proper for use as are attainable; bridges and culverts must be built to carry the roads over streams and gullies, and they must be cut, formed, drained, bottomed, and metalled, or otherwise paved; quays to the river or the harbour must be arranged and formed, or embanked and constructed,—encroaching upon the tideway, or widening the waterway, as the case may require; or, in the absence of natural facilities for navigation, it is a question for consideration whether artificial navigation can be obtained, and how and in what manner the arrangement of the site may be modified to render it available, or whether a railway may not be preferable to any other mode of giving commercial access to the

* Adam and Chas. Black, Edinburgh. 8th edition, 1853.

town; the site of the town must be drained, both as regards water in the ground, and surface-water, and the soilage must be taken off in a fluid state; water must be led to, or be raised by artifice within the site of a town, and accumulated in reservoirs at such levels that it may pass freely from them to all the parts of the town, and to the highest contemplated building in it. In the distribution of the parts of a town, not only are the requirements of the community as such to be considered, but the particular requirements of every class of a community ought to be provided for. There should be public markets and bazaars, and there should be also provision made for shops and warehouses, from which those who may choose to take their supplies may obtain them without recourse to the public markets. There may be within every town exclusive gardens, as in squares for the use of those who, dwelling around, may undertake to maintain them for their own use; but there should be certainly places as gardens, maintained at the public expense, open to the general use for the resort and recreation of men, women, and children, of whatever class, as well as parks or pleasure-grounds in the environs for general pedestrian, equestrian, and carriage exercise and open-air enjoyment. Streets, squares, and public places should be disposed upon the site with regard to light, aspect, and ventilation; and sites for all requisite public buildings, sites for the requisite varieties of private dwellings, and places for storing, manufacturing, and commercial buildings and establishments, according to their kinds and requirements, are to be provided and arranged, and so provided and arranged as to produce the greatest possible general convenience, as well as to be capable of producing private benefit. Tow rds effecting these objects everything likely to be offensive should be placed to leeward, having regard to the prevailing winds. The relative levels of the lowest floor of buildings in every case to the drainage level should be settled, and provision made for the ventilation by legitimate means, of the drains of every building, so that it be not left to chance, or to the ignorance or caprice of individuals in building in detail, whether the town may be pleasant and wholesome, or be the seat of discomfort and disease. * * *

In laying out a town, there need be no mere lounging-places provided, such as the paved area of Trafalgar-square in London, or as the *Place* so common in the towns and cities of the continent. Markets should be provided for in sheltered and inclosed buildings, and not be held in a *place*; and a more than equivalent for the *place* or even the village green ought to be provided for outdoor recreation, and, it may be, rest; but wholly irrespective of business. To this effect plots of from five to ten acres each, making in all not less than one-tenth of the whole area, should be reserved in laying out a town, or in adding to a town; such plots being so disposed as not to be more than a short half-mile apart, or so that there shall be one such plot within less than a quarter of a mile (a sufficiently long walk at once for a child, or for a woman, or a girl carrying a baby) of every domicile; and every such plot inclosed, but accessible on every side, and laid out in the best manner to make it a pleasant resort at all times for men and women seeking rest or healthful recreation, and as a play-ground for children. With such a provision in a town, idle men and boys may be reasonably required by the police to 'move on;' and with almost equal advantage to children and to the community at large, the trundling of hoops in the streets may be prohibited; whilst river or seaside quays for business, or terraces for pleasure, need not be the permitted haunts of thieves and beggars. Out of a ten-acre plot (the size of the whole area of Russell-square in London,—and about that of Lincoln's-inn-fields, up to the inclosures before the houses), one acre disposed in four distinct quarters of an acre may be assigned to the four essential requisites of every building area in a town—a church, a school, a library with reading-rooms, and a building to contain baths and washhouses; one at each of the four corners of the Town-Garden, in its own quarter-acre plot, and each communicating directly with the garden as well as with the streets, by which, if houses or other buildings front towards it, the garden should be belted, without taking them out of the ten-acre area. The town-garden need not supersede the square and its garden, which may be formed, and the garden maintained in all its exclusiveness, with great public benefit, wherever the prospective demands of a future population may seem to require squares in connection with the streets, by which and by the buildings fronting to them, the greater part of the whole area will certainly be covered. Nor need the town-garden vie with the square-garden in the relative extent of its plantations, or in the picturesque disposition of its paths. It should be laid out with broad walks, and hardily-turfed lawns; it should have a fountain, and trees should not be wanting; upon the whole, more like Hyde Park, the Green Park, and the public grounds of the Regent's Park, than like the too elaborately beautiful grounds of St. James's Park. The town garden should not be too delicate for cricket and quoits; nor should it be supposed to render the suburban park a superfluity: the town-garden for children in the day, and for work-day evenings for men and women, and the park for holidays. * * * *

Until within the present century, the common sewers of London received surface-water alone. Cloacal matters were not admitted into them, but human ordure and other *dejecta* fellor were thrown into cess-pools dug deep in the ground; and as London in the eighteenth century hardly extended beyond the limits of the dry gravel bed, the fluids were in a great degree absorbed, and the more solid matters were removed under the name of night-soil by hand-labour, and carried away in carts and applied as manure. But as the clay land became building land, and as the water-closet came into general use, the gravelly subsoil could not take up the increased quantity of fluid matter, and the clays, of course, refused to receive them at all; so that it became necessary to provide for the discharge in a fluid state of the matters dejected all together. This is done, so far as it is done, by drains into the common sewers, which have thus become cloacal vents, as well as conduits for waste and surface water. As more capacious sewers are found necessary for this double duty, such have been built, and are constantly in course of building, and at such depth that houses may be relieved by their drains of waste-water, and of refuse soluble in water, while the roads are kept drained by the same conduits of their surface-water. The result of such deepening, however, is, that to a large extent the outfalls of the sewers are below the level of high tide in the Thames and its confluent creeks; so that the commingled waters in the sewers are penned back to await the ebb, when the sand, silt, and other heavy and insoluble matters which the surface-water brings from the roadways, deposit and form a concrete which no force of any backwater will wholly remove and carry out at the reflux; and this it is which constitutes the great difficulty in relieving London, and in providing for the discharge of its cloacal refuse—whether for use as manure, or into the river as waste—so much below London, seaward, that it shall not return with the tidal flood to or within the inhabited area. A separate system of drains at the higher level, for the surface-waters, would discharge them with their heavy but inoffensive accompaniments from over three-fourths at least of the whole metropolitan area into the river at high tide, from which the latter return in the valuable form of sand and gravel; but it may be said to be now impossible to revert, and to form a separate system, so many places have been laid out and built upon at low levels upon the faith that what is permitted is entitled to protection. Nothing remains, therefore, but to continue the present abominable condition of London as to the discharge of its cloacal refuse; or to make tunnelled ducts for the commingled sewerage at a depth below the lowest level to be relieved—and practically very much below even that level—and the constant employment of costly artificial means for raising a most unnecessarily large quantity of matter, fluid and solid, from such low level to a level high enough to allow of their discharge without offence; or, as a further alternative, by separating the heavy and insoluble matters from the commingled fluids before they pass down into the low level ducts, where these alone may be very easily dealt with.

The existing practice is condemned, and judgment has been passed upon it, but execution is delayed for want of a feasible scheme for a plan by which to supersede it. Scores of schemes professedly to that effect have been prepared and submitted to the Metropolitan Commission of Sewers in a foolishly invited and unwisely answered competition, but none of such schemes were thought by the commissioners for the time being likely to effect the object sought in an efficient and satisfactory manner. Failing in a general competition, which had, nevertheless, produced schemes from some men of large experience in sewering, the Commissioners of Metropolitan Sewers instructed their chief surveyor, whose experience is understood to have been that of a supervisor of railway works, to devise a scheme; and he produced one which overcomes none of the inherent difficulties of the case, whilst it presents new ones of its own creation. No available scheme has yet been promulgated for separating the heavy and insoluble matters from the fluids before the precipitation to a deep level of either; and it is to this object probably that attention must be directed. But speculation upon the mode by which success may be attained in a particular case is not matter for an encyclopædia; our object is to show, by the miserable example of London, what ought to be avoided, as a mode of indicating the more clearly what is to be aimed at in providing for the relief of a town as a matter of architectural practice. * *

Reverting, however, to the city itself, it may be remarked, that under a crushing despotism, commodiousness and delight were firmly established in the capital of France, when its ancient limits were to be extended, by a broad belt of almost park-like avenue being formed upon the site of the demolished fortifications; whilst the civic body that built an obstruction,—which is by the same body still retained,—upon the most crowded thoroughfare in Europe, wherewith to exercise their useless and now unmeaning and absurd power of shutting a door in the sovereign's face—whilst the corporation of the City of London, in the plenitude of their freedom, when they demolished their city walls and filled up the moat with the rubbish, covered the new site so obtained,—not with broad avenues for commodiousness and delight,—but with lanes, courts, and alleys; unless, indeed, Houndsditch is to be called a street. Smithfield might have been a park, or at least a garden connected with Tower-hill by an equivalent for the Boulevards of Paris, at no cost but that of a little self-restraint on the part of the corporation. Fleet-ditch might have been converted into a dock with broad quays locking into the river at the south, as the Grosvenor-canal further west now does, and capable of being extended inland as necessity might dictate or convenience require, and so as to deliver fuel and other heavy goods east and west, to the protection of the heart of the town from the heavier traffic north and south, to the present time and for ever. Elevated viaducts thrown over the valley of the Fleet would have connected the main lines of street running east and west; so that the means of personal communication would have been uninterrupted by, and have left uninterrupted, the trade of the lower parts of the sides of the valley and the commerce upon the quays of the dock. * *

Our denial in the preceding treatise that the properties of the arch were known well enough at least to be appreciated by the more ancient nations of the East, including those of Egypt and Greece, until the arch had first become of general application in Italy, remains thus unimpeached by the recent discoveries in the valleys and plains of the Tigris and Euphrates; whilst in like manner our impeachment of the dendroid theory of the origin of those combinations of ancient works to which the designation architectural has been specially applied, receives negative confirmation from the results of Mr. Layard's admirable labours. * *

While the mathematician and the geometer have made the forms and proportions of the classical models of architecture their study, to discover and to determine the principles upon which they were established, so that by their application in modern practice, the excellent

qualities of the antique examples might be obtained, the world of British architects have occupied themselves and amused the public with discussions upon some indications of plastering and painting which have been detected upon the surfaces of some of the architectural and sculptural remains of antiquity. The subject of discussion is designated Polychromy, and the taste which deems such trifling a matter of serious interest is distinguished by the term Æsthetic.

* * * * *

The proportions found in the purer columnar architecture of Greece and Rome, of whatever style, are necessary results of the materials employed and of the mode of applying the materials in composition. The exemplars are all in stone of some kind or other, and the proportions and dispositions are such as the use of stone in legitimate structure of the sort applied would impose. Columns are placed as far apart as stone of the kind used in the case will bear over with certain safety in an architrave or lintel from column to column; such due proportion being observed between the horizontally disposed stone beam bearing over, and the vertically disposed stone column that has to support the superstructure, as the weight may require. Hence intercolumniation, or the space to be borne over, is not a matter of fancy, but of structural necessity; and the applicability of a classical columnar ordinance is structurally limited by the quality and character of the stone employed. Stone beams cannot be pierced out in length to bear over a void by any legitimate, or, what is commonly but expressively termed *workmanlike* manner; and arched structure is inadmissible in a pure columnar composition, as arches of whatever form require to be buttressed; and the essence of a columnar ordinance as a structure is in the weights being applied to act upon the column in that direction only in which the column is qualified to bear pressure; that is to say, vertically, or in the direction of its vertical axis. Marble will bear both transverse strain and vertical pressure better than freestone, and granite better than marble; and hence it is that the several parts of columnar ordinances in the works of the Greeks are more massive in their proportions when freestone is used, and lighter in the examples in which marble is employed; and the same relation will be found to exist between heavy and light proportions in the Egyptian temples. It is not according to their respective dates, but according to the material employed in the structure, that the proportions of the parts to each other are heavier or lighter,—the structure is more condensed or more drawn out as sandstone or porphyry is the constituent material of the building. It is the same with the better works of the Roman period; that is to say, in the composition of the columnar ordinances of their sacred structures; and the Romans indulged in the use of almost every kind of stone available for the purpose in the columnar ordinances applied to their temples.

Thus out of truth in structure, having reference to the material employed, grew the forms and proportions found in the classical exemplars of columnar architecture, stone being the material of the structures, and the capability of the stone to bear and to bear over giving the limit to the columns, and to the parts required to bear over, and thereby prescribing the proportions of the parts to each other, and to the spaces between the bearing parts. To falsehood in structure are attributable the failures to reproduce in modern compositions the admirable effects found in the columnar ordinances of the Greeks and Romans in which truth prevailed. Proportions permitted by marble are repeated in tender freestone, and this failing, foreign substances and unworkmanlike tricks of handicraft are applied to cheat the sense; but the eye refuses to be deceived, even if the structure endure. There may be sufficient strength in reality, for the effective material employed may be timber or iron, or other substances capable of yielding the required result in strength with far slighter proportions than stone of any kind truthfully applied will permit; but a tutored eye will detect the weakness in effect; and not unfrequently the trick is exposed to the common observer by some failure in the means adopted in the case.

Out of truth in structure, and that structure of a very inartificial sort, grew the beautiful forms of the admirable proportions found in the works of the Greeks, and out of truth in structure, with the strictest regard to the necessities of the composition and to the materials employed, —and that structure of a sort as full of artifice as the artifice employed is of truth and simplicity—grew the classical works vulgarly called Gothic, but more characteristically designated Pointed, from the form of the arch which is the basis of the style. But the classical columnar degenerated into the Italian of the *cinque-cento*, in which columns and their accessories are constructed as ornaments, and are no part of the structure as such with which they are mixed up, or to which they are affixed; and the classical Pointed fell into desuetude, or was found only in a debased connection with the Italian—picturesque at times, but more commonly grotesque, and never with any claims to decent bearing.

Truly, however, the purposes of modern life are not fully answered by either of the grand and ruling styles—the classical columnar of the Greeks and Romans, and the classical Gothic or Pointed. They both had their birth in those frailties of man which lead him through devotion to superstition, and in structures intended for the worship of the unknown God, the noblest results of both styles were and still are exhibited; and neither the classical columnar, nor the classical pointed bends itself, or allows itself to be bent to secular purposes without loss of both truth and beauty.

Doubtless there is much to admire in many of the productions of the Italian school of architecture, from the *cinque-cento* period down to the present time; and many recent works in the pointed style, and some in the mongrel manner that arose out of its debasement in connection with the Italian, exhibit, if not originality, at the least careful copying.* Copying, with an affectation of originality, indeed, is carried to such an excess in modern English practice, that mere monstrosities are sought out to be copied. Wearied with building spires upon the towers of churches of such reasonable proportions that they may at once please the eye and be safe as structures, recent practice has set up in London and its vicinity several offensively acute, and dangerously poised erections, as spires. Monstrous dwarf towers, having the appearance of wind-mills without arms, almost alternate with the feeble spires, and, consistently enough, the natural order is commonly reversed in placing these things; towers are set up in the plain, and spires are erected on the hills.

The works of living men may not be dealt with unless it be to praise them; and thus there are but few recent works in London, or elsewhere, within the personal knowledge of the present writer, which can be referred to in this place in illustration of the practice of the day."

* "Mere copying, and the most servile copying, is the ruling vice of the day, and it cannot be denounced in more eloquent language, or in more just terms, than it has been done in the following passage by an eminent person, a distinguished member of his sect in England:—'We have almost canonized defects, and sanctified monstrosities. What was the result of ignorance or unskilfulness, we attribute to some mysterious influence or deep design. A few terms give sanction and authority to any outrageousness in form, anatomy, or position; to stiffness, hardness, meagreness, unexpressiveness,—nay, to impossibilities in the present structure of the human frame. Feet twisted round, fingers in wrong order on the hand, heads inverted on their shoulders, distorted features, squinting eyes, grotesque postures, bodies stretched out as if taken from the rack, enormously elongated extremities, grimness of features, fierceness of expression, and an atrocious contradiction to the anatomical structure of man,—where this is displayed, if not only allowed to pass current, but are published in the translations of sybilles, are copied into stained glass, images, and printed and are called 'mystical,' or 'symbolical,' or 'conventional' forms and representations. And this is enough to get things praised and admired, which can barely be tolerated by allowance for the rudeness of their own age. We have seen representations of saints such as we honestly declare we should be sorry to meet in flesh and blood, with the reality of their emblematic sword or club about them, on the highway at evening. And because these were the productions of an *age* eminently Catholic, they are considered as the types of an *art* equally so. But religious art does not look to time, but at nature, which changes not, and at religion, which is equally immutable. To make rude carvings, because the buildings on which they are placed is Norman, or to make a stiff design because the glass is framed in early English tracery, may be all quite characteristic, but it is not artistic. The object of all art is to speak to the eye, and, through it, to the feelings; and the object of religious art is consequently to excite, through the sight, religious emotions, adequate to the subjects or persons represented."

TO FIND THE STRENGTH OF WROUGHT IRON-PLATE GIRDERS.

IN a former paper on this subject (p. 646), we showed how a formula might be obtained for calculating the weight which may be safely laid on a girder: we will now further elucidate the subject by applying the formula to a few examples.

The equation which we obtained was as follows:—

$$w = \frac{4f \times (CN)^2 \times (2l \times AB + \frac{2}{3}s \times CN + 4a)}{l}$$

f being found from the equation, $f \times CN = 8$ tons. It must be observed that f is not a constant, but varies with the depth of the girder so as to make $f \times CN$ a constant.

This value of w can be simplified by substituting for f its value, and the formula then becomes,

$$w = \frac{32 \times CN \times (2l \times AB + \frac{2}{3}s \times CN + 4a)}{l}$$

w being the weight in tons which may be safely laid on the centre of the girder, and $2w$ is the weight which may be safely distributed over the whole length.

EXAMPLE 1.—Let CN = 6 in. AB = 5in. l = 10 ft. = 120 in. $s = \frac{1}{2}$ in. $t = \frac{1}{2}$ in. a = 1 square inch,

then $$w = \frac{32 \times 6 \times (5 + 2 + 4)}{120} = 17{\cdot}6 \text{ tons},$$

or the girder will safely bear 17½ tons laid on the centre, and 35 tons distributed over the whole length.

EXAMPLE 2.—Let the length of the girder be double that of the last, all the other dimensions remaining the same, then l = 20 feet = 240 inches,

$$w = \frac{32 \times 6 \times (5 + 2 + 4)}{240} = 8{\cdot}8 \text{ tons},$$

or the strength is half that of the former example.

EXAMPLE 3.—Let the depth be doubled, all the other dimensions remaining the same as in the last example; then CN = 12 inches,

$$w = \frac{32 \times 12 \times (5 + 4 + 4)}{240} = 20{\cdot}8 \text{ tons},$$

which shows how much more strength is gained by increasing the depth than by increasing any other dimension, a principle which holds in beams of every description.

For the benefit of those readers who are unable to interpret an algebraical expression, we will express the value of w in words, and thereby enable any persons who are only acquainted with the first four rules of arithmetic to apply this formula for themselves.

1. Multiply the width AB in inches by twice its thickness.
2. Multiply the half-depth CN in inches by two-thirds of its thickness.
3. Multiply the area of section of one of the angle irons in square inches by 4.
4. Add together all the preceding results, and multiply the number thus obtained by 32 times the depth CN in inches.
5. Divide this last result by the length of the girder in inches, and this gives the weight in tons which may be safely suspended from the middle of the girder.

E. W. TARN.

THE NEW PINAKOTHEKA, MUNICH.

MUNICH, OCTOBER 26.—The opening of the new Pinakotheka, which took place yesterday by King Ludwig of Bavaria, has been hailed with universal satisfaction. This new building is destined, like the Vernon Gallery in London and the Luxembourg at Paris, for the exhibition of the works of painters of the *present* century. But, while these establishments are only devoted to *national* artists, the Munich Pinakotheka is one open to the artists of the whole world. The following is a brief description of the building, whose architect is *Ober-Baurath* Voit. The upper story contains six large halls, which occupy the middle of the building, five minor ones on the south side (both lighted from above), and fourteen cabinets on the north side, the latter with side windows. A smaller double staircase on the outside of the building leads to a high entrance-hall, and thence one of larger dimensions leads to the first saloon, which contains four large vases, three of porphyry and one of malachite, and but one picture, the life-size portrait of King Ludwig, painted by Kaulbach. The succeeding four saloons are remarkable for some great pictures;

the first, "The Flood," by Professor Schorn (left incomplete at his death); the second, "The Destruction of Jerusalem," by Kaulbach; the third, "The Entrance of King Otto into Nemplin," by Peter Hess; the fourth, an "Altarpiece," by Henry Hess. Besides these, each hall contains a variety of other pictures, amongst which we specify the large architectural pieces of Ainmüller, Bayes, and others. Many of them are pictures of great size; still there is no overcrowding which could mar the quiet contemplation. The first saloon contains exclusively the landscapes of Rathmann, and presents a quite new and original arrangement of picture-galleries. It is based on the principle that pictures are not only to be placed in the most favourable light, but that such most favourable light is to be produced for them. If light falls (independently) in our eyes, it darkens the object which is to be seen; and therefore if the eye is protected against the influence of light, the objects viewed will appear the more clearly, especially if the rays be directed thereto in an advantageous direction. The top-light which illumines the Rathmann saloon of the New Munich Pinakotheka is shut up from the beholder by a screen supported by columns, and running the whole length of the room, falls only on the wall on which the pictures are suspended. The spectator stands, therefore, in the dark, and looks at a double light, as it were, on one real and the other painted. Because it is, after all, *light* in all its various appearances and fractions (*Brechungen*), which constitutes the soul of those Grecian landscapes depicted by M. Rathmann. During his long stay in Greece (by order of King Ludwig), he studied that country thoroughly, and morn and eve, noon and night, are seized with genial penetration. His *ne plus ultra*, however, is the picture of the Bay of Aulis, where the dazzling sun of an hesperion afternoon strikes our eyes as amazingly fine and effective. This saloon is on the west side of the building, and is followed to the right by the smaller saloons on the south, where pictures of smaller dimensions are placed. Pictures of Schadow and Zimmermann are to be seen here. The next saloon contains German and some foreign works, as of M. Caignet, at Paris, Ley, of Holland, &c. In the following third saloon, Kaulbach has reproduced those pictures in oil which adorn the outside of the building in fresco, whereby they are twice protected, and sent down to futurity. The cabinets of the north side contain smaller works, still of great masters amongst our contemporaries, Hess, Schrondalf, Rathmann, Quaglio, &c. amongst which is also one of Wilkie. Especially interesting is the observation of the progress made by artists in their successive works, the influence of master upon the pupil, and other art and mind concatenations. A German contemporary concludes his report with these words:—"Much is yet to be done; so go it!"

PROVINCIAL NEWS.

Spalding.—A monument has just been placed in the nave of Spalding Church, Lincolnshire, to the memory of the late Mr. Theophilus Fairfax Johnson. It consists of a black marble slab let into the floor, with an incised cross in the centre: around the edge of the slab within two lines runs the inscription forming a border to the whole. Within the cross is the sacred monogram IHS. It is the work of Mr. Lawrie, of Downham Market. A reredos is now being erected in the chapel of Pinchbeck West in encaustic tiles by the same hands.

Bildeston.—A new school has been erected here. The school-room measures 50 feet by 17 feet, with a class-room, forming a south transept, 12 feet by 11 feet. It is built in the style of the thirteenth century, with a small bell-tower, surmounted with a gilt cross. It is feared that there will be a deficiency of light in consequence of adhering too closely to style.

Cliffe.—While at Rochester with the archæologists we visited this church, and remarked to our readers that it required a little of Archdeacon Croft's care. We are pleased to be now informed that the archdeacon, at his own cost, is extensively repairing the chancel (it is 50 feet in length by 20 feet, and is 26 feet in height) under the direction of Mr. Austin, of Canterbury. Better late than never.

Lamberhurst.—The first stone of an infant school was laid on Friday, the 21st instant, by a young son of Mr. W. J. Morland, by whose liberality the whole cost of the building now commenced will be defrayed. In consequence of the bad state of the weather, but little ceremony was observed on the occasion. The buildings will comprise a school-room, capable of containing about eighty children, together with a residence for a mistress. The materials used will be bricks and stone. The site of the building is peculiarly good: it is just removed from the road, and also much above its level, and around it are groups of fine elms. The architects are Messrs. Caveler and Hooker, of Tunbridge Wells and Margate.

Ventnor.—The gas company have announced their intention to reduce the price of gas from 8s. 4d. to 7s. 11d. per thousand feet, "to encourage the consumption of gas in the town, and to anticipate the wishes of the public." "The organ of hope," says the *Hampshire Independent*, "must be very largely developed in these proprietors if they imagine that such an extremely homœopathic reduction as this can produce any such results." Besides, it rather too much resembles the 11½d. dodge of the haberdashers to be acceptable.

Oxford.—Application is to be made to next quarter sessions for the ground on the west side of the castle for the purpose of erecting a new militia armoury. The armoury in course of erection will, it would appear, be taken down.

Reading.—St. Lawrence's parochial schools were opened by the Bishop of Oxford, on Tuesday in last week. They afford accommodation for 280 boys and girls at desks and in galleries, agreeably to the requirements of the Committee of Council on Education, in two schoolrooms, each 54 feet by 18 feet, and two rooms, 20 feet by 14 feet. The roofs are open. The materials are flint, rubble, and Bath stone dressings, in keeping with the existing remains of the Abbey, on a portion of which site the buildings are placed. The style is Early English. They were erected by Messrs. Biggs and Wheeler, of Reading, under the superintendence of Mr. John Billing.

Bishopsteignton.—A new chapel of ease has been erected by subscription at the hamlet of Luton, in this parish. It consists of chancel and nave in the Middle Pointed style, with red tiled roof, and the walls are of grey limestone, with Bath stone dressings, &c. The chapel will accommodate about 120 persons. The nave is fitted with open benches. The plans were prepared gratuitously by Mr. W. G. Tozer, of Teignmouth, and the building was erected by Messrs. J. Rowell and Son, of Teignmouth.

Cardiff.—The contract for forming the roads and drainage to the National Freehold Land Society's estate, at Canton, near Cardiff, has been let to Messrs. James and Price, of this town, who are progressing rapidly with the works.

Dunstall.—We are asked to state that the contractor for St. Mary's Church and school was Mr. George Thompson, of Derby. There is also a parsonage-house with out-offices, which were included in same contract.

Gainsborough.—A stained glass memorial window, by Wailes, has just been given to Trinity Church by Mrs. Sandars. It consists of three lights, and is placed at the end of the north transept. The centre light contains two coloured medallions, representing the burial and resurrection of Christ. Each of the side-lights is ornamented with angels holding scrolls.

Hunslet.—The new church of St. Jude, for the district of Pottery Field, was consecrated on Wednesday in last week. It consists of nave, aisles, chancel, and sacristy. A north-west tower is contemplated. The style is Middle Pointed. The east window is one of five lights, and the side-windows are of two lights. The church will seat between 600 and 700 persons. The cost, including Hazard's patent heating apparatus, is estimated to have been about 2,350*l.* The district has now to be furnished with a parsonage and schools with master's house.

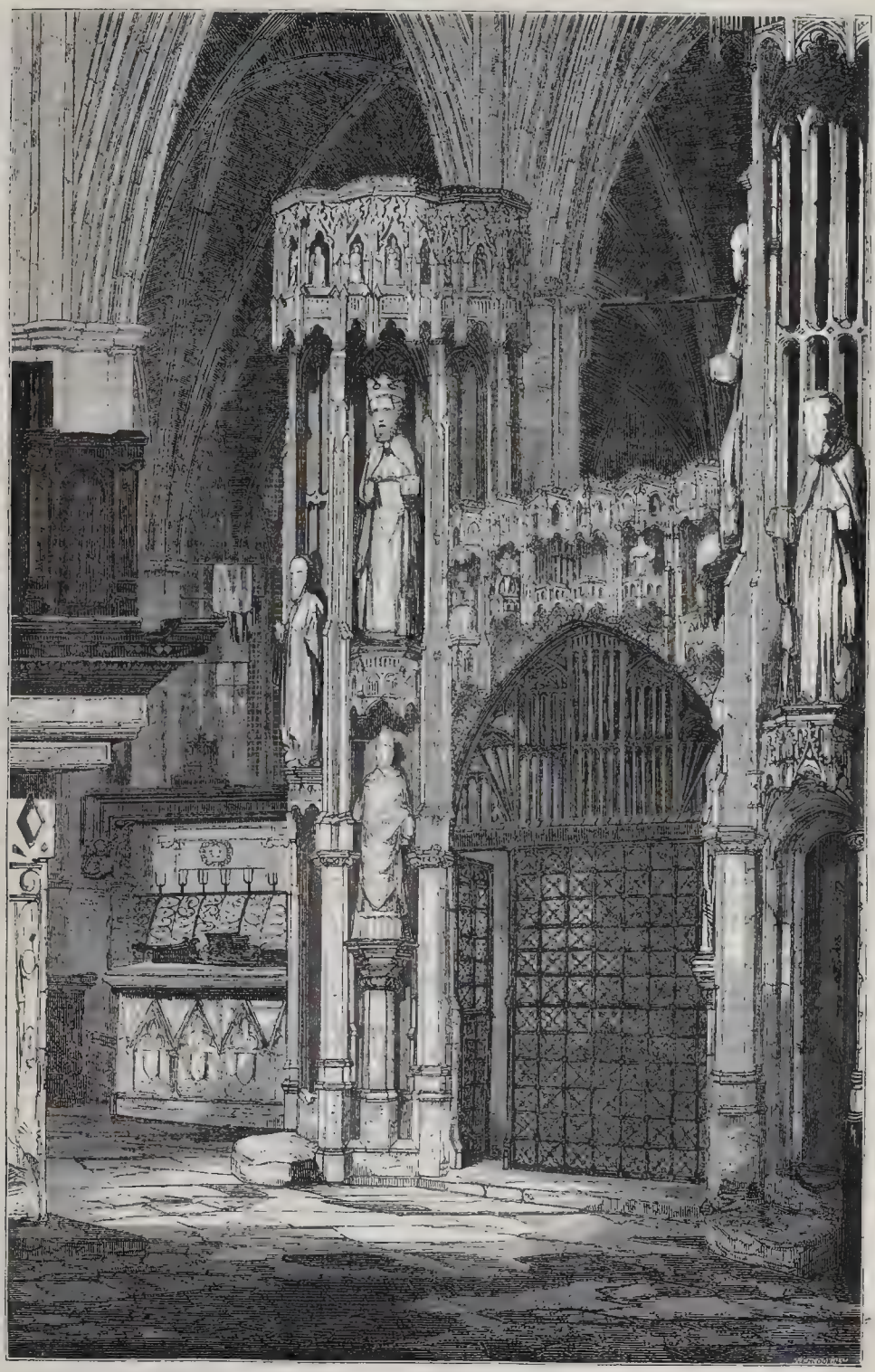
THE IRONWORK OF HENRY V.'s TOMB, WESTMINSTER ABBEY.

For many years the beautiful gate of which we now give an engraving, was allowed to rest in the darkness of St. Blaise's Chapel, with other examples of ancient ironwork; amongst them the beautiful screen of the tomb of Queen Eleanor, which is now also most properly placed in its original position. There are still several specimens of ironwork lying in the Blaise Chapel, which we hope soon to see restored. The improvement caused by the restoration of the ironwork of the chapels of Edward the Confessor and Henry V. is very great.

The engraving shows (on the left), part of the shrine of Edward the Confessor, which, though now much mutilated, still enables us to form an opinion of its former richness and beauty. This shrine was erected by Henry III. on the canonizing of Edward, king of England, by Pope Alexander III. who caused his name to be placed in the catalogue of saints, and issued his bull to the Abbot Laurence and convent of Westminster, enjoining that his body be honoured here on earth, as his soul is glorified in heaven. Before this shrine was formerly kept a lamp continually burning, on one side of which stood a figure of the Virgin, wrought in silver, which, with two jewels of immense value, were presented as an offering by Queen Eleanor. On the other side, stood another image of the Virgin, wrought in ivory, presented by Thomas A'Becket, Archbishop of Canterbury. To this shrine Edward I. offered the Scottish regalia, and the coronation chain, which is still preserved. Alphonso, about the year 1280, offered him the golden coronet of Llewellyn, Prince of Wales, and other jewels. It is said that Henry IV. being on his knees here, was siezed with apoplexy, and for speedy relief removed to the abbot's house, when coming to himself he could not recollect where he was, but upon inquiring, was told the room bore the name of Jerusalem, to which he replied,—"The Lord have mercy upon me, then, for here I must die," having been formerly told by a magician that he should die at Jerusalem. It is painful to witness the damage which has been done to this and several of the surrounding monuments, which were originally enriched with so much cost and art. Recent discussions as to their restoration will be remembered by our readers, and found in previous pages. The stonework of the Confessor's shrine is hollow within, and now incloses a large chest, which Mr. Keep, soon after the coronation of James II. found to contain the remains of St. Edward; for being broken (it is said) by accident, he discovered upon turning up the bones, a crucifix richly ornamented and enamelled, and a gold chain 20 inches long, both which he presented to his Majesty, who ordered the bones to be replaced in the old coffin and inclosed in a new one made very strong.

Queen Eleanor's beautiful tomb and effigy are partly seen in the engraving: the stonework is much decayed, the armorial bearings on the side of the tomb being barely discernible: they were the arms of Castile and Leon, quarterly, and those of Ponthieu hanging on vines and oak-trees: round the metal verge is the following inscription—"Here lies Eleanor, formerly Queen of England, wife to Edward the 1st."

The chapel of Henry V. the hero of Agincourt, which forms the prominent feature in the engraving, was erected in the reign of Henry VI. Henry V. died in France in the tenth year of his reign, and in the thirty-fourth of his age, and was brought here and buried at the feet of Edward the Confessor, in a place set apart for the keeping of relics. His queen erected a monument over him of grey marble, whereon was placed his effigy, the body whereof was heart of oak, and the head beaten silver, as were the sceptre and other signs of royalty. The metallic parts of the monument were taken away, the vergers tell us, "in the time of the troubles." We have no means of knowing this exactly, but it is certain that the gate of the tomb and the canopy of Queen Eleanor were taken down at one of the coronations within the last fifty years, and stowed away as mentioned, and no doubt many of the other mutilations may be attributed to similar events.



HENRY V.'s TOMB, WESTMINSTER ABBEY.

"PROPOSED INSTITUTIONS AT KENSINGTON.

MR. HENRY COLE, C.B. has written a pamphlet (published by Chapman and Hall), "On the expediency of carrying out the proposals of the Commissioners for the Exhibition of 1851, for the promotion of institutions of science and art at Kensington, rather by the public themselves than by Government." The purpose of the pamphlet is sufficiently explained in its title, and the following quotation shows the course of action which the writer thinks might be adopted.

"'A charter' should be granted to a public company, conferring the privileges of carrying out the erection of the buildings, and the decoration of them; the laying out the grounds with terraces, fountains, and sculpture, and the formation of certain collections, including all that ought to be comprehended in a National Gallery of Painting, Sculpture, and other decorative Arts. As respects the few paintings already national property, the Government might lend them, and agree to pay a fair rental for the space occupied by them. The Company should be the sole judges of the scale of its expenditure and the execution of the works. When the structures and collections were sufficiently complete to be opened to the public, the Government, in return for its assistance, should have the right to determine whether the public should be admitted gratuitously or by payment. If it were determined gratuitously, then the whole works would be purchased for the nation at a fair valuation, upon principles previously settled. If the Government declined the purchase, then the public should be admitted on payment, so successfully tried at the Exhibition of 1851, and the Company would undertake the future management, Government still reserving the right of purchase at the expiration of certain periods of time. The Company might also contract to provide buildings for private institutions. Space in the buildings might also be provided to exhibit the existing Government collections of Sculpture, &c. under certain conditions; but these at present form a small part of what systematic collections of Art and Science would become by the energies of private enterprise, which would create galleries as extensive as those of the Louvre, as systematic as those at Berlin, and as rich in illustrations of the decorative Arts as the Historical Collections in the Zwinger and Green Vaults at Dresden."

Without denying for a moment Mr. Cole's assertion that private enterprise works more efficiently than Government in carrying out such projects, we cannot admit that Government should be liberated, on this account, from the onus of providing great institutions for the advancement of the public taste and instruction in art or science. Once let the public admit such a principle, and we should soon find a falling off even in the aid granted to the few institutions already established, such as the British Museum, the National Library, and the National Gallery. We would offer no objection to the incorporation of a public company to provide us with picture galleries, collections, and other works conducive to public improvement and recreation, but we must still hold the Government to the task of providing a proper and sufficient national gallery, national museums, and national schools of art.

PROPOSED STATUE OF PRINCE ALBERT.

THE Lord Mayor of London is bestirring himself with a proposal to erect a monument of the Great Exhibition of 1851, in the shape of a statue of its president, Prince Albert; and a meeting by invitation is to be held at the Mansion House on Monday next, the 7th inst. Without entering into the question which has been started as to the wisdom of the proposal at present to erect a statue of his Royal Highness, we trust it is not a mere pretext for giving a job to some favourite sculptor, as was intended in the somewhat incongruous idea, which we first exposed, of erecting "Richard Cœur de Lion" as the representative of the Great Exhibition. We ourselves also then pointed out that if *any* statue were to be erected as a memorial of that unprecedented event, the Prince Consort was the proper subject; but his lordship the mayor appropriates the suggestion as his own. To this, however, we offer no objection, but we shall protest strongly against any proceedings calculated only to add another bad statue to our list of artistic failures.

THE STAGE.

Royal Princess's Theatre.—The manner in which "The Lancers" has been produced here is highly creditable to the management. The scenery, dresses, and appointments are all perfect, and it serves to introduce an actor new to London, Mr. David Fisher, who, if he have a little good advice and take it, will prove a very valuable addition to the *corps*. The piece is a translation of the *Fils de Famille*, of which we have another version at the Adelphi. The stern colonel, made less irritable and more dignified, is exceedingly well played by Mr. Ryder. The first scene, "The Golden Sun, with Amiens in the distance," painted by Mr. Gordon, is exceedingly beautiful: the long avenue of trees on the right, recalling a picture exhibited by Lee more than once, is charmingly painted. Mr. Lloyd deserves equal praise for his *Salon*, wherein the conservatory is seen over an ornamental balustrade in the centre of the back; nor is the illusion of the scene dispelled, as is too often the case on our stage, by the arrival of a few "supers." disguised as guests. As a specimen of "getting up," the piece is perfect.

A New Theatre in London.—The *Art-Journal* says, that strange as it may seem, there is to be a new theatre in London: a company (consisting principally of French gentlemen) has been formed for the purpose of introducing dramatic performances in a somewhat new form in England. They are to consist of concerts and ballets, and to be conducted, we understand, on a large and liberal scale, to be sustained by the best singers and dancers of the continent: the orchestra alone is to comprise one hundred and twenty instruments; the leader, M. Berlioz. The house to be converted into a theatre is that mansion in St. James's-square, formerly the Army and Navy Club, and more recently a public picture-gallery. The architect is Herr Semper, whose theatre at Dresden is well known. Amongst the other artists to be employed are M. Matifat (whose works at the Great Exhibition of 1851 will be remembered) to whom has been confided the chandeliers, candelabra, and other decorations in bronze; M. Dieterle (one of the principal artists at Sèvres), who will superintend the scenery; and M. Raymond, who will direct the *papier mâché* and composition ornaments. "The theatre will be arranged to contain 2,000 persons, and there will also be spacious rooms for promenades, &c. The project is to rival all similar establishments of the world in the elegance and beauty and pure taste of the whole of the decorations: the works are to be of great cost and of the highest possible character as works of art." We shall see.

OPENING OF THE BOLTON PUBLIC LIBRARY.

THIS auspicious event took place a few weeks ago. The library has been placed in the meantime, and till a more appropriate building be either erected or otherwise obtained, in rooms at the Exchange, where a public library existed about fifteen to twenty years since, when it was discontinued. The rent to be paid for these rooms is 30*l.* a year, and they are said to be well suited to their temporary purpose. The library is in two divisions,—a lending and a reference library. The entire sum realised for the objects of the library was about 4,000*l.* Of this money there has been expended in the purchase of 10,789 volumes of books, 2,475*l.* which (including the expenses attending their purchase, carriage, &c.) is at the rate of about 4*s.* 6¼*d.* per volume: 1,450 volumes of various kinds have been presented; so that the number of books altogether is 12,239. Of these, 3,000 volumes have been placed in the lending library, a catalogue of which may be purchased for 3*d.* The catalogue of the reference library will be sold at a charge of 1*s.* Very slight progress has yet been made towards the establishment of a museum in connection with the library, which was regarded as the most essential matter in the first place; but a balance of 700*l.* remains in the hands of the treasurer to form a commencement. The erection, or at least the obtainment, of a suitable building, however, is regarded as an essential preliminary; and so soon as that is got, numerous valuable contributions already promised will flow in. The borough rate of one halfpenny in the pound is estimated to yield about 285*l.*; but no portion of this can be used for the purchase of books or specimens, as by the Act all must be devoted in providing for the safe custody and permanent security of the library and museum. Arrangements are being made, by subscription and accordant privileges, for the addition of books as they can be afforded.

At the opening, the various preliminary reports were read, and the meeting was addressed by Mr. W. Gray, the ex-mayor, and by the mayor, but the principal addresses were delivered at an adjourned meeting, when a cold collation was partaken of, the Bishop of Manchester presiding.

A SUPER-WAY FOR OXFORD-STREET.

PASSING down Oxford street the other day, I observed the immense amount of omnibus traffic going on. Now, it occurred to me that could the following plan be put in operation, it would materially decrease what is generally considered a nuisance, and give greater facilities to hasty pedestrians.

I propose to have two lines of railway, reaching from the Marble Arch to Tottenham-court-road, at a sufficient elevation over the lamp-posts, and both on an opposite incline.

1. The railway will be of a very narrow gauge, sufficient to allow of one or two persons sitting side by side in the carriages.

2. The inclination to be just sufficient to keep the carriages in a steady rapid motion, without using the break.

3. A station will be at the Regent-circus, and at which the stoppage may be made by a slight ascent.

4. The rails will be supported on a single pillar at intervals with a fork to each rail.

5. The ascent to the stations will be by circular staircases.

6. The carriages will have their wheels raised high at the sides, so that the body may sink between the rails: thus the liability of an accident by upsetting will be prevented.

7. Each carriage will have a break, so that should an accident occur, it could be stopped in a few seconds, and holding out a red flag would give warning to those behind.

8. A steam-engine will be sunk under ground at each end to raise the carriages to the higher incline over the way at the termination of the journey.

The objections are that you would bring the first floor under public inspection; but this could be prevented by a strip of linen, 2 feet wide along the line, or attached to each carriage like a screen. Also, very highly loaded waggons could not well pass under, but they must go to their destinations round by St. Martin's-lane, &c. or by Cumberland-street and Park-lane; and so few of them ever have to pass, that we need not consider the inconvenience it would occasion.

A TIME-SAVER.

THE ARCHITECTURAL MUSEUM, CANNON-ROW, WESTMINSTER.

HAVE you seen the Museum? Have you helped it? If you have not, do so at once. It is now getting into order, and is well worth a visit. Among the last things received are—the complete series of Sculptures from the north transept-windows of Westminster Abbey—very noble works; a large number of very fine Early English Bases; an Altar-tomb from Chichester, the Lady Prioress; a Slab from Bredon Church, the gift of Archdeacon Thorp to the Museum; some fine Details from Salisbury Cathedral; three Slabs from the Elgin Marbles; and also the Heads of the Horses of Hyperion; some very fine late French Work, date of Louis XIV.; a portion of the Frieze of the Temple of Jupiter Tonans; a fine Capital from the Temple of the Sybil; a Canopy and Details from the High Altar-screen, St. Alban's Abbey Church; a complete Compartment of the Altar-screen, Winchester Cathedral; a section of the Arcade from St Alban's Abbey Church; a Cast from the unfinished Work of Michel-angelo, now in the Library of the Royal Academy, &c.

Some of the examples in the Museum are *loans*, and it is to be desired that others may be so deposited.

It is proposed to open it free to workmen three evenings in each week. A complete descriptive catalogue is in a forward state, and will be useful, as the things are all arranged in the order of date, and so show the progress of Gothic art from Norman times to the present. Something is said, too, of fitting up a compartment of the Museum as a chapel, with everything complete, after the manner of the thirteenth century, to show what the chapels of that time were.

The School of Art for Artist Workmen, established in connection with the Architectural Museum, is progressing. According to the director's prospectus, "In order to promote the advance of the decorative ornamental part of architecture, and through it of architectural art, it is determined to refer to Nature. Thus, the student having copied the ornament, together with the mouldings, from an approved model in the collection, will again copy the same mouldings, but without the foliage—the foliage being then, in this second copy, taken from *living* leaves, flowers," &c.

Arrangements, too, are now being made, it is said, for giving a course of elementary lectures on architecture, sculpture, and decorative painting, to which students will be admitted free.

A book is to be kept at the museum, for the purpose of giving to architects and others an opportunity of at once finding men able to execute their works artistically.

CLOSING OF THE DUBLIN EXHIBITION.

On Monday, the 31st ult. the Exhibition of 1853 was closed. There was a numerous attendance, and a selection of sacred and miscellaneous music was performed. After the orchestral performances, the Lord Lieutenant requested Mr. Roney to be brought into his presence, and then and there conferred upon him the honour of knighthood, for his services and activity in connexion with the Exhibition,—an honour well deserved. This act being completed, his Excellency, in an audible voice, declared "the Great Industrial Exhibition of 1853 closed to the public," and in an appropriate address eulogised the munificence and spirit of its founder, Mr. Dargan, who had set his country such a noble example. After returning thanks to the exhibitors, who filled that temple of "Art and Nature" with specimens of such varied instruction and interest, he concluded by inviting the assembly to bless God for his goodness in permitting them so successfully to complete the work, and then called on the assembly to give three cheers for Mr. Dargan, which we need scarcely say was warmly responded to.

We are glad to be able to announce that the King of the Belgians has given his consent for the fine pictures by the modern Belgian artists, belonging to him, and now in the Dublin Exhibition, to be exhibited in London for a month, at Messrs. Graves's gallery, in Pall-mall.

COLOURED PHOTOGRAPHY. A NOTE.

Sir,—I have seen in the *Builder*, more than once, something of an alleged invention of coloured photography. Having years ago invented that *desideratum*—that is to say, contrived the means by which (and as far as optical and chemical facts now warrant, by which alone) views or paintings may be photographed and multiplied in all their original tints as certainly and accurately in respect of colour as they now are in respect of outline—perhaps you will kindly allow me hereby to claim this invention. Seeing no immediate prospect of leisure justly applicable to experiments on it, yet no call to abandon my natural property in it, and no legal protection in this country on terms that make it worth purchasing, I shall recur to the mediæval and seventeenth century mode of recording such a claim, after the manner of Roger Bacon and Dr. Hooke. The essentials to this process, beyond those for ordinary photography, will be expressible in these twenty-five letters:—

eeeeghhhhiklnoopprrssttty.

Of course, by this manufacture when perfected, labourers' cottages will be adorned with the handiwork of Raffaelle and Titian. Indeed, they may already, as easily as with that of Phidias or Ghiberti (only they had better be drained before either). The alleged difficulty of photographing pictures because the blues and violets are rendered as high lights, and the reds and yellows as deep shades, does not exist. It may be simply obviated by copying through an orange glass (the precise depth to be determined by experiment), taking care first to give the whole sensitive surface a very short exposure to equable daylight, because M. Becquerel discovered long ago that the red and yellow rays would *continue* pretty fast, though not so fast as the others, an action that had once been *commenced* by chemical rays. E. L. G.

THE FALL OF HOUSE IN THE STRAND.

REGINA *v.* ABRAHAM.

On Saturday, the 29th, Mr. Abraham surrendered to take his trial on the charge of manslaughter, arising out of the unfortunate accident in the Strand.

On the part of the prosecution,—

Mr. Ryland addressed their lordships, and said he had looked very carefully at all the facts disclosed in the depositions, and it appeared to him that the evidence was most conflicting and contradictory, and that it failed altogether to support the charge against the defendant. It did not even appear that the defendant was near the spot at the time the accident occurred, and, as appeared to him, the charge could not be supported either in law or fact. Under these circumstances, he considered, under the direction of the Court, that if he were to call the witnesses it would only occupy a great deal of the time of the public unnecessarily, as one only conclusion could eventually be arrived at, which was, that Mr. Abraham was not in any way responsible for the unfortunate accident that had taken place.

Mr. Justice Cresswell said, that he had also read the depositions attentively, and, unless some more evidence was to be adduced than was disclosed upon them, he entirely concurred in the view taken of the case by the learned counsel. In the first place, there appeared to be a very great contrariety of opinion among the witnesses whether anything had been left undone which ought to have been done to prevent the accident; and, in the next place, all those who seemed to think that something else might have been done, differed among themselves as to what that something should have been. It was proved also that the defendant was absent at the time the accident occurred, and there was nothing to show that there was any negligence on his part in being absent. It appeared to him that a physician might just as well be indicted for the manslaughter of a patient where three or four others were called in who thought that something else might have been done which might possibly have saved the patient's life, but none of them agreeing what should have been done, and an apothecary in the meantime making up a prescription and administering it to the patient, of the contents of which the physician was ignorant.

The Attorney-General begged that he might be allowed to state, on behalf of Mr. Abraham, that a host of persons of the greatest eminence and skill were present to testify to the high character borne by him in his profession. He thought it also right to say, that the excavation which was the cause of the unfortunate accident had been made without any proper authority, and, without his sanction, much deeper than was intended.

Mr. Justice Cresswell said, it appeared from the depositions that the foreman who had the active charge of the business under the builders was a person of very great skill, and perfectly competent in every respect. He also observed, that it was very right in the case of such a dreadful accident that an inquiry should take place, but in the present instance the law of manslaughter had not been quite understood. It was clear that the facts would not support the charge against the defendant, and it was therefore quite useless to go into the evidence.

The jury accordingly, under his lordship's directions, returned a verdict of "Not Guilty" upon each of the inquisitions.

The following gentlemen came into court with Mr. Abraham:—Sir Richard Bethell, Messrs. Tite, Donaldson, Hopper, Shaw, Geo. Smith, Bunning, Pennethorne, Poynter, Hunt, Pownall, Maltby, Ferrey, Little, Holland, Addison, Hakewill, Freud, Horne, Oliver, Nixon, Hardwick, R.A., S. Angell, W. Moseley, Flower, and Godwin.

Several important questions in connection with this matter arise for consideration, but we must take some other time to treat of them.

THE METROPOLITAN RAILWAY JUNCTION QUESTION.

A correspondent, "Help in Need," while objecting to the proposed amendment of London-bridge, by means of overhanging iron galleries for foot passengers, as after all quite inadequate to relieve the present traffic, proceeds to "trace the evil to its root" by asking what is the principal cause of London-bridge being overcrowded? The answer, continues our correspondent, is plain, "the numerous railways terminating at its Surrey end—a state of things never dreamt of till long after the bridge was finished, and which may be remedied, not by make-shift galleries, tending only to spoil the noble structure, but by diverting a large proportion of the railway traffic into the City itself at another spot; in short, carrying out the plan, more than once urged in your columns, of completing the Kent-road branch to the South-Western at Waterloo, and thence on to Farringdon-street; there to unite with all the lines north of the Thames. I make this suggestion," he adds, "conscious that *one* railway-bridge—in a *central* situation as at Blackfriars—would save the necessity and expense of building more ordinary ones, which, after all, could no more compensate the want thereof, than could the two hanging galleries."

Another correspondent, in speaking of the revival of the Mid-Kent scheme, with the Crystal Palace line to Newington-causeway as a pendant, says, "One would have thought that the widening of the existing railway and the formation of a new one (as lately granted) to the West-end would have yielded satisfaction. Railways not paying as they ought, it should ever be our aim, in making one, to turn it to best account, avoiding the isolated branch with an inconvenient terminus, and choosing, wherever practicable, the thorough or connecting line: of this description certainly would be the extension to the South Western and thence to other railways, of the Bricklayers' Arms line as before advocated in your Journal [Nos. of May 14 and July 9 and 30, 1853]. Its comprehensive character should have saved it from neglect and given it precedence over less accommodating projects; for it would afford to Crystal Palace passengers, and others too, not only a station at Newington, but one near the West-end, and it is to be hoped, ere long, in the City itself, at Farringdon-street. A view of the plan of London shows that the formation of the new street from Wellington-street to Stamford-street is *alone* sufficient to condemn a Newington-causeway terminus; for arrived at Wellington-street, better by far the stream of traffic were diverted in a westerly direction, to Waterloo-station, than be allowed to flow along the Borough main road, already overburdened, to the causeway: the two routes are all but alike in point of distance.

To come to the secret. We know that two separate lines were started from the Crystal Palace towards the West-end: the one (before mentioned) swam; the other, by Peckham and Camberwell to the South-Western at Vauxhall, sank: and to make up for this disappointment, the line 'snapping off' at the causeway was hit upon, one convenient for City and West-end alike, a '*via media*' in the reckless sense—neither this thing nor that. To the general junction, as laid down in the numbers of your journal above specified," he adds, "we are in a manner committed by the formation of the two—as yet incomplete—extensions,—to the Bricklayers' Arms and Waterloo-road: its importance grows daily more and more manifest for various reasons I could detail.

In conclusion: I write this letter in no 'un-

accommodating' spirit, whatever some may assert; but in the present go-a-head age, though I would be the last to cry '*siste viator*,' I think it high time to exclaim, '*siste projector*.'"

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The first ordinary meeting of the session 1853-1854 will take place on Monday evening, Nov. 14, when a paper will be read by Professor Donaldson, containing some remarks upon the buildings of Lille, in France, and a description of a noble collection of original drawings by the great Italian and other masters, presented to Lille by the late Chevalier Wicar, director of the Academy of Naples, particularly in reference to a series of architectural sketches, attributed to Michelangelo, with illustrations. Ordinary meetings will be held—1853, Nov. 14, 28; Dec. 12, 1854, Jan. 9, 23; Feb. 6, 20; March 6, 20; April 3; May 15, 29; June 12, 26. Annual general meeting of members only, May 1. The library is open to members from ten to five daily, between 20th of Oct. and 31st of August, excepting Easter and Christmas weeks, and on the evenings of Mondays, Thursdays, and Fridays during the session, from seven to ten. We should like to find it more used.

THE GEOMETRICAL PROPORTIONS OF GOTHIC CHURCHES.

I feel called upon to make a few remarks in reply to Mr. W. P. Griffith's criticism of my paper on "'Modern Design;" not so much in justification of myself, as in explanation. However remarkable it may be, or however incredible it may appear, it is nevertheless strictly true,—1st. That I had not seen any of Mr. Griffith's works till both my arguments and my diagrams had been drawn out and shown to several of my friends. 2nd. That it was not till some weeks afterwards that I happened to meet with the paper which the Rev. Philip Freeman wrote for the purpose of bringing Mr. Griffith's theory into notice. 3rd. That I have not even yet seen Mr. Kerrich's paper. "*After I had prepared mine*," I was told of the existence of it, but I could not make out where it was to be found. 4th. That until I saw Mr. Griffith's article in the *Builder* this morning, on my return from the north, I had never heard of any such proportions as those of mine to which he refers having been discovered or worked out, viz. *vesicas* struck upon the diagonals of squares and bases of equilateral triangles, as in the *Ecclesiologist*, plate 1, figs. 3, 4, 5, &c. I ought also to add that fig. 8, in plate 1, figs. 7, 8, 12, 13, 14 in plate 4, and the whole of the plates 5 and 6 (except fig. 6) are taken from Messrs. Bowman and Crowther's "Illustrations of the Churches of the Middle Ages;" and that with the exception of "Steyning" (from Britton), and "Itchenor" (from a friend), the remainder are from my own drawings and measurements.

I am very glad that Mr. Griffith has thought my paper worth such notice, and still more that he considers "its contents to assimilate" too closely to some others to be original; and that he refers especially to such cases as those of the churches of Wadhurst, Monk Newtown, and Garnons Town, given in plate 7, fig. 4, and plate 8, figs. 9 and 10, and to the other applications of the proportions given in plate 1, figs. 3, 4, 5, because it must necessarily call public attention to the fact of "different men arriving independently at the *same* conclusions" upon this most important subject, and confirm the supposition of such proportions—in all their *exactness*—really existing in the works of ancient art.

Perhaps it was ill-advised for any one, with so little leisure, to attempt such a paper; or, without making more research into works already published, and mastering the whole subject, to pretend to treat of it at all, and thus run the risk of doing it imperfectly, or of repeating what had been already said upon the matter; still it will be remembered by those who have read my paper at all attentively, that I put it forth but as "a mere elementary essay." I sincerely apologise, however, for having done Mr. Griffith the injustice of reading his paper so hastily and so imperfectly as to have misunderstood even his starting point, and I can only say I shall rejoice if this may be a means of bringing into more general notice, either his, or any other such papers as may induce people of the present day to take the matter into more serious consideration; for I am quite sure that true art can never revive until we can learn to agree together, and work by some sort of conventional rule.

Whether I have been able to render the application of my theory intelligible to others or not, I know that I have already reaped the benefit of my own researches, by being enabled to carry out a system of proportion in every design, and in a way which, to myself at least, appears simple and easy.

* * * * *

William White.

Notices of Books.

The Patent Law Amendment Acts, the 15 *and* 16 *Vict. c.* 83; *and the* 16 *and* 17 *Vict. c.* 5 *and* 115; *with the Patent Law generally.* By Peter Burke, Esq. of the Inner Temple, Barrister-at-Law. W. G. Benning and Co.

This new edition of Mr. Burke's work on the law of patents, brings the subject up to the present time, and must therefore be particularly useful to all parties engaged in patent transactions. The treatise was fully noticed by us when the first edition appeared.

Familiar Free-hand Drawing Copies. By J. R. Dicksee, Drawing Master to the City of London School, &c. Ackerman, Strand.

This is a very cheap course of outlines of popular objects, for the use of elementary schools and private families. It is adapted to the powers of the earliest students. An objection may be taken to the title "Free-hand," as the greater part of the lines are so obviously *ruled* in as to suggest to students the same mode of proceeding.

Miscellanea.

Croydon Drainage.—Mr. Austin's Report on the Sanitary Works at Croydon, "to correct certain misrepresentations in the report by Dr. Arnott and Mr. Page as to that portion of the works which have been sanctioned by the General Board of Health," is just now published. The writer states that the "reporters have misconceived and misrepresented both the principles and practice" of the Board, and says, in conclusion,—"I have no apprehension whatever that the misconceptions and misstatements I have noticed can stop the progress of the pipe-drainage of towns: its inherent excellence, efficiency, and cheapness will cause it to prevail over every effort that has been or can be made against it; and the true course open to engineers, and the only one which is worthy of them, is to assist in remedying its defects, and determining, from experience of its success as well as failure, the conditions and the limitations of its use."

Sanitary Opposition in Saint Mary, Islington.—It having been proposed by the vestry of St. Mary's, Islington, to raise a sum of 20,000*l.* for the purchasing of seventy-six acres of freehold land at Finchley for a parochial cemetery, a number of influential ratepayers met last week to consider upon the course the ratepayers should pursue upon so important a question to their pockets and health. A large placard, condemning the project in unmeasured language, had, previous to the meeting, been extensively circulated, and was no doubt the cause of much agitating the minds of the ratepayers present. The proposition was opposed, and a resolution passed, "That it is the opinion of this meeting that not more than 200*l.* per acre should be paid for land for the purpose of a cemetery for the parish of St. Mary, Islington, and that fifteen acres would be amply sufficient for years to come; and also that it would be unjust to tax the present generation for a larger quantity of interment-ground than necessary, and for the benefit of future generations."

Welding Cast Steel and Iron.—A patent has been obtained in this country by M. F. F. Verdie, of Lorette, in France, for welding iron, steel, cast-iron, and other metals, by first heating the article, coating it with borax, and afterwards pouring on it cast-steel in a suitable mould, and then subjecting it to the rolling or hammering process.

Condition of Cockspur-street.—Friend of the distressed and the unfortunate, I appeal to you. They say I have no feeling! Haven't I? When something calling itself a biped meets with the same fate as myself, then there will be a great outcry. Have you been in Cockspur-street lately? If not, please to go, but not in a Brougham, for that would suffer much, however stongly built, in consequence of the dreadful state of the road. It was there that, last week, I met with the sad accident that has disabled me. When it occurred, my driver said,—"He wished it had been some of their necks (I suppose he meant the commissioners') instead of the spring;" and to these two nouns he applied an epithet that convinced me at least of my vitality, apart from my suffering. I remember, a few years ago, that when a life was lost through the badness of the road in Newington Causeway, the "crowner's quest" returned a verdict of manslaughter. Are we to wait for the same result at the foot of "great George our King?" Do, pray, Mr. *Builder*, use your influence to get this road mended, and save her Majesty's subjects from experiencing the same anguish as

Brown's Mews. A Broken Spring.

A Regulator of Gas-burners.—It is very desirable to have the means of regulating the flame of gas-burners and the issue of gas, so as to prevent the waste of gas passing through the flame without being burnt, and the rapid deterioration of the air adjoining thus produced. For the sake of having the utmost attainable brilliancy of light with the least possible expenditure of gas this sort of regulation would be of great value and importance. This, according to the *Manchester Courier*, has been effected by an invention patented by Mr. C. J. Judkins, of Corporation-street, Manchester, who is said to be the patentee of the Lancashire Sewing-machine. The *Courier* states the apparatus has been tried at its printing-office and found to have reduced the consumption of gas from 2,300 cubic feet in twelve hours to 1,200. It is also said to take immediate note of sudden back pressure from shutting off of lights, so that a single light left, burnt without change while fifty were suddenly shut off. It is calculated that a saving of 25 to 50 per cent. may thus be effected, and that the sum total of annual saving within a circle of thirty miles radius around St. Paul's by means of such regulation would be more than half a million sterling! Similar regulators have before been invented. Mr. Leslie has one.

Dust Contracts.—With respect to the tenders for the dust of Mile-end Old Town, published last week, Mr. Thos. Plowman requests us to say, that he never gave a tender for dust in his life, did not authorise any one to do so in this instance, and was astonished when he was applied to by the parish authorities to complete his contract. It is to be hoped the parish will take steps to discover the author of the forgery. Mr. Drummond, the City contractor, has written to *The Times*, denying the authenticity of a list of tenders for the dust of Marylebone, which appeared in that journal, signed "Robert Dumond, City Contractor." The forger who wrote it sent a letter to us similarly signed, but we printed only the initials. The tenders were correctly stated, but in the course of the week subsequent to their lodgment, though previous to their confirmation by the court, Mr. Abbott withdrew his tender for St. Mary's Rectory and All Souls (3,640*l.*) and a tender by Mr. Dodd, of 2,650*l.* has been accepted in its stead.

Institution of Mechanical Engineers, Birmingham.—A general quarterly meeting of this association was held on Wednesday in last week, when office-bearers were nominated, and the following papers were read:—On the new pumping-engines at the Birmingham Water-works, by Mr. W. S. Garland, of Soho; on an escape water-valve and governor for marine steam-engines, by Mr. R. Waddell, of Liverpool; on an improved coking crane for supplying locomotive engines, by Mr. John Ramsbottom, of Manchester; on an improved turntable, by Mr. S. Lloyd, jun. of Wednesbury; and on an apparatus for preventing the explosion of steam-boilers, by Mr. John Rolinson, of Brierly-hill.

City Sewers Commission.—At a court held on 25th ult. the state of Plumtree-court, to which we lately called attention, was brought under consideration. Measures were already in progress for its sanitary improvement. The proposed arterial works of the Metropolitan Sewers Commission were alluded to, the surveyor of the City commission intimating that he had not been consulted on the subject, although it had been pre-arranged that he should. Mr. Bazalgette had explained, that he regarded the work laid down for the northern district purely as a question of district sewerage, leaving the rest of that district to be dealt with. It was then resolved that the members of the City commission associated with the metropolitan commissioners for united drainage, should communicate with the latter on the new project. A report by the surveyor on an opening of the Fleet-ditch for repairs, at the Crescent, Bridge-street, complained of, was then read.

Railway Rating.—At the recent quarter sessions the consideration of this question in sundry cases came before the courts. In the case of the Stour Valley line, the rate has been fixed at 250*l.* per mile for two miles and three furlongs in the parish of Sedgley, exclusive of the stations, which are to be rated separately. The opinion of the judges of the Court of Queen's Bench is to be taken as to the principle on which the rate is to be calculated, together with its amount, in the parish of Harborne, on the London and North-Western. The assessments of the Great Western, in the parishes of Higham and Linton, have been reduced from 800*l.* to 180*l.* per mile, subject to a case to go to the Queen's Bench; and in the parish of Lacock, South Wilts, the company's rate is reduced from 414*l.* to 120*l.* The rates on the South Staffordshire line have also undergone reduction.—*Times.*

Monument to Arago.—A committee, consisting of eminent scientific and other personages, has been formed for raising a subscription for the purpose of erecting a monument to the memory of the late François Arago.

SANITARY STATE OF CLAPHAM.—A correspondent, "J. W. W. P." who says he is a frequent passer through the churchyard at Clapham, denies strongly that the effluvium complained of, and the existence of which he seems to admit, arises from the churchyard. He attributes it, on the other hand, to the open ditches and drains opposite the churchyard. These, he says, are in a very dirty and most offensive state, and we gladly unite with him in calling the attention of the Sewers Commissioners to them. We do not for a moment admit, however, that our previous correspondent was wrong in attributing an offensive effluvium to the churchyard. We think it but too likely that both are right, notwithstanding that "J. W. W. P." states that in one part of the churchyard no interment has yet taken place. Is it quite certain that even the ditch and drain effluvia opposite the *lower* part of the churchyard have nothing to do with the churchyard itself?

THE IRON TRADE.—In this extraordinary trade there is a sad want of steadiness. No sooner is it beginning to recover from the incubus of high prices than there is an immediate talk of returning to them, and the more prosperous the return to lower prices becomes, the more prone will the tendency be to quit them, and to reascend to the fatal higher ones. In this respect the iron trade is in a perpetual see-saw: speculators have converted it into a complete lottery, comprising an occasional few enormous prizes, with an overpowering lot of blanks. No sooner is the trade out of one pickle than it is into another. There is now again a swelling talk of great things doing, which is certain to turn the downward current of prices, and check the onward progress and prosperity into which the trade has again begun to glide. That it now is in an active state there cannot be a doubt. "The great and indeed unprecedented demand," says a Midland paper, "is leading to the erection of new works, and the extension of many of the old-established ones. The number of puddling furnaces now at work in this district is larger than it has ever been before. This, combined with the scarcity of raw material, which is already operating in a reduction of the make of pig-iron, must lead to pigs maintaining a full relative value to that of finished iron, which they have not recently done. The decrease of the stocks of Scotch iron is leading to a great demand for pigs for melting purposes, and inquiries are now being made for this quality for the London market. At this moment, indeed, extensive orders could be taken for London at prices fully equal to those obtained here, if the trade were not fettered by the high rates of railway freight." "Prices of pig-iron," says the same authority, "may be quoted at 3*l.* 15*s.* to 4*l.* for common hot-blast; 4*l.* 10*s.* for best hot-blast mine; and 5*l.* for cold-blast makes. Bars, and all descriptions of manufactured iron, maintain their full nominal value."

THE FINSBURY SCHOOL OF ART.—A numerous meeting of the patrons and pupils of this institution (which is in connection with the Trade Department of Science and Art at Marlborough-house), assembled at the school-house, William-street, Wilmington-square, on Saturday in last week, to witness the distribution of prizes; Mr. Warren Delarue, in the chair; on which occasion the chairman congratulated the pupils and their friends on the improvement and rapid advancement of those who had competed. This was most gratifying to the patrons, whose sole object was to ameliorate and improve the condition of the artizan, by affording him facilities in the acquirement of a knowledge of drawing and design—so essential for the attainment of excellence in all the ornamental arts.

WATER.—Measures are proposed to be taken for providing Ryde with public waterworks.——The parochial authorities of West Ham are endeavouring to get baths and washhouses erected there.——The new waterworks at Ormskirk are now in operation. The water is pumped from a well by engine into a tank on a water tower 75 feet high, on an eminence above the town. The tank holds 100,000 gallons. The cost, including sewerage, will amount to 8,500*l.* of which 8,000*l.* have been borrowed on the rates, to be repaid by annual instalments.——The Darlington Board of Health have determined on applying for an Act to purchase the works of the water and gas company for 54,000*l.*; also to purchase the public baths as well as the shambles, and the town-hall, tolls, &c. and to carry out sewerage works, including pipe laying 25 miles.——The erection of public baths and washhouses in Durham will commence immediately, all the contracts having been taken.——Glasgow, it is said, is to be supplied with water from Loch Katrine, at a cost of 1,200,000*l.*

TELEGRAPHIC PROGRESS.—The Edinburgh and Northern Company have concluded an agreement for carrying the telegraph across the Forth and Tay.——A submarine telegraph has been projected to connect Van Diemen's Land with Australia, in connection with a line to Melbourne.

THE WRYSGAN SLATE COMPANY, FESTINIOG.—The first half-yearly report of this company states that although operations were commenced only in May last, and upwards of four months have been principally occupied in opening and developing the quarry, the results of the works have proved very advantageous. In two or three months, they say, from 150 to 160 tons of slate will be raised and made monthly. A half-yearly dividend, at the rate of 10 per cent. per annum on the paid-up capital of the company, to be paid in December next, was declared.

PROPOSED PURCHASE OF SOUTHWARK-BRIDGE FOR THE CITY.—The Bridge Estates Committee lately reported to the Common Council that the proprietors of Southwark-bridge still require 300,000*l.* for the property, and that it was not advisable to negotiate further about it. The council, however, have referred back this report to the committee to ascertain as to the durability of the bridge, and to continue the negotiation with the bridge directors.

SALE OF FREEHOLD LAND IN NORTH WALES.—The Pengwern Hall estate, adjoining the town of Llangollen, and sharing in the picturesque beauties of that well-known "vale," was last week offered for sale by auction, at Mrs. Lloyd's Royal Hotel, by Mr. Leifchild, of London. The particulars of sale, illustrated with plans and two views of the estate and the adjacent scenery, contained 118 lots. The prices realized ranged from forty to sixty years' purchase on the present rentals.

PUBLIC HEALTH—LEAD, COPPER, OR ZINC PIPES.—The Minister of Public Works in France has just issued a circular to all Prefects, calling upon them to put a stop to the use of lead, copper, or zinc pipes in breweries.

DUDLEY.—The sanitary question, we are glad to be informed by a correspondent, is now being brought before the inhabitants of Dudley. Mr. W. Wigginton is about to lecture on this question with reference to the social state of the country, and the Rev. R. Shaen, M.A. on the extreme mortality of Dudley, its causes and cure. The former is also to lecture on sanitary architecture. These, with other lectures, are to be given in the Dudley Mechanics' Institution, where our papers on the Homes of the London Poor, we are pleased to hear, have already been well thumbed and read, as they have been, it seems, at various other similar institutions in the interior districts of the country.——Upwards of forty applications for particulars relative to the survey of the town of Dudley, for the purposes of the Local Board of Health, have been received by the surveyor, who expects a *trifling* difference in the estimates for the same.——The question of building a new workhouse is said to have been adversely settled for a time.

VENTILATION OF NEWCASTLE-UPON-TYNE.—A question, it appears, has been raised at Newcastle as to the influence of the high level bridge there, especially in conjunction with the old bridge, as impediments to the free circulation of air, and our opinion on the subject is asked; but the question is not very explicit, for we presume it is meant to involve the sanitary question, whether the health of the inhabitants is likely to have been appreciably injured by such impediments, since there can in fact be no question as to the mere simple fact that any current of air happening to flow against a surface presenting so large a surface of resistance to the wind, must of course be liable to be checked by such an impediment. Were the air so checked, however, of ordinary purity, or impurity rather, this might be a matter of comparatively minor importance; but not so would be the question of obstruction to the course of such air as may in reality be so impeded. It involves, in fact, the question of the sanitary state of Newcastle itself, and that is too large and serious a subject to be made to hinge upon a question of this kind. Let the inhabitants of Newcastle purify their soil and dwellings, and so purify the air which surrounds them, and we dare say not much mischief would arise from that air being checked in its circulation merely by the high level bridge.

DRAIN-PIPES.—In defiance of the general favour shown to the socketted drain-pipe, may I venture, through the medium of your columns, to suggest the use of the detached collar, which, in addition to all the advantages of the one attached, appears to possess, amongst others, the following:—It may be made of a thicker substance than the pipe, and deeper than when attached; giving to the joint a stronger and firmer bearing where most required. A pipe can be replaced by removing the collar merely, without disturbing other pipes. Half-collars might be employed, or blocks, hollowed out for the purpose; or what is perhaps for the large sizes the best and most simple of all, a circle, or arc of a circle, may be formed of 9 inches radiated bricks, on which to form the joint. Now that pipes of extra thickness are required, a 12-inch pipe, 3 inches thick in the collar, and yet "free from fire-flaws, and blemishes of every description," will be not very easy of attainment.—H. J.

CITY MONUMENT TO THE DUKE OF WELLINGTON.—We understand that the Wellington Statue Committee of Guildhall have selected the models sent in by the six following sculptors, as those entitled to the premium of 100 guineas each: Adams, Behnes, Bell, Foley, Smith, and Thomas.

FIRE-PROOF CEILINGS.—I would have galvanized iron hooping used in the place of wood lathing for ceilings and partitions; the hooping to be three-quarters of an inch wide, and one-eighth of an inch thick. It is to be cut into lengths, so as to take five joists, and the ends of pieces to lap over each other, to be nailed on the lap with a single nail, and no joist to have more than a joining row of six pieces together before carried to the next joist, and so on, having a joist after every six joinings, and then carrying the joinings on another joist. Punch the holes in the hooping to the centres of each joist on a large lump of lead, or on the end of the grain of a piece of hard oak. If the joist should be unequally divided apart, chalk on a wood rod the centres of the joist for the punching of hooping. After punching the holes, the lengths are to be hammered on an iron anvil quite flat and straight. Great care is to be taken not afterwards to bend them, and, if bent, they must be rehammered. This hooping is to be fixed up with 1½ inch long wrought-iron clout nails, galvanized, to be not less than 3-16ths of an inch square, or round under the heads. The hooping to be fixed nowhere on ceilings closer together than 3-8ths of an inch from one another, and nowhere on partitions less than ¾ of an inch apart. The first coat of lime and hair to be stiffly gauged with Portland cement. Nails must be driven well up.—S. P.

GRANITE BLASTING IN THE HIGHLANDS OF SCOTLAND.—Forty thousand tons of granite are said to have been raised at Macnevin's Isle, Bonaw, by a blast of 4½ tons of powder, placed at the bottom of a shaft 80 feet deep, with a mine of 40 feet on either side, on a level with the bottom of the shaft. The cost of the blast was 400*l.* Fresh air was constantly pumped into the shaft while in progress, and it was blocked up with bricks and Roman cement, and rammed with twenty cart-loads of fine sand, to render the whole air-tight. Blocks, 12 tons in weight, were pitched within 10 yards of the loading-pier from the face of the cliff, which had been quarried in the last four years into a perpendicular front, 100 feet long and 80 feet deep, for causeway-stones and monumental work.

TENDERS

For Norris Almshouses, South Hackney. Mr. Charles Parker, architect.

	House.	Boundary Wall.	Total.
Bennett	£940	£315	£1,255
Little and Sons	936	223	1,159
Fox	898	239	1,137
Norris	877	237	1,114
White	883	227	1,110
Winter	861	225	1,087
Wilkinson	611	221	1,032

For Haberdashers' Hall. Messrs. Snooke and Stock, architects.

Grimsdell	£9,184	0	0
Wilson	9,184	0	0
Locke and Nesham	9,127	0	0
Cubitt	8,918	0	0
Lucas, Brothers	8,750	0	0
Rider	8,740	0	0

For warehouse in Cannon-street West, for Messrs. Devas and Co. Mr. J. Griffiths, architect.

Smith and Appleford	£29,408	0	0
Willson	28,557	0	0
Ashby and Horne	28,354	0	0
Piper and Son	28,300	0	0
Lawrence and Son	28,240	0	0
Brown	27,980	0	0
Harnes and Eyre	27,740	0	0
Jay	27,277	0	0
Lucas, Brothers	26,500	0	0
Locke and Nesham	25,930	0	0
Cubitt	25,860	0	0

Carlton Club, Pall-mall. Mr S. Smirke, architect:—

Lee	£37,130	0	0
Lawrence and Son	37,340	0	0
Grimsdell	37,125	0	0
Cubitt	36,625	0	0
Lucas, Brothers	34,450	0	0
Smith and Appleford	33,570	0	0
Kelk	32,923	0	0

TO CORRESPONDENTS.

"H. C." "Alpha." "H." "A. and B." "W. W." "J. T." "S. S. T." "B L." "Constant Reader," "Putney-hill Wall" (*her seat?*) "C. W." (declined with thanks). "W. A." "J. B. D." "Poor Old House" (*we have already called attention to it*). "W. P." "J. S." "J. J." "W. M. H." (*no*). "A. C." "J. D. P." "W. C. L." "S. P." "Observer." "H. H." "C. C. N." (*thanks*). "S. B." "*Notre Dame*" (*out of sight out of mind*).

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the EDITOR, and not to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

The Builder.

SATURDAY, NOVEMBER 12, 1853.

A CLOSE observer of the onward tendencies of the age can perceive in the midst of the rumours of war and the demonstrations of peace which alternately disturb the public mind and the government securities, that one question of domestic policy is gradually rising to a position of paramount importance. On all great questions respecting the constitution of the country, on the questions of reform, of civil and religious liberty, and of free trade, public opinion has pronounced and great statesmen have made up their minds. Legislation is now beginning to assume a practical form. Discussions on political economy have been succeeded in the contemporary literature by discussions on sanitary economy. The "condition of Ireland question" has been set at rest. The corn-law agitation, indeed, has left behind it the seeds of dissension in our agricultural districts; but the spirit is now expended on furious controversies touching subsoil drainage, rotation of crops, steam ploughs and reaping-machines, turnip feeding and liquid manure. There remains yet one great question, still in progress, which comprehends within itself the education of the people, their social amelioration, their sanitary improvement; and that is a question which occupies the mind of every great statesman and of every patriotic spirit. We are not mistaken, we think, in our belief that the Condition of the Working Classes is now the most important subject that can engage the public attention. And we purpose to lend what further assistance we can to the cause of their social elevation.

Our pages, indeed, are not the proper channel for political disquisition. Even if they were, we do not see that political disquisition can do much good. The principle has on all sides been recognised as an indisputable truth, that to improve the condition of the working classes is to improve the condition of the empire. It is not, to adopt the language of a great writer, the cause of party, nor of faction, nor of any individual, but the common interest of every man in Britain. We are of those who believe that the elevation of the working classes depends more upon education and progressive reform than upon political agitation and popular discontents. We believe that it is scarcely possible to retard the progress of any class of men who sincerely desire to seek truth and to acquire knowledge to the full extent of their opportunities, however small; their abilities, however humble; and their means, however limited. It is of little use, we have long held, for the working classes to sit still until the different parties in the Government and the different sects in the Church have united on one uniform and comprehensive method of instructing them. They must avail themselves of the opportunities within their own reach of educating themselves. These opportunities, as we will endeavour to show, are much greater than they generally believe.

If a mason, for example, would only think that the blocks of limestone he is so often engaged in cutting are rich in the fossil remains of animals which existed on our globe long before it was trod by a human foot; that this block of sandstone is a produce of the disintegration of rocks which were formed earlier in the geological periods; that the intractable, but enduring granite, had its origin within the boiling crater of a volcano; he could wish for no subject of study more fascinating, no branch of knowledge more easily pursued. If a plumber could perceive properly the immense importance of sanitary economy to the health and happiness of mankind; if he could also perceive the important position his trade occupies in all the applications of this science; if he studied attentively the theory and practice of our modern systems of drainage and water supply,—studied to comprehend the errors of the one, and to improve on the errors of the other, what a boon the plumber might confer on society in his day and generation! If a painter were aware that his business, even in its most mechanical features, is capable of affording examples of the most recondite truths in science and illustrations of the most beautiful combinations in art—the chemical constitution of pigments, the harmony of colours, the action of light—and if the painter studied these things in the true spirit, what should prevent him from rising to an eminent position in science, or forbid him aspiring to a niche in the temple of art? The cabinet-maker, who constructs a sideboard in the Grecian style; the carver, who fashions the back of a chair, or the leg of a sofa, after the style of Louis Quatorze; or the upholsterer, who imitates the festooned hangings of a Byzantine mosque, would certainly derive a pleasure of incalculable extent from the mere knowledge of the origin and history of these respective departments of art. And if there were more of this knowledge abroad among the working-classes—nay, if there were more of the spirit only which seeks to acquire this knowledge—we should avoid many of the egregious errors we display at every exhibition of the industry of all nations. There would likewise be more practically useful applications of scientific discovery; and there would be an increase of intelligence and a development of genius in the humbler walks of society, of which no accurate conception can be formed. Need we add that an increase of wealth, of respectability, and of political power would follow this improvement? The one thing, it is plain, would follow the other as a natural consequence. For no tradesman who, by such a method of intellectual discipline, has come to exercise his mind on one subject, but will soon exercise it on others: a sincere admirer of art is also an admirer of social order and progress; and those two qualifications go to make up the very highest character which a good citizen can possess.

Accordingly, it is our anxious desire to communicate to the articles we are contemplating on the present condition of the building trades, something of an educational tone. We shall make no apology to our professional readers, if we appear to be too simple and elementary: our papers, indeed, will make no higher pretension than that of assisting the artizan to a better knowledge of the principles of his business and to a knowledge of those books best calculated to assist him in a further prosecution of the study. In the columns of the *Builder*, during the eleven years of its existence, a mine of materials exists; and some of these materials we will attempt to systematise, digest, and present to our readers in a connected form, together with what additional information we possess, and what we hope to acquire in the course of the endeavour.

The statistics of the wages at different periods of the different trades, and the specific causes which have led, on the one hand, to a period of low wages, and, on the other hand, to a period of high wages, are important features; and the cause and effect of the various strikes and trades' unions which have distinguished nearly the whole of the building trades in the metropolis, should be touched on. We are anxious, however, not to be misunderstood here. It is not our intention to interfere between the employer and the workman respecting wages. What we find to be the case we will give an account of in an evenhanded manner; and should either of the parties feel interested in correcting us, why we shall be happy to be corrected. At the same time it is proper to state, we view with distrust all manner of strikes and trades' unions as they are at present constituted. We think they have been productive of much evil and of little good. Under this department, approximate statistics of the number of men in every trade may be given, with a glance at their general character, and the improvement which has of late years distinguished them.

Some other points of these social economics offer themselves for attention, such as the friendly societies, clubs, mutual benefit schemes, which we know to be so common and so well supported. It is possible we may have some suggestions to offer on these points; for we are sure that scarcely a year passes without the working classes being grossly mistaken in the nature of their investments, and the returns upon which they calculated.

Finally, it will not be the least important part of the subject to treat of the sanitary condition of these trades, or, in other words, to explain to the workman how it comes to pass that in one department there are different branches possessed of different physiological influences; that one trade is eminently healthy and another eminently pernicious; that in the one case the artizan may hope to reach the limit of old age, and in the other case he can only hope to fill a premature grave. It has often struck us that in this particular there seems to have been neglect on the part of the medical profession. There is scarcely a business we know anything of in this great capital that does not exercise in some way or other a particular influence on the workman's health. Yet, it is a singular fact, we have no good medical authorities on the diseases of artizans. Those ill effects we have to lament are too frequently the result of ignorance or of neglect; and we venture to say that a vigorous and combined effort on the part of the working classes would do much to extirpate the diseases incidental to their trades. We know, at least, that many of the causes lie within the compass of science to remove; and it will be our duty to give what information we possess on this point, and to suggest what remedies we believe to be efficacious. A wide field awaits investigation here.

In the first instance, our attention will be confined to Trades specially connected with Building, and the extent of the series even on these will, of course, be regulated by circumstances. But should we succeed in our purpose, and find continuation desirable, the inquiry may be pursued into trades connected with Interior Decoration and with Machinery and Metals.

Let us add that desire to be useful is our leading motive, and that our primary object is to elevate the condition of the working classes. We believe that this would be mainly advanced by directing their attention to the principles of their own trades. And we are convinced that no surer means of enlightenment, no safer path of progress can be presented to their minds or made the object of their anxious study.

THE CARLTON CLUB, PALL-MALL.

It may interest some of our readers to know that the Carlton Club, in Pall-mall, is about to be completed, under the direction of Mr. S. Smirke, with all its three fronts finished as the wing lately built, using polished granite shafts for the columns and pilasters throughout. Mr. Kelk has taken the contract, and has undertaken to complete it early in 1855. Mr. Thomas is to execute the carving of the exterior. The club in the mean time will occupy the Duke of Buckingham's house adjoining, the present coffee-room of the Club being temporarily connected with it, so that the members may continue uninterruptedly to use that room.

EDUCATION OF THE ARCHITECT.

There are few subjects more worthy of reflection, or more difficult rightly to reflect upon, than education. On this depend our present and future utility and happiness in every aspect; and yet it presents so many forms to our embrace that we scarce know which to close with, and are often in the end altogether eluded. But notwithstanding all the conflicting notions prevalent, on this we shall agree—that it is the right of every one to be trained in the way he should go; that it is a mean and contemptible jealousy not to impart information for fear we should ourselves be outstripped by the recipient; and that of all goods, right knowledge is the most beneficial and exalting with which our race can be endowed. It adorns and ennobles poverty: it renders wealth a blessing to its possessor, and all around him: it gives a right direction, and prepares a fitting channel for all streams of progress; and whether at the hearth or the council board is a princely dispenser of wisdom and power. In a word, for every path of life, the best of guardian angels is a good education.

But we are now desirous to consider in what way to train a man up to architecture. We must take much for granted, such as a disposition for the pursuit, and at least the average amount of mental capacity. For we cannot pause here to inquire whether any are born with high endowments, or whether all infant minds are equal in respect of power, and the difference of what is afterwards effected by them results solely from better or worse education. It may be questioned whether you can take any child and make him really an architect simply by subjecting him to a particular course of study; but still we must not give in too much to the idea of heaven-born intellect; and it is certain that let a mind have all the genius that the fondest parent could desire, yet much discipline and strenuous exertion are necessary to make this genius anything better than a plea for idleness and an excuse for eccentricity of conduct. True, the theory saves us a great deal of trouble: the young intellect delights in imagining it can sweep away all opposition with "a clap of thunder," as Napoleon said he would do with the Peninsular war: but this sort of imagination is vain, and the end is, that one only scintillates, and there is no result but a shower of sparks and emptiness. We take for granted, therefore, that a youth having been educated in those matters which are in common taught to all, finds himself with a desire to learn, at that point in his life where he must choose the turning he will take from the main road; and we will suppose him to have discovered there is no royal road any whither, and that if he will succeed he must work. We have, at a former time, enlarged upon this topic of "work," when considering the moral view of the case; nor need anything more be said than this, that if a person will waste his time, health, and strength at the very period they are of most value to him, he will never become a good architect or anything else; nor if he is of an indocile disposition will he learn anything further than to cling to the excellent opinion of himself he already possesses; till the day when this, his only staff, shall break and pierce his hand. The period at which we have supposed a man to start in his profession, is that for acquiring technical skill, and becoming ready, not only with instruments, but with the pencil and the brush, so as to be able to sketch well and to take correct and rapid views. The possession of this power alone is a master-key to an infinite treasury of beauty; nor can we think a man accomplished as he should be in his art who cannot commit the images of what he may desire to remember as well to his book as to his mind. I would not quarrel with any who should be bold enough to add some mastery of colour to his skill in drawing, because this is likely to introduce him on better terms to Nature: and the goddess will more truly instruct his mind when he can portray her divine lineaments. But this capacity has been often, in miserable envy, made a subject of reproach to others by men who are themselves deficient in it: on this sort of plea, that the more a man knows of one thing the less he must know of everything else: the better draughtsman you are the less architect: the better colourist you are the less architect; and so on, forsooth, until it would seem there was nothing required to make an architect but to call himself so. And then this negation of everything cognate to your art constitutes itself into *purity*, and goes to make what one sometimes hears called a pure architect; very pure, indeed, and equally simple. Practice is the secret of excellence in the technical branches; and that sort of perseverance that will try nine times to accomplish any particular curve or to produce any required effect, no matter how small it be. But the crowning success of the first effort of determination is also the first of a series of victories over one's own inefficiency, until there is little left to conquer. "There is no such word as fail," says Bulwer's Cardinal Richelieu, "to a brave boy;" and Bulwer and the Cardinal are right. Again, if a man has no command of his pencil, how can he design, especially in details and in ornamentation? He may compile, true, by culling from books of reference, picking out all the pretty things, and putting them up in a row; and everybody who does not know where they come from, may think this is a very fine, striking, and creditable exhibition; in fact, an overwhelming display of genius, the dawn of a new era. But all this possesses only the honour and glory of the copyist, and has no more to do with architecture (this culling principle, I mean) than it has with anything else that is noble and commendable. Of course, we are not referring to a proper use of precedents, nor that caused by the general invitation of architects, from a given style, to produce a required building, where you are, in fact, instructed to copy, and his reverence, it may be, stands over you with some church society's thunder in one hand and somebody's examples in the other—a choice between the dagger and the bowl. But I refer to that indescribable pilfering which is meant to economise thought, and often arises from so simple a thing as a man's inability to draw; for from this cause he is dumb, and, think what he will in ideas, he cannot express. Now, from this power of construction on paper, let us turn awhile to the science of construction. Here we shall find a study of the geometrical sciences of the highest use. The cases must be very many in which a knowledge of mechanics, and the like, is of real advantage to the architect: and though you may learn much from practice, it is still advisable to understand principles: the former enables you only to follow, the latter to lead. On those who construct our houses and churches much responsibility rests: the fall of a roof (I take a very simple example) may rebuke ignorance in a terrible and deadly manner; and in these cases, in what concerns a man's deliberately professed occupation, it avails little to plead one *was not aware* of some very simple and natural cause of danger; and Architecture may see what her indifference to mechanics—her purity (that is, in this case) has cost her, when many of the noblest works of the age have been accomplished under the guidance of a new science. We therefore expect the architectural student to be well versed at least in elementary mechanics; to know how and why what he may design will stand securely; and to see how and why he might produce the same result in some cases with half the trouble and expense it would now cost him. In fact, he should understand not only how to construct, but how to do so on the most scientific and approved principles. It is no argument that, because others have done and may do without the learning here required of them, you should do the same. Besides that comprehension of geometry, trigonometry, and the various branches of mechanics which should enrich the architectural mind, it is probable that some acquaintance with the *natural sciences* would at least repay the pains taken in forming it. Men whose language is materials, should certainly be competent to examine for themselves into the nature of that they purpose to express their ideas in: they should know the difference in durability of the various kinds of stone and metal: they should thoroughly comprehend the capabilities of the substance they design for. Were this more often the case than it is, we should not so often see what may be called stone-design foisted upon iron, nor iron design upon stone. The confusion so resulting is as fatal as a confusion of tongues, and serves as much to stop the progress of architecture as that did to arrest the building of Babel. In an age of science, this clumsiness and want of discrimination is highly discreditable; nor would it take either much time or trouble to gain quite enough knowledge to meet all probable requirements of your art. Now all that has been laid down for the study of the architect concerning technical, mathematical, and general scientific attainment, is but that portion of his work which may be best accomplished in youth, when the mind is altogether more capable of profitable application to such matters than at any subsequent period. When you are preparing your armour for the battle, then is the opportunity to see that it is at all points secure; but once engaged, little time is there to repair a dangerous negligence in arming. Now, with respect to general accomplishment, an architect is in the same position as other men: the more he knows, for instance, of modern languages, the better; and it is at least of great value to be well versed in French, which is at once the key to almost incalculable useful and brilliant information in every department of learning, and a means of introduction to all valuable society abroad, when the student makes his tour. That in the present state of society, the art literature of the continent should be as the Assyrian cruciform to a man who would distinguish himself; and that once out of England, he should be deaf and dumb (a strong expression, but reflection will nearly justify it),—this is lamentable, this is disastrous; and it is hardly too much to say that to acquire the necessary command of foreign language is well worth the sacrifice of untold hours of mere chorographic amusements at home. Necessity is an exacting taskmaster; and there is no doubt that to acquire all these powers, there is most need of a severe self-discipline. Now, there are also to consider general history and art-history. General history is a study of the most expanding nature, and a volume of "Gibbon" is worth a hundred volumes of novels. From this sort of reading you may even acquire the power of writing, because the mind, from studying an excellent nature, learns to appreciate and imitate logical order of thought and elegant modes of expression. But this pursuit of general history is of a more optional character than that of art-history. Indeed, the latter is almost imperative in its claims. One cannot see how an architect can safely remain in ignorance of the story of his art—not only the general, but the particular story,—as of the various styles adopted in different nations, climes, and ages; and how shall one learn the causes of any nation's special mode of art if he know nothing of that nation, of their origin, of their race, of the land they dwelt in? and how shall he judge rightly of the effect produced by these causes, if he know nothing of their needs, manners, customs? He would arraign the Greek before a Gothic tribunal, and the Goth before a Greek. He would condemn the Saracen by a Roman code, and the Roman by the art-canons of the Moor. And this *is* done daily. A man assumes a prejudice for a particular style, and drags every other before it for sentence: all rightly palliative circumstances; all that arises from the inimitable laws of nature; all that is to be pleaded from epoch, and from climate, from necessity, or justifiable predilection, are disregarded at the unjust tribunal, and the judge in some portentous declaration stultifies himself in condemning the object of his hatred. Those who have read that passage of Mr. Ruskin's last volume, in which, taking a comprehensive view of Europe from south to north, he remarks upon the varieties of climate and style, change of one accompanying change of the other, hand in hand, step by step, cannot but admire the justice and truth of the principle by which that passage is dictated; and this principle is the very soul of true criticism which consists in viewing the whole of a matter or work in all its bearings; in making a full and impartial recognition of existing facts; in not choosing to forget, or choosing not to remember what might appear to militate against our position; and in summing all up with a single aim to the truth, noble unflinching truth,

nd that only. This sort of criticism is that which an architect should bring to bear upon he subjects of his studies; and to do this he nust acquire that spirit of observation which eizes at once on all the circumstances in physiology or whatever else that may bear upon the matter in hand. Besides being versed in the history of his own art, he should understand its relation to the others; he should be conscious that Architecture dwells in unity with the sister muses; he should endeavour to add some knowledge of them to that of his own peculiar divinity; and, beyond all, he should be above the paltry egotism of supposing that because he knows nothing of painting or the rest, he must know more of his own; or of judging a man to be necessarily no architect because he is a master of the brush. Were not Giotto and many others skilled alike in all the arts? And in fact the arts are so connected that that critical knowledge of the rest which the follower of any one in particular should strive to obtain, must and will throw light upon his own. I do not understand that the arts are so many essentially different things, but that on the contrary they are derived from one identical source, and I say to him who would excel in any, go to that source,—there embark—thence proceed down your own branch, that is, *study art as a whole*, in a liberal spirit, and from those principles of taste to be gathered from her universal works here is apparent what we consider the principle of architectural education: and it is that the student should become a man of *art*, and that his attention at all times be turned to the observation of beauty and the practice of it in design, and to the cultivation of the faculties of invention. For this purpose, association under some skilful man is particularly useful, and it would be an excellent thing if there were among us such large studios as exist in Paris, with a very beneficial result. There you may see seventy or eighty young men, paying some twelve francs a month—less than 7*l.* a year,—engaged in real architectural study under some distinguished artist: but here men too often pay large premiums to do mere office drudgery, and spend many years in drawing contemptible lath-and-plaster houses, and this they call learning architecture. And if men associate together to acquire for themselves instruction they never or rarely receive in offices, if they combine to supply a deficiency that ought not to be felt, it is looked upon as a species of rebellion by those who cannot but accept it as a very forcible reproof of their ignorance or their neglect. Of the probable effect of a college for architects, it is difficult to judge; but it would most likely, from emulation, lead to some annually distinguishing themselves, and so ultimately raise the whole standard of architectural knowledge. This would indeed be a great boon; but even a college offers no panacea for all those difficulties which are of an individuals' own making. A college will not cure idleness, nor indifference, nor excessive pursuit of pleasure. Success, after all, rests chiefly with a man himself, and is dependent far more on his own self-government than on anything that can be effected for him by the most elaborately devised system of public education. The best possible guide is that spirit of philosophy which does everything with a right, definite purpose in view, and so does it as if seeking to gain a permanent step in advance. This is as capable of being applied to the pursuit of art as it is even to the mere fashion of a dress; and its chief end is to effect whatever is attempted well and becomingly. Though never leaving one thing for another till you are thoroughly master of the first, belongs to the same rule of conduct; and this, according to Sugden, rendered him ultimately the great lawyer that Lord St. Leonards is: the same also has ere this made, and can again make, a great architect. Let us lend not too much time to pondering over abstract principles, as they are called, concerning the method of educating ourselves, but set at once to work. Industry is the only golden rule, and if this be accompanied by that continual presence of mind which is at once aware and avails itself of whatever may conduce to the improvement of our understanding, we cannot see why a man of fair ability should not master all the studies here laid down as important to the architect, by his own exertion, and by availing himself of even the existing means of improvement, capable, though they be, of great amelioration. There is no reason to reject the little you have on the ground that you ought to have more, for true wisdom is humble and docile, and will build her house of timber, where there is not marble to her hand. In this, as in all other respects, Nature in her various forms proffers us advice, and instructs by her example; and there is no more ennobling study than she provides, and no man more likely to form to himself great thoughts and high aspirations than he who is a living disciple at her feet. It may be impossible to tell the precise manner in which she bestows wisdom; nor know we any more how inspiration came to the prophets; but the greatest men of art have ever proclaimed their gratitude to her. The poet has glorified her in his song; the painter joyously portrayed in her own living hues; the musician has sought in emulating her thunder to describe her might. That for the architect she has no simile, no encouragement, no guiding radiance, it is impossible to believe; but as the love of nature enlarges and adorns the soul of man, and imbues it with a calm and grand simplicity, so shall that influence be felt in whatever art man follows. So shall it lend majesty to his conceptions, and ennoble his designs. And if having considered the art by toil and self-denial in our youth, we at length arrive at the long-sought knowledge, what shall we then care that pleasure has been a stranger to us, and on what shall we reflect with more happiness than on that intellectual power which shall at length have crowned our efforts? In that day of fruition the present becomes joyous with the recollection of the well-spent past. The many hours rescued from pursuit of folly seem to gather round in bright assemblage, and crowned with the laurels of victory won over our ignorance and indocile pride, point on in hope to a useful and honourable future. Then even Adversity is powerless: she can make no solitude for him who has stored his mind with treasures; and when all else fails, the benefit of a good and right education shall yet remain an immutable and imperishable solace!*

H. T. Braithwaite.

* Read at a meeting of the Architectural Association, October 21st, 1853.

WHAT MAY OCCUR, AND MIGHT BE DONE.

It is a dreary task—one to make the heart ache and the head fail—to revolve in powerless silence the manifold misery of the London poor. Imagination dare not dwell alone upon the probable ravages of death among wretches huddled upon a few rotting planks over reeking cesspools, inhaling the breath that steams from the huge nostrils of drafty sewers or chained to the gates of men who poison their fellow-creatures in scoffing security. As pestilence, ere it strikes home, tears aside the veil, we behold, once more and perforce, what we dare to call the "daily life" of thousands of our countrymen. Who must account for the lives of those innocent multitudes that you fling from the very cradle into the grave; or of those, more horribly, that you refuse to slay till you have made the soul brutal and hideous as the carcass that holds it? Do we not know, sir, that if the armies of England were placed in such deadly peril as are at this moment some 200,000 of the inhabitants of this metropolis,—nay, if it were a question of 200 refugees,—they would be rescued, though it cost us, as the *Times* would say, "the last ounce of our treasure and the last drop of our blood?" Can we affirm that in the present instance there will be expended as much intellect, as much activity, as much gold as went to compass 500 seats at a general election? Vain is it for the *Builder*, at life's peril, to seize the images of these infernal horrors, and drag them into the upper day; for, amongst all those wonderful forms in which Anglo-Saxon wisdom has wrapped its laws, none can be found to stay a plague. For the stealing of twopenny-worth of cheese there is punishment prompt enough: to slay one's tenants, to poison one's neighbours, are safe and easy crimes, the stain of which may be washed from one's name with ever so little Cologne water. Your baths and washhouses, your schools of industry and art are good things, and well enough for a man who can go home to a few cubic yards of respirable air, a few cubic yards of dry soil, who has a few feet of pipe to bring him water, a few more to carry away his refuse out of sight and smell, who finds a place there which he can enter without dismay, and leave without despair. But what need he care for them in his present misery. A man must have heroic courage and constancy, who can adorn such places as you have shown us with the virtues of sobriety, cleanliness, and *thought*.

Four months remain for action, but not an hour for talk. What must be done? (Is anything to be done—that we may know whether to pack up and begone?) We may have, looking to Newcastle, to deal, as a municipal work, with 200,000 dead bodies! Is Parliamentary apathy to reach thus far? Surely we shall hear of that respectable body ere it be too late. *The hands of the executive must be made strong in this matter.*

I have a profound conviction that nothing of a remedial nature can be attempted (when whitewash and shovel have done their present work), without a dispersion of the congested life with which we have to deal, and with this a consequent lowering of an unnatural value attained by certain house property. I look upon this dispersion as the only chance of safety for more than 50,000 fellow-creatures, the only chance of avoiding a huge wreck of life. *Look to Newcastle.* This dispersion must be effected, with the law if possible, but effected and at once. I think it may be done thus:—

Let houses of refuge on a large scale be immediately formed at convenient localities, on existing lines of railway, within ten or fifteen miles of London. Let passage within this distance, by means of a general rate, be made easy. Let all condemnable dwellings be forthwith compulsorily closed. Let residence in all localities upon a certain low level be discouraged, and the formation of business premises in their place be by all means enforced. Let the extension of the metropolitan railways to convenient central termini be no longer delayed. Let new suburban lines, if possible, be forthwith commenced. Let small markets be erected at frequent intervals, in which costermongers should be compelled to store and sell their goods. Let poor-rates be equally spread over the entire metropolitan area; and finally let the Queen be petitioned to cause a royal commission to issue for the attainment of that grand object, a life-possible home for the poor.

I am supposing we are prepared to sanction a large outlay for these purposes: it might possibly be *cheaper to let us die;* but the money cost of even 50,000 lives (and the cost of 50,000 deaths), supposing us worth no more than the fifth of an American Nigger, would be something more than a million sterling. *Look at Newcastle.* And again I say, what is done must be done *at once*, for

The Night is at Hand.

THE LABOUR MOVEMENT.

In the building trades there is not so much agitation as there has been.

The metropolitan bricklayers have had a permanent committee sitting at the Craven Head Tavern, Drury-lane, to carry out the system of partial strikes, the men turning out being supported by the general body. Several of the small masters have of late been compelled to yield the advance demanded. The bricklayers' labourers, who struck for the advance to a guinea, being without funds to support themselves, were glad to return to work at the old rate of 18s. The journeymen brass and iron founders have been organizing to obtain an advance of ten per cent. As to the carpenters, in addition to the men on strike in the firms of Higgs, of Stangate, and Hill, of the Whitechapel-road, the men in the employ of Mr. Lucas, at the Reform Club, sent in a memorial for the advance of 6d. a-day, and, meeting a refusal, withdrew from their employment, with the sanction of the trade delegates meeting at the Carpenters' Progressive Hall, Ryder's-court, Leicester-square. A meeting of the masons of London was lately held in the large hall, Broad-

way, Westminster, in consequence of some of the master builders having *offered* their men the much-desiderated 6d. a-day, "to divert," as they imagined, "their attention from the new agitation to reduce the time of labour to nine hours a-day." Resolutions were passed pledging the meeting to nine hours' work a-day, and refusing the extra 6d.

In the provinces there are still some lingering strikes in the building trades. At Bedford, a memorial having been presented by the journeymen to the master carpenters, praying for an advance of wages, a meeting of both employers and employed was held. The demand on the part of the men was for an advance of 3s. a-week. A considerable number attended the meeting, and, after some discussion, the masters offered an addition of 2s. on the old wages, which was acceded to by the workmen, and the matter was thus amicably settled. The journeymen cabinet-makers of Birmingham lately resolved to demand an increase of ten per cent. on their wages, and requested an answer from their employers.

At Worcester, a meeting of carpenters has been held, and the 6d. resolved on, with a week's notice to the masters, and the formation of a society to resist any adverse determination of the latter. The dispute at Bolton between a portion of the operative joiners and their employers of late still continued, the workmen at two establishments having turned out because of the masters getting work done by machinery. There are two other firms who use the machinery. New hands have been engaged by some of them, and the ill-feeling has been allowed to run so high, that windows have been broken. Some weeks ago a turn-out took place of the painters employed by Mr. Aaron Dyson, in Princess-street, in consequence of his taking one of his relatives into his service, as an apprentice to the business! Mr. Dyson said he was eighteen years of age; the men said twenty-two! New hands were obtained by Mr. Dyson, and considerably annoyed by the turn-outs and others calling them names, &c. like a parcel of children, as to this really in itself childish dispute.

The masons of Kilmarnock, whose wages for some time back have been 22s. per week, on hearing that their brethren in Glasgow had obtained an advance to 5d. per hour, for fifty-seven hours in the week, resolved to solicit the same wages. The masters, after considering the subject, offered to raise them to 23s. This the men refused, and, with some few exceptions, struck work.

The strikes and other procedure in the building trades, however, on the whole, are as nothing when compared with the doings in the manufacturing districts of Lancashire. These latter are truly lamentable. Independently of several minor and isolated strikes in Manchester, Bury (where about 1,000 hands turned out, principally in the fustian trade), Bolton, Newton-heath, &c. there are, at least, in the four centres of Burnley, Bacup, Preston, and Wigan 183 mills closed, of the aggregate force of 7,400-horse power, with 2,310,086 spindles, and 11,867 looms; and 47,100 operatives unemployed. It is no exaggerated estimate to calculate the number of work people on strike in this county at 50,000, and the average loss of wages at 25,000*l.* weekly. Riot and bloodshed have already taken place at Wigan, where the miners also are on strike. In short it is estimated that the northern strike of men and masters together has now assumed in all to the formidable amount of 70,000 persons, most of them locked out rather than turned out, but all on account of the general demand of 10 per cent. of increase in wages on the part of the workpeople. It appears that so obscure is the original cause of the dispute, that it is impossible to get at the truth of it. The workpeople [illegible] an alleged promise from the masters at the previous standing, and the masters still deny the existence of any such promise, and, moreover, insisting that trade, so far from improving, has been and still is falling off; and as to the fact at least that there is now a decided decline, it seems there can be no question. What a time then to insist on a rise in wages, and in the face of rising prices! Yet it has almost become a historical axiom, as an experienced Lancashire paper, the *Blackburn Standard*, remarks, that "strikes never take place until we are on the eve of a panic or a famine." Such a strike as this can only precipitate and intensify the evils both of famine and of panic. The *Spectator* puts a case of the cost and loss by one of these strikes, which completely confirms what we said of their anticipated result at the very outset. "The dyers of Manchester ask an advance of 10 per cent.; but they have either not chosen the right time, or have not gone the proper way to work, or they would have gained their point before now. Supposing their late wages to average 20s. per week, each one of them has already lost 10*l.* which is equal to 10 per cent. of his earnings for the next two years. Should they gain the victory at the end of this week (which is doubtful), and resume work on Monday morning at the advanced rate of wages, it will take two years of the additional 10 per cent. to make up for the substantial loss they have sustained by the strike. In all such cases they should count the loss before they begin. When workmen can obtain an advance of wages by simply abstaining from work for a few days, it would be much to expect that they should not employ such gentle compulsion to enforce their demands. But when any class of operatives require to go about idle for nine or ten weeks without bringing the employers to their terms—as the dyers, dressers, and finishers of Manchester have already done—it is plain that they have committed a grievous blunder. It may be laid down as *a general rule that unless a demand for higher wages is complied with almost immediately the trade cannot afford the advance;* in which case it is worse than folly in the men to persist. Even if they should succeed, as they have sometimes done, in extorting a higher rate of wages than the state of the trade affords, they cannot expect to retain it long."

The account of the cost of strikes is a sad but instructive record. What the ultimate cost of the present almost unprecedented struggle may turn out to be, both to worker and to employer, it would be impossible as yet to estimate; but let us look back to what some former strikes have actually cost. The following calculation made in 1846 by the *People's Journal*, may suggest some useful considerations to the operatives at the present moment:—"It was stated at a late public meeting of operatives in Preston, that in one strike of the cotton-spinners at Manchester, which lasted four months, they spent 400,000*l.* in loss of wages alone, and in two others they lost 600,000*l.* In another strike at Stockport the cotton-spinners lost 600,000*l.* in wages; and in different strikes the wool-combers of Bradford lost 400,000*l.*; the mechanics of Leeds, 180,000*l.*; the operatives of Lanarkshire, about 50,000*l.*; the colliers of Northumberland, 100,000*l.*; which, together with the losses by the strikes at Stockport and Preston in 1840, make a total of 3,000,000*l.* which, to all intents and purposes, was spent in vain—as in nine out of the ten cases the strikes completely failed in their object."

The reflections made by sagacious mercantile men on the Liverpool Exchange of late, in regard to what has already transpired of the present movement, are so much in accordance with what we anticipated at its commencement, that we shall quote from the "Talk on 'Change" in the local *Journal* on the subject:—

"The further talk was, that the evidence of the hour ought to be recorded for future generations; that last summer everybody thought an advance of wages right and proper; that the men were moderate in their demands, and the employers liberal in their concessions; that all went merry as a marriage bell, and yet that the advance of wages was a positive evil: *that it benefited no one, and did injury to all; that at once up went the price of everything; that an advance of wages served as an excuse for masters and tradespeople to raise* their *prices; that shoes grew dearer by one shilling a pair; that rent made a corresponding move; and that the mechanic quickly found that an increase of two shillings a week left him every Saturday night positively poorer than he was before;* that, no doubt, the bad harvest aggravated the depreciation of his condition, but that the circumstances which regulate wages had not been appreciated when an advance of wages was thought of."

Mr. Hume, we are pleased to observe, most strongly advises, what we have long recommended—Arbitration, in all such disputes as the present. In reply to a circular forwarded to him by the Operatives' Association, he pronounces a decided opinion—the result of more than forty years' experience with masters and workmen—"that all strikes, whether of masters or workmen, are injurious to both, and detrimental to the public interests, and therefore ought to be avoided. He points out that the object sought by the repeal of the combination laws was the referring of all these disputes to arbitration, and asserts that, in these times of increasing knowledge, trade, and prosperity, the working classes and the employers ought to settle all their differences in that peaceable and reasonable mode."

MEMORIAL OF THE GREAT EXHIBITION.

The meeting before announced took place in the Lord Mayor's parlour, at the Mansion-house, on Monday last, and was afterwards adjourned to the great hall, when the (late) Lord Mayor, Challis, deprecated all intention of claiming the suggestion as his own, or of intending to propose anything more than a monumental record of the International Exhibition of 1851, as was afterwards also clearly and eloquently explained by the Bishop of Oxford, and in which, as a matter of course,—and the propriety of the intention every one would admit,—the principal figure must be the Prince.

There was a good muster of architects; but the big-wigs appeared rather in their written adhesions and in their subscriptions (which have already reached a large amount), than in person.

PREVENTION OF RAILWAY ACCIDENTS.

It appears to me, from what I have observed, that almost all the railway accidents which have occurred have arisen from three causes.—

1. The want of a conductor in the front of the train to keep a sharp look-out.

2. The want of a direct communication between the conductor, driver, and guard.

3. The want of a proper danger-signal, in the event of a train coming to a stand.

In reference to the first point, it must at once be admitted, that it is of the utmost importance that a person be placed in the front of the engine, whose only business shall be to keep a sharp look-out (as on board of ship), observe the different signals on the line, and communicate with the driver and guard accordingly.

In regard to the second point, *the channel of communication between the parties*, it may be made through gutta-percha, or some other tubing, one tube for each carriage, in order that they may be separated as heretofore: the tube can be fixed on the top of the roof, or under it, at the bottom of the carriage, or at the side, as may be most convenient. The shape of the tube is taper, about as large again at one end as at the other, the small end being fixed in the front of the carriage, opposite to the large end at the back of the preceding carriage; the large end of the tube being covered with an India-rubber flange, having a hole in the centre to admit of the ingress and egress of the smaller end (the collapsible nature of the India-rubber rendering it air-tight): they will thus easily unite, leaving plenty of space for the oscillation which takes place: the holdfasts for the tube having a screw slide, it is easy to adapt them if one carriage should be higher than another. The channel being thus formed, the parties can communicate with each other, either by speaking or by different whistles, indicating different circumstances, or by other modes which could be suggested. If necessary, a communication between the conductor and passengers can be obtained by this plan, which is simple, inexpensive, and, from experiments made, quite practicable.

In reference to the third point, *the want of a proper danger-signal, which would not be mistaken or approached unobserved*, I would suggest that every guard should be furnished with a sufficient number of flambeaux, to be lighted either upon the principle of the lucifer-match, or by his lamp; each flambeau to be attached to

a small air-balloon, so that in a moment, if the train should come to a stand, the guard could start one from his van, allowing it to rise as high as may be deemed necessary; and taking another lighted in his hand, proceed on the line far enough to stop another train; then allowing the balloon to rise 8 or 10 feet, it would throw a glare of light upon the road, which could not be passed without being seen: the flambeau could be made to explode, if necessary: by this means the light, being elevated, could be seen in case of a curve in the road or any other impediment. J. S.

"SCRATCHES ON THE ROAD."

WITH reference to "F. S. A.'s" last amusing paper, though Schinkel designed Babelsberg, (not Babertsberg), I have doubts whether Persius has not been the architect to *carry out* the execution and details of the design. Some of the fountains and works in the grounds at any rate are assigned to him. Riegel, in Potsdam, is publishing a work in colours, containing twelve views of the castle, after originals, by Graeb.

I think the distinction should be clearly made between the *collection* in the Schloss (the Royal Palace), and that in the Museum, so designated, which faces this palace. Moreover, it should be borne in mind, that there is the Museum of Schinkel—finished in 1830, and called, till lately, the New Museum, and that there is behind this, and connected with it, the Museum by Stuler—now called the New Museum—which is in course of construction.

"F. S. A.'s" description of the Brandenburg gate, "formed of ten Doric columns, *five* on each side, supporting a *pediment*, on which is a car of victory," and "the brick and plaster partitions thrown up between the columns for the purpose of supporting the ugly doors," does not agree with the impression left on my mind by the original. I remember no *pediment*, but an attic over the entablature, on which attic is the car of victory; and not *five* columns on each side, but six, an equal number as usual, with high iron grille or palisading fixed in the depth of the propyleum. Perhaps the description of the advanced Guard houses, next the city, on each side, which have each a pediment over columns of an inferior height to those of the main gate, have been confused, in the rough notes of "F. S. A." with the account of the main body of the work.

I fully agree in what he says of Waagen's catalogue. N.

PROVINCIAL NEWS.

Peterborough.—The Dean of Peterborough, in moving the adoption of the annual report read at the late meeting of the Northamptonshire Architectural Society, said he was most anxious to throw open the cathedral to the public. He was making preparations to that effect, and hoped to make the cathedral verger at least as pure as the railway porter, prohibiting him from taking any fees.

Yarmouth.—The Wellington Pier being completed to a distance of upwards of 500 feet, the ceremony of opening it to the public took place on Monday in last week, in presence of a great concourse of people.

Slough.—The prices realised lately for ground at Slough averaged from 3*l.* to 12*l.* per foot for frontages, the lots averaging 100 feet in depth.

Little Tew.—The new church at Little Tew, in Oxfordshire, was consecrated on 27th ult. It is in the style of fourteenth century, and is very simple in plan, a plain parallelogram, with a north porch and sacristy on the north side of the chancel. There is a simple turret for one bell at the west end. The stone of the neighbourhood has been used throughout, with the exception of the font and window tracery, which are of box stone. The church is covered with Stonesfield slates, with a moulded stone ridge. The designs were furnished gratuitously by Mr. G. E. Street, diocesan architect, Oxford.

Amesbury.—The parish church has been undergoing a restoration, at a cost of upwards of 3,000*l.*; Sir Edmund Antrobus, Bart. the principal contributor. The church is now provided with oak low pews and seats, and a great increase of accommodation.

Deerhurst.—A subscription has been commenced for placing a memorial window in the parish church.——The land set apart for building purposes at the "Lenses," once the site of ancient Corinium, was put up lately for auction, but no purchasers were willing to come forward, there being a panic afloat as regarded the title, and the conditions being considered too imperative and costly.

Cardiff.—Mr. Rawlinson's report on Mr. Hawkshaw's plans for the drainage points out the difficulties to be encountered, and states that he considers the dimensions of the proposed sewers excessive: they are as under:—

	Lin. Yds.	ft.	in.
Outlet sewers, 6 ft. by 4 ft. of 9 in. work	1,700	0	0
Secondary sewers, 3 ft 9 in. by 2 ft. 6 in. of 9 in work	6,586	2	3
Branch sewer, 3 ft. by 2 ft. of 4½ in. work	9,764	0	0
Total length	18,050	2	3

Which Mr. Rawlinson estimates will cost about 17,068*l.* 16s. 2d. or, with gullies, man-holes, and ventilating shafts, &c. complete, about 21,000*l.* Mr. Rawlinson concludes his report by stating that though he cannot approve of the scheme as laid down in all its details, believing the sewers to be larger than is requisite, and the cost of the works consequently excessive, yet he considers that the sanitary condition of Cardiff ought to be no longer neglected by any prolonging of the drainage dispute. At a special meeting of the Local Board of Health, held last week, it was resolved that Mr. Hawkshaw should proceed with the specifications and the working drawings for the drainage, in order that tenders may be issued as early as possible.

Ipstones.—On 27th ult. the new agricultural school at Ipstones was opened. This is the first of a number of schools opened in Staffordshire for giving a practical education to the sons of farmers. The master was trained at Battersea. The cost is about 550*l.* The principal room is 70 feet by 18 feet, and is divided by a double curtain into two rooms: there are also two class-rooms, each 12 feet by 15 feet.

Newcastle-under-Lyne.—The church recently built in the Silverdale district was consecrated on Friday in last week. It is built of stone, and has a tower surmounted by a spire. It has been erected from the designs of Mr. Armstrong, of London, by Messrs. Holmes, of Liverpool. The building is devoid of any superabundance of ornament. It contains 515 sittings, 304 free. Independent of tower and spire, built at an additional cost of nearly 200*l.* the cost of erection will be about 2,000*l.* The church is in the Early English transition style, and is built of stone obtained in the neighbourhood, except the dressings, which are from Hollington quarries. The interior of the edifice consists of a chancel, nave, and north and south aisles, and the seats are open.

Wolverhampton.—The collegiate church restoration committee have adopted a deviation from the plan for restoring the pinnacles at the angles of the tower suggested by the mayor, and strongly recommended by Mr. Ewan Christian, who furnished drawings of the alteration, which consists in attaching a turret spire to the staircase turret which projects from the north-east angle of the tower. The mayor recollects the existence of several steps at this point, the remains of which have been exposed during the recent alterations. The spire is proposed to ascend to a height of about 30 feet, being twice the height of the pinnacles at the three other angles, and the estimated expense is from 150*l.* to 200*l.*

Bromsgrove.—The opening of the Corn Exchange took place on Tuesday in last week. It stands at the back of the Crown Hotel, in High street, and simply consists of a large room, lighted by five side windows and ten lights in the roof. Mr. Cotton, of Bromsgrove, was the architect, Mr. Gregory, the builder; and Mr. Read, the mason.

Loughborough.—A project has been set on foot at a public meeting held on Monday in last week for the erection of a town-hall here.

Liverpool.—The inhabitants are getting exceedingly impatient at the delay in reducing the price of gas from 4s. 6d. as arranged for by the company's Act, but which, while year after year pocketing the highest per-centage allowed by that Act, namely, 10 per cent. and accumulating a reserve-fund besides, the company has postponed under one pretence or another, and it now seems to be as far off as ever. Extensive operations for the supply of distant suburbs are being carried on, and new shares issued; but the clause as to reduction of price appears to be a dead letter. The recorder has therefore appointed an accountant to investigate into the state of the company's accounts. The reserve-fund, up to June, 1853, was 2,046*l.* The balance of receipts over payments was 48,231*l.* 0s. 10d. Out of this fund, the dividends paid in February were 22,521*l.* 5s. leaving a balance of 25,709*l.* 15s. 10d.

Southport.—Mr. Newlands, the borough engineer of Liverpool, reports to the authorities at Southport on the subject of draining that town in the most efficient and economical manner. Of three plans, he recommends one which involves the erection of a central pumping-station. The cost of the main sewer, outlet pipe, &c. would be 8,040*l.* and the annual charge, including interest, is estimated at 989*l.* 12s.

Workington.—Considerable excitement, *pro* and *con.* prevails here at present, connected with a movement for the construction of water-works for the supply of the town.

Penrith.—The Local Board of Health have reduced their rate of charges for the supply of water from the rental to the rateable value of property, or about one-half.

Rutherdale.—The new church of St. Patrick, in this chapelry of Barton parish, was consecrated on Thursday in last week. It consists of nave, chancel, bell-tower, &c.

Carlisle.—A scheme is on foot for the erection of a theatre in this city.

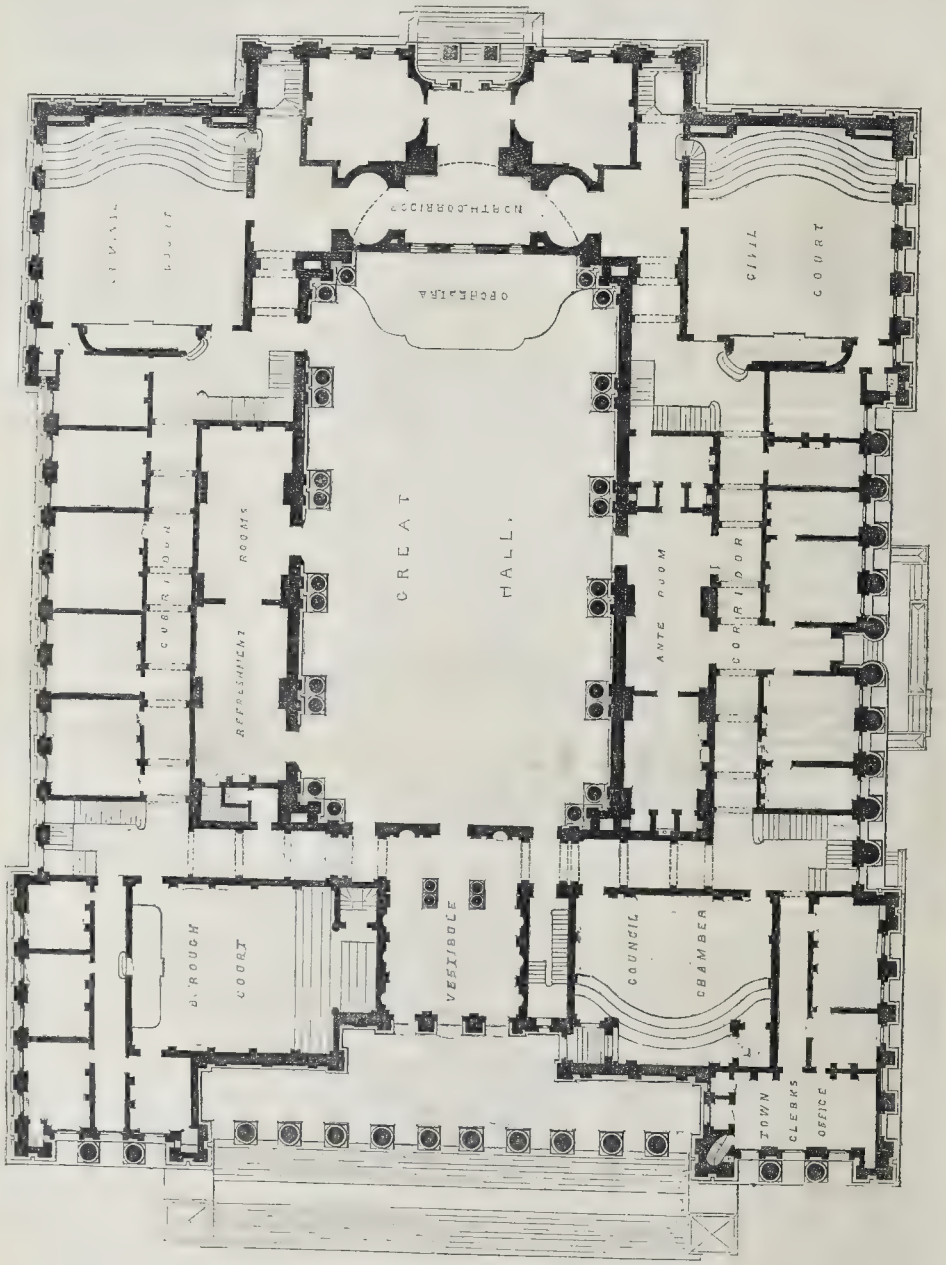
LEEDS NEW TOWN-HALL.

THE want of a town-hall and corporate buildings having long been felt in Leeds, provisions were made to obtain funds, and premiums were offered by advertisement for designs. From the drawings which were then sent in, the committee, with the assistance of Sir Charles Barry, awarded the chief premium, in December last, to Mr. Cuthbert Brodrick, and having afterwards determined on carrying out his design, with certain additions, the first stone of the intended building was laid on the 17th of August last. The contractor is Mr. Samuel Atack, who has undertaken to complete the building for the sum of 44,835*l.* The total cost, including the land, will be 51,335*l.*

Amongst the additions suggested was a tower, and in the view which we now give, Mr. Brodrick's design for this important appendage is introduced. This, however, forms no part of the present contract, and would involve an additional expenditure of about 7,000*l.*

The walls externally will be of stone. The form of the structure is a parallelogram of 250 feet by 200 feet. It stands on an elevated platform, and is surrounded by Corinthian columns and pilasters supporting an entablature and attic, altogether about 65 feet in height. The large hall rises out of the centre of the building to a height of 92 feet from the ground. The south or principal façade differs from the rest by having a deeply-recessed portico of ten columns, and a flight of twenty five steps leading up to the same, 105 feet in length, with large pedestals at the corners. The inter-columniations at the sides of the building are divided into two ranges of semi-circular-headed windows, which lessen its monumental character.

The great hall will be one of the largest, if not the largest room in England, its dimensions exceeding the great St. George's Hall, Liverpool, the Birmingham Town-hall, and other large buildings. It is 190 feet long (measuring above the vestibule), by 71 feet wide, and 73 feet high. The ceiling is arched and divided into panels. The sides of the hall are divided into five bays by coupled Corinthian columns and pilasters, 30 feet in height: and in each bay there is a window. The north end of the hall is semi-circular, and appropriated for an ample orchestra; at the south end there is a large gallery 40 feet deep, which extends over the vestibule. It is calculated to hold 8,000 persons. At each side of the hall there are refreshment-rooms, dress



LEEDS NEW TOWN-HALL.—GROUND PLAN.

ing-rooms, retiring-rooms, &c. The kitchen establishment connected with this portion of the building is on the basement floor. There are also on the ground-floor, at each corner of the building, three large law courts and a spacious council-room for the meetings of the corporation. The two law courts, intended for civil and criminal business when the assizes for the West Riding shall be held in Leeds, are at the north end of the building, the size of each being 53 feet long by 47 feet wide, and 45 feet high. The borough court and council-room are at the south end of the building, the former being 53 feet long by 39 feet wide and 40 feet high.

There are separate entrances to the different departments, and the whole building is connected by a corridor 10 feet wide, which runs round the large hall. How this is to be lighted does not appear. The plan is exceedingly good; the whole design highly creditable to Mr. Brodrick.

A public subscription has been opened for strengthening the walls, so as to carry the tower, if it should be determined to build it at a future time. It has been brought before the town-council twice, and will be brought again before them. The expense is the main obstacle.

Some have objected that the tower would be of "no use." The same *argument*, carried out, would reduce the building to four bare walls and a roof. A noble building is at one and the same time a symbol and an incitement; an evidence of the importance and intelligence of the community erecting it, and an inducement to every member of the community to maintain that importance and exhibit that intelligence in his own proper person.



NEW TOWN-HALL, LEEDS.—Mr Cuthbert Brodrick, Architect.

RESULTS OF THE CENSUS.

IN a shilling pamphlet under this general title, sold by Parker, of West Strand, Mr. E. Cheshire, Fellow of the Statistical Society, and one of the secretaries of the statistical section of the British Association for the Advancement of Science, gives a concentration of interesting and curious "Results of the Census of Great Britain in 1851," with a description of the machinery and processes employed to obtain the returns, and an appendix of tables connected with the census. Every one ought to possess this compendium of the population of which he is a unit; but we may give a brief abstract of some of the more curious or interesting results, at same time referring generally to an article by Mr. Octavius Hansard, in our pages of 6th August last.

It is not generally known that the original census returns extended, in manuscript, over thirty-eight thousand volumes, and that it has occupied the census department upwards of two years to reduce these returns to the form in which the first of two portions in which the whole is to appear, was published, namely, to the limits of three thick folio volumes. Indeed, the details connected with the taking of the census are as curious as anything in the census itself.

Great Britain was apportioned into 38,740 enumeration districts, and to each of them a duly qualified enumerator was appointed. The extent of this army of enumerators, and the labour of engaging their services on the same day, may be illustrated by stating that it would take 13½ hours to count these mere counters themselves, at the rate of one a second, and that the army recently encamped at Chobham would not have sufficed to count or enumerate a *fourth* of the population of Great Britain. The number of householders' schedules forwarded from the Census Office was 7,000,000, weighing 40 tons. The precautions taken to secure accurate returns involved the final process of a minute examination and totaling, at the Census Office, of twenty millions of entries, contained on upwards of one and a quarter million pages of the enumerators' books,—upwards of 38,000 in number.

The pamphlet alluded to is a digest of the varied contents of the three folios into which these books themselves were digested. It is, therefore, a sort of quintessence of the census returns.

A method of realizing to the mind some sort of definite idea of the 21,000,000 of people in this country is arrived at by considering their number in relation to space: allowing a square yard to each person, they would cover seven square miles. Again, if all the people of Great Britain had to pass through London in procession four abreast, with every facility, for twelve hours daily, Sundays excepted, it would take nearly three months for the whole population of Great Britain to file through at quick march, four deep. The excess of females in Great Britain was 512,361, or as many as would have filled the Crystal Palace five times over. The proportion between the sexes was 100 males to 105 females,—a remarkable fact, when it was considered that the births during the last thirteen years had given the reversed proportion of 105 boys to 100 girls. The increase of population in the last half-century was upwards of 10,000,000, and nearly equalled the increase in all preceding ages, notwithstanding that millions had emigrated in the interval.

Taken at hazard, 67,669 families were analyzed into their constituent parts, and they gave some curious results. About 5 per cent. only of the families in Great Britain consisted of husband, wife, children, and servants, generally considered the requisites of domestic felicity; while 893 families had each ten children at home, 317 had each eleven, and 64 had each twelve. The number of the houseless classes, *i.e.* of persons sleeping in barns, tents, and the open air, on the night of the census, was 18,219.

About 4 per cent. of the houses in Great Britain were unoccupied in 1851, and to every 131 houses inhabited or uninhabited there was one in course of erection. In England and Wales the number of persons to a house was 5·5; in Scotland, 7·8, or about the same as in London. The number of inhabited houses had nearly doubled in the last half-century, and upwards of 2,000,000 new families had been founded. Some remarks by Dr. Carus, on English dwellings, are cited. The English (says the Doctor) divide their edifices *perpendicularly* in houses, while on the continent and in many parts of Scotland the edifices are divided *horizontally* into floors. The definition of a "house," adopted for the purposes of the census, was "isolated dwellings or dwellings separated by party-walls."

The number of cities and towns of various magnitudes in Great Britain was 815, viz.,—580 in England and Wales, 225 in Scotland, and 10 in the Channel Islands. The town and country population was equally balanced: 10,500,000 against 10,500,000. The density in the towns was 3,337 persons to the square mile; in the country only 120. The average population of each town in England and Wales was 15,500; of each town in Scotland, 6,654. The average ground area of the English town was 4¾ miles. In 1851, Great Britain contained 70 towns, of 20,000 inhabitants and upwards. In 1801, the people of England were on an average 153 yards asunder; in 1851, only 108 yards. The mean distance between their houses in 1801 was 362 yards, in 1851 only 252 yards. There is an increasing tendency of the people to concentrate themselves in masses.

London extends over an area of 78,039 acres, or 122 square miles, and the number of its inhabitants, rapidly increasing, was 2,362,236 on the day of the last census. The author of the pamphlet illustrates this number by a curious calculation. A conception of this vast mass of people might be formed by the fact, that if the metropolis was surrounded by a wall, having a north gate, a south gate, an east gate, and a west gate, and each of the four gates was of sufficient width to allow a column of persons to pass out freely four abreast, and a peremptory necessity required the immediate evacuation of the city, it could not be accomplished under 24 hours, by the expiration of which time the head of each of the four columns would have advanced no less a distance than 75 miles from their respective gates, all the people being in close file, four deep.

PROPOSED IRON ROOFING FOR COLOGNE CATHEDRAL.*

IT is asserted that Cologne Cathedral is to have a roof of iron,—a decision so important that it requires the fullest examination by practical and scientific men. The omission to hear all and every party is, in such cases, fraught with consequences which can be no more remedied if the work has been once effected and completed.

There has never been any doubt but that the *Dom* of Cologne should be executed, at least in its great *ensemble*, as it would have been by its daring and ingenious originators. That they surely did not intend an iron roof requires no demonstration, and an innovation in such a vital point could only be admitted, if the most cogent reasons were to operate in its behalf—the more so as the choir has already a wooden roof, which surely no one intends to replace with one of iron. The design of such a building is a *whole*, where not only form and shape, but even the materials are co-ordinate to each other. Thus, every innovation is *primâ facie* hazardous, and some reverence should, moreover, be paid to the thoughts planned out by the great masters of the middle ages. But these, *á priori* grounds may, in this instance, be strengthened by the experience of the present time. This has been already the case in France, where they bitterly regret to have yielded to the spirit of *innovation* too hastily. In Rouen, they have capped the middle turret of the cathedral with a helmet, as it were, of cast-iron, which, besides its architectural ugliness, has endangered the whole building to that extent, that it is thought necessary to remove it altogether. But it may be said that this is something quite different from the mere roofing of the nave contemplated at Cologne. But France supplies us with another fact, quite bearing on our subject—the roofing of the *Cathedral of Chartres*. The old roof, which was burnt in 1836, was subsequently (1836—1841) replaced by a new one: instead of the old framework of oak and chesnut, the naves were spanned over by an iron structure, and covered with copper plates. As far as the latter are concerned, they have become already so much oxydised, that they have begun to destroy the stone-masonry and ornaments, and a removal of the copper and its replacing by lead has been decided upon. But the use of iron has been equally doubtful in many other cases. *M. Lassus*, who is the architect not only of the Cathedral of Chartres, but of Notre Dame of Paris and its *Sainte Chapelle*, has assured the writer of these lines, that, if the costs should not form an insurmountable obstacle, he would propose to have the Cathedral of Chartres roofed *just in the same way*, as it had been done of old. The same artist declares himself peremptorily against this innovation, which, besides many inconveniences, presents no advantage whatever. Oxydation can never be properly obviated, and will injure the stone to a less or greater degree. Moreover, the danger of fire in using wood for roofing is not so great as might be thought, especially if the procedure of *Bougy* be used, which renders it almost indestructible. The Cathedral of Paris has still its old roof, built in the thirteenth century, as is the case with many others. That of Cologne also has never been destroyed by fire. At any rate, the adaptation of iron for large roofs, imposed on huge and high buildings, of a complicated architectural construction, ought to be a subject of great doubt and consequent hesitation with those who control the erection or restoration of such world-famed works as the Cologne *Dom*.

* By the Councillor of Appeals M. A. Reichensperger.—Translated from the *Cölner Domblatt*.

LECTURES ON ARCHITECTURE BY MR. RUSKIN.

MR. RUSKIN is delivering a series of lectures on architecture at the Philosophical Institution, at Edinburgh. In the first, "On Domestic Architecture," the lecturer, after referring to the beauty of the position of the city, pointed out a sketch of a window of which he said he had counted in Queen-street, and on one side of York and Picardy places, 678! This, he remarked, was not at all interesting or entertaining, and argued something decidedly wrong in the architects of the different houses. Adverting to the three styles of architecture,—the Horizontal or Greek, in which a lintel was thrown across from point to point; the Arched style, to be seen in the Coliseum, in aqueducts, baths, &c. changing gradually into what the French called Romanesque, and which he might call by the name of Roman; and then there was the Gothic style,—he said the Greek style was essentially barbarous, because weak in construction and ugly in many types of form. He had seen the Pointed arch of the thirteenth century stand earthquakes without exhibiting a flaw; while the houses which we built sixty years ago in the Horizontal Greek style were already cracked or falling. And not only was the Pointed window of the Gothic style the strongest, but it was also the most beautiful form. The pointed arch and the gabled roof of the Gothic style could never be improved, and were the only architecture which would ever be appropriate for our northern people. Mr. Ruskin then referred to the progress of tower-building in modern times, alluding first to the common wall tower of Italy, along the fastnesses of the Appennines and the ramparts of the great Italian towns, next to the common sacred tower, the peculiarities of which he pointed out, and then to the peaked instead of the flat top, in the country of the Alps. These he recommended as peculiarly fitted for domestic architecture, referring to Holyrood Chapel and the Old Tolbooth as specimens of them in Edinburgh. The very terms—turret, spire, belfry, tower—were interwoven with our language and literature, and could not be dispensed with. But all those things connected with Greek architecture were useless in art, in poetry, and would only remain to later ages as monuments of the patience with which the people of the nineteenth century sacrificed their feelings to

fashion and their intellects to form. It must be admitted that there was neither romance nor comfort in waiting at any of our present house-doors in a shower of rain, and he recommended that the next house built should have a small Gothic porch out from the door, walled in on both sides, a pointed arch entrance, gable roof, with bow-window, sustained on a good carved bracket.

SOCIETY OF ARTS' PREMIUM LIST.

From the prefatory notice attached to this list it appears that the subjects included in it have been suggested by the members of the thirty standing committees of the society, which are composed of men actually engaged in the different departments of industry they severally represent. A guarantee is thus given that the desiderata here recorded are not speculative or theoretical, but are such as are felt to be wants by those best qualified to give an opinion. As the list embraces 135 subjects, it will be obviously impossible to do more than glance at them in general terms.

With so vast and comprehensive a list, order and method are absolutely requisite, and that arrangement which would naturally suggest itself to most minds has been adopted, namely, the subdivision of the Great Exhibition. In the section of "Raw Materials" we find that essays are sought for on the chemical composition of rocks, on the properties of slate, flag, and other stones used for paving, and on the properties of granite; also for a new mode of protecting fine iron castings from corrosion; and for an essay on the various fluids used for lighting. In the second section, that devoted to "Machinery," premiums are offered for improvements in the furnaces of manufactories, for the consumption or prevention of smoke, for a cheap and simple mechanical register to be attached to cabs, and for the best design and working drawings of a model house, suitable to the general requirements of the industrial classes. In the departments of "Manufactures," we find the following:—for the best specimen of a cistern, suitable for domestic purposes, made of glass in one piece; for an essay on architectural and decorative ornaments, and the materials employed; and for improvements in the manufacture of bricks.

The opening meeting will be held on Wednesday, the 16th inst. when an address will be read from the Chair, and the sixth annual exhibition of inventions will be opened.

INSTITUTION OF CIVIL ENGINEERS.

Amongst the subjects for communications for which premiums are offered by the council in the ensuing session are the following:—

The best system of forming artificial foundations, showing the ratio of pressure to surface, and the soil best calculated to sustain heavy structures; illustrated by the best examples in modern practice, and by accounts of the failures of large works.

The history and practical results of timber and iron piling for foundations, with notices of mechanical modes of driving.

The relative value of various kinds of natural stone, available in Great Britain for the purposes of construction; with experiments on the law of increase of the crushing force, of short blocks of stone, with their diameters.

On brick and tile making, and the capability of introducing new forms for engineering and architectural purposes; with the processes most useful to emigrants and settlers.

The laws of the strength of cast and wrought iron, under the various conditions of tensile, compressive, transverse, tortional, impulsive, and other strains; with examples illustrative of the co-efficients employed by eminent practical authorities, in the construction of works.

The construction of girder bridges, whether of trussed timber, or wooden lattice; of cast iron, trussed or plain, or combined with wrought iron, in simple or compound triangulation; of wrought iron lattice work; or of plate iron rivetted sides with cellular top and bottom.

The construction of suspension-bridges with rigid platforms, and the modes of anchoring the stay chains.

The drainage and sewage of large towns; exemplified by accounts of the systems at present pursued, with regard to the level and position of the outfall, the form and dimensions of the sewers, the prevention of emanations from them, the disposal of the sewage, whether in a liquid or solid form, and of the arrangements for connecting the house drains with the public sewers.

On the application of machinery, combined with mechanical power, and the means of transporting manure and produce, on large farms and agricultural establishments; and on improvements in the plan of the works and buildings, and the "plant" employed.

At the first meeting of the session on the 8th, Mr. J. Rendel, president, in the chair, the paper read was, "On the Speed and other Properties of Ocean Steamers, and on the Measurement of Ships for Tonnage," by Mr. A. Henderson, Assoc. Inst. C.E.

DUDLEY SURVEY: HOW SURVEYORS DIFFER.

The following tenders have been received for the survey, general plan of the district, detailed plans of the town, with a reference and statement of quantity for each house, garden, and field; also the particular quantity of land damaged in each field by mining operations. The district contains 4,000 acres, and upwards of 7,300 houses, besides collieries, iron-works, &c. The plans and levels to be subject to the approval of the General Board of Health.

Mr. R. C. St. Clair, Atherstone ...	£2,750	0
Mr. Henry, Manchester.....	2,029	0
Mr. E. Gotto, Westminster	2,029	0
Mr. E. S. Gisborne, Derby	1,996	0
Mr. W. W. Fereday, Wednesbury ...	1,765	0
Mr. D. Lewellau, London	1,693	15
Mr. W. Tayler, Wolverhampton ...	1,600	0
Messrs. A. and R. Reed, London ...	1,400	0
Mr. H. Roper, Doncaster	1,200	0
Mr. E. Appleton, Torquay.....	1,200	0
Mr. G. Gilmour, Stourbridge.....	1,020	0
Mr. T. Thornburn, Rugby	950	0
Marshall and Tuthilt, Westminster	750	0
Mr. J. W. Cole, London	585	0
Mr. E. W. Salmon, Nottingham or Bedford	575	0
Messrs. Hyde and Co. London	300	0

NOTES AND INQUIRIES.

ARCHITECTURAL AND ARTISTICAL.

1. In an article on "Bell-hanging," from the *Edinburgh News*, it is asserted that "The different forts along the line of the great Roman wall, were connected with speaking-tubes of copper." Mr. Bruce, in his work on the "Roman Wall," p. 61, 2nd edition, calls this a "traditionary fiction."

2. In a paragraph on "Gilston House," from the *Herts Guardian*, it is stated that there is "an effigy of Robert de Roos, a Knight Templar, in Eastwick Church, and a cast of it, with copy of inscription, in the entrance-hall of Gilston House." In the *Journal of the Archæological Institute*, vol. 1, p. 49, a writer, "W. S. W." gives an opinion that "there does not exist a single effigy of a knight of this order in this country." May I ask, through your columns, on which side does the truth lie in both these instances? Beta.

Can oil or anything else be advantageously used (without spoiling the colour of the stone) on freestone to counteract damp in a wet country? The freestone of new church windows has a tendency *to become green:* they are recently put up.

What was the situation in the city of London of the ancient Monastery or Abbey of Grace: the authority for it? Reader.

Smoke Consumer.—I find the following note in a journal of 1843:—"Mr. Rodda has patented a simple plan for the consumption of smoke. It is done by partitioning off a portion of the furnace with fire-brick, so that when the coal has been converted into coke in the outer part, it is thrust into the division at the back, by which means the smoke from the coal just put on, being obliged to pass over the fuel already coked, is consumed. Thus a few bricks dividing a furnace will produce an effect which has been long desired, but never yet attained."

Is any danger likely to arise from the use of hollow bricks and perforated bricks in the building of houses, should such houses at any time be on fire, attention being directed to the explosive force of confined air heated by that element? P.

ST. MICHAEL'S CHURCH, OXFORD.

It would be quite worth your while to take a journey hither for the purpose of viewing the application of a very strange material as an exterior covering to the roof of St. Michael's Church. No doubt what has been done, and what is going to be done, is meant to be exceedingly pretty, but as it sometimes happens that the cleverest things are not always able to explain their own meaning, divers citizens of Oxford wish to be informed why the colouring has been bestowed on the *outside* instead of the *inside* of the roof. That the church has been turned inside out there can be no question: this process is now so common among "church-restorers" that one would hardly have noticed the unceremonious treatment; but the vexatious question still remains, what mean the bright pink and the jet black which flaunt so fairly on the outside?

The oddity of the outside appearance induces many to enter the church to see what is going on: a stranger asked one of the workmen for what purpose the huge timbers with arches were placed in the roof: the mechanic cast his eyes up to the work he had helped to perform, and, dropping them, confessed that he really could not tell. He would have been doubly ingenious if he could, for the timbers in question are without an ounce of pressure upon their backs: well-ordered varlets, looking trim, but doing nothing.

But what, you will ask, do I observe at the very entrance to the chancel? An arch springing aloft where such a feature was unknown before, and consequently needing something to lean against, which something appears in likeness of a brick buttress jutting into the aisle and appearing but ill-disposed to do its duty. Apertures too old to be retained are blocked up, and others worse than useless have been made.

An Observer.

INSANITARY STATE OF FULHAM.

A practical illustration of the Home Secretary's sensible advice to the reverend members of the Edinburgh Presbytery of the Church of Scotland, has just been given by the Bishop of London, who has for some time been actively engaged in endeavours to remove the physical causes of disease at Fulham, the parish in which his lordship resides; and last week he headed a deputation, comprising also the rector and other residents, to the Metropolitan Sewers Commission on the subject. The bishop's efforts have not been restricted merely within the limits of his own parish. When the cholera broke out at Newcastle, instead of memorializing Government for a fast, at a moment when good living is known to be far more prudent and proper, he issued some well-timed remarks to his metropolitan clergy, on the sanitary condition of the metropolitan poor. Not satisfied even with a mere appeal to the Sewers Commission on the sad state of the sewerage and open drains in Fulham, and the want of a sufficient supply of good water, he himself recently had the main sewer in the high street of Fulham opened and surveyed, when it was found that it sloped the wrong way; for, instead of falling towards the common outlet, at present in the Thames, it sloped the other way! Here was a rut out of which the waggoner would have long prayed in vain to Jupiter to lift his wheel till he set his own shoulder to it. This very embodiment of the practical wisdom of the ancients appears to have been present in the mind of the bishop while urging the Sewers Commissioners to do something for the sewer-rate exacted from the parish, for his lordship, in doing so, said he was well aware "it was their own duty to put their shoulders to the wheel towards effecting the objects in view." The bishop, however, stated that they had not been wanting in their exertions to rectify what they complained of, and that they had on this principle subscribed and got a good supply of water; but that it was really doubtful whether this did not aggravate the evil, so long as the Commissioners did not see better to the sewerage and drainage than they had done.

The excuse of the Commissioners was a valid one, namely, want of funds,—but it is an excuse of which this great metropolis itself ought to be heartily ashamed. While the Metropolitan Sewers Commission is in a state of helpless and pitiful bankruptcy, without power either to do what is necessary, or to lay on increased rates, payable by the inhabitants, till they are enabled to do what is necessary,—poor miserable towns and villages throughout the country are busily engaged in carrying out effectual sewerage and drainage of their whole districts, for which they have willingly and thankfully taxed themselves. We hope

this great reproach will not much longer apply to the metropolis. The Home Secretary has promised to take the whole subject into consideration next session, and we incline to believe that "next session" will, in this respect, be something more than a phrase denotive merely of "good intentions," disappointment, and hope deferred. Till then, however, there is very little hope of anything effectual being done for Fulham, unless the owners of property there agree to tax themselves for the purpose, as the Commissioners advised them to do. What a frightful waste of money in and about London there must have been in sewers during the last twenty years!

THE KENSINGTON PIGGERIES.

At the Kensington Petty Sessions (Nov. 2, before Messrs. Lloyd and Nixon) Mr. Cornell, the clerk to the Kensington board of guardians, appeared before the bench in support of several informations laid by Lovell, the inspector of nuisances, under the provisions of the "Nuisances Removal and Disease Prevention Act of 1848," and orders were made in each case for an instant removal of the nuisances.

One case was that of Charles Marks, a pig-dealer of Gore-lane, opposite to the site of the Crystal Palace, and abutting upon the property of the Royal Commissioners for the University of Arts. The inspector charged him with keeping a number of swine, and also with having in his yard an immense quantity of dung in a decomposed and dangerous state. He said the case was a very singular one. The defendant's yard was in two parishes, and he had pigsties ranged in each parish. When he first served a notice upon Marks, the pigs and dung were in the parish of Kensington. On a second visit, to see if the defendant had complied with the notice, he found that the nuisance was removed out of Kensington into the parish of St. Margaret's, Westminster.

Mr. Smith, the inspector of nuisances for St. Margaret's, Westminster, said he attended by desire of their board of guardians, and was instructed to state that St. Margaret's was willing to co-operate with Kensington parish in putting down the piggeries in Gore-lane. "Three years ago," said the sanitary official, "we made you the same offer, but somehow the Kensington people refused to join us. If you had done so at that time the nuisances in Gore-lane would long since have been removed. I have been to this man's yard for three years past, and he has defeated me by getting into your parish."

A Magistrate.—Well, you will not find Kensington refuse to join St. Margaret's now. But what can be done? The inspectors suggested that they should visit the defendant's yard in company, and take out process for each parish simultaneously, and they left the court for that purpose.

Notices of Books.

The Law of Copyholds, in reference to the Enfranchisement and Commutation of Manorial Rights and the Copyhold Acts; with Notes, &c. By Leonard Shelford, of the Middle Temple, Barrister-at-Law. W. Maxwell, 32, Bell-yard, Lincoln's-inn, London. 1853.

The author's aim in preparing this work has been to comprise, in a comparatively narrow compass, all such points on the law of copyholds and their incidents as will probably be brought under consideration, or be found useful in carrying into effect the statutes for the enfranchisement and commutation of manorial rights. The work possesses the advantage of containing the latest information on the subject, including recent decisions. It is made very accessible by a good index. It also contains the forms and directions of the Copyhold Commissioners, with a list of cases, and on the whole we regard it as a useful and valuable compendium.

Notices of Roman Inscriptions at High Rochester, Risingham, and Rudchester. By the Rev. T. Surridge. Longman and Co. London. 1853.

This is mainly a reprint of some angry letters between the author and "A Member of the Archæological Institute," touching the meaning of certain inscriptions, in which, however, as it seems to us, Dr. Surridge certainly has the best of it. Copies of the inscriptions are given, so that the scholar may judge for himself. The inference drawn by the Doctor from his own readings is, "that in his second invasion of Britain, Cæsar aimed at its conquest, not as an empty name, and neither did he retire, nor was he compelled to retire, from it without first securing the conquest he had made."

Sharp's Gazetteer of the British Islands, &c. Part XXII. London: Longman and Co. 1853.

This really excellent work is now completed, with an appendix of valuable matter of a general description. Having already recorded our favourable opinion of its merits, we need say little more in recommendation, than that it is a work which every one ought to possess. Its two volumes of intensely condensed matter are said to be the fruit of five years' hard labour, and we believe it, knowing, as we do, of an instance in which three years' fair work for several hands was expended on a larger but less concentrated production of a similar kind. So far as we have time and opportunity for judging, Mr. Sharp's work appears to be exceedingly correct as well as minute in its details; but we have no expectation that it is perfectly so in all respects, for a perfectly correct gazetteer is a phenomenon that never was produced and never will be. Suffice it that none, we dare say, ever will be much more so than the one now before us.

Glenny's Garden Almanac and Florists' Directory for 1854. By George Glenny, F.H.S. London: Cox, King's-street, Covent-garden.

This little book contains directions for the management of an amateur's garden during the year, lists of flowers, plants, &c.—of provincial and continental nurseries,—new floral and other productions, &c. The author is well known as the writer of various other works on gardening. We should like him all the better were he to speak with a little more respect, if not preference, for recent endeavours to associate the beauty of favourite flowers with elegance of vases and other art accompaniments. It is not exactly the way to cultivate or promote a love for the beautiful in flowers themselves,—the object of every flower gardener—to speak lightly of such associations, as the author does in reference to several little engravings of vases for flowers or flower-pots for which he acknowledges himself indebted to the *Art Journal*. "It would appear," he says, "that nothing will do without embellishment . . . . nothing goes down without embellishment; and perhaps these new fashions," &c. &c. "will tempt people to buy plants for the sake of sporting their novel and elegant receptacles." As well, we think, sport the elegant receptacles as the elegant flowers. Endeavours to produce a beautiful flower-vase ought not to be sneezed at by him who professes to aim at producing a beautiful flower.

Miscellanea.

Fitzwilliam Museum, Cambridge.—The annual report of the Syndicate of this Museum states that the building is in good order; continuing firm and stable, without settlement of any kind. The sculptures, antiquities, and books are in good condition. The same may be reported of the pictures, with two or three exceptions. The state of the engravings is in some respects not so satisfactory. Since the last report the collection has been enriched by a set of casts from the Halicarnassus marbles, presented by Lord Stratford de Redcliffe, and twelve elaborate copies of Mosaic pictures still existing in the basilicas of Rome, and of dates ranging between A.D. 492 and A.D. 1292, have also been received from Mr. C. R. Cockerell, R.A. The number of persons who have visited the museum during the year ending April 30, 1853, amounts to 36,356; and it is gratifying to be able to add that no instances of damage, loss, or misbehaviour have occurred during that period.

Chief Prizes awarded by the French Institute in 1853.—In Sculpture by Judgment of 10th September.—Second grand prize to M. Henri Michel Antoine Chapu (of Mée), pupil of MM. Pradier and Duret. Honourable mention to M. Amédée Donatien Doublemard (of Vevrius), pupil of M. Duret. In architecture; 17th September.—First great prize to M. Arthur Stanislas Diet (of Ambroise), pupil of MM. Blouet and Duban. Second great prize to M. Ernest Georges Coquart (of Paris), pupil of M. Lebas. In painting; 24th September.—Second great prize to M. Henri Pierce Picou (of Nantes), pupil of M. Delaroche. Great prize to M. Jules Elie Delanney (of Nantes), pupil of M. Flandrier.

Art in Manchester.—The exhibition of paintings, &c. at Manchester was visited, in fourteen hours, lately, by 5,300 of the working classes, who were admitted at a charge of 2d. each.

Accidents to Workmen.—Many of our readers among the working classes, and not a few among their employers, and others, will thank us, we believe, for drawing their attention, as we now desire to do, to a decided improvement in the treatment of accidents. One of the most disagreeable and cumbrous, as well as dirty, troublesome, and unwholesome articles hitherto in use in such cases, has been the poultice. Now a cleanly and effectual substitute for the poultice has been invented and patented by Mr. Markwick, who obtained for it a prize medal at the Great Exhibition of 1851. The material is a species of soft, felted, spongy fabric, backed with a thin layer of indiarubber, which prevents the escape of the warm moisture constituting the poultice, and with which the "spongeo-piline" fabric, as it is called, is saturated when about to be applied. The new material is made up in all sorts of shapes suited to accidents, such as finger-stalls, kneecaps, &c.; and as it is the warm moisture alone which really constitutes a poultice, and not the bread or other absorbing substance in which it is applied, the new substitute is not only far more cleanly, comfortable, and manageable, but may be repeatedly used, as it only needs occasional washing, so that it is much cheaper in the end than the usual application; and besides, it may, in innumerable instances, be used without interfering with the workman's employment, in cases where the ordinary cumbrous poultice would throw him idle for days or even weeks—an important consideration to the workman, and not seldom to his employer as well. We therefore think this is a decidedly good thing in its way, and deserves to be specially brought under the notice of workmen and their employers. It is rapidly coming into use in the hospitals, we understand, and amongst the surgical profession generally; but it may now be had, we believe, from most of the druggists and chemists in and about the metropolis, as well as a modification of the same invention, said to be very useful in the removal of rheumatism and in protection against colds, &c.

Anastatic Printing.—A pamphlet has been issued by Mr. C. J. Jordan, of Lansdowne-terrace, Caledonian-road, containing a practical treatise on this interesting subject, with minute details, which will enable any amateur or workman to make *fac-similes* of engravings, or other printed paper, old or new, at very small cost. Mr. Jordan is an original investigator, and his pamphlet contains the results of his own experiments, although some of them have been anticipated by others. He states that he has obtained anastatic reverses from prints upwards of a century old, by simply operating on them in the way he has indicated.

Alleged Fraud on the Liverpool Corporation.—At the Liverpool police-court on Saturday week, Mr. Simon, barrister, preferred charges against Joseph Rowson and William Clark, for an alleged conspiracy to defraud the corporation of upwards of 1,700*l*. Mr. Rowson was contractor for bricks to the borough gaol at Walton; and it was the duty of Clark, as clerk of works, to go through the brick-fields from time to time and check the delivery notes given to him by Rowson. In making these returns, falsifications of the most extreme character were said to have been effected, a charge for nine "stools" in the brick-fields having, it was alleged, been made, whereas there were only eight, and that by these means the sum of 5,124*l*. 18s. 9d. had been paid by the corporation for 6,157,230 bricks alleged to have been delivered, while, in reality, only 4,186,718 were made, by which the corporation had been defrauded of upwards of 1,700*l*. After a long examination the prisoners were remanded, bail being taken for both of them.

A Thorough Workman.—A case of considerable importance was decided on Friday week in the Small Debt Court, Port-Glasgow, by the Sheriff. An extensive builder was solicited for employment as a joiner by an individual professing to be a thorough workman. He was accordingly employed, and on pay-day it was found that he had made a thorough botch of his job, and his master offered to pay him at the rate of 20s. a week, which was resisted. The Sheriff, after hearing parties and calling evidence, decerned for the defendant, inasmuch as the pursuer was a day longer in doing the work than he ought to have been, that a good workman would take three days to put it right, and that the loss for damage to material would more than swallow up the difference of time in his favour.

A Cholera District.—Off Bethnal-green is a double footway, called Gibralter-row; a low brick wall divides it; it is a horrid pest-place, and at the top of it lives a wealthy man called a "contractor," who has a yard and outhouses, in which is found a high mound of dirt, filth, and stench-matter, as high as the first-floor, for some hundreds of yards! The exhalations of this worse than piggery work well for the doctors. What are the local authorities about?

C. N.

SOCIETY OF ANTIQUARIES OF NEWCASTLE-UPON-TYNE.—The November meeting of this society was held in the Castle of Newcastle, on Wednesday in last week, Mr. J. Fenwick in the chair, when, after some minor procedure, the meeting resolved, at the suggestion of Dr. Bruce, to order the Roman inscriptions preserved in the castle to be engraved. Mr. J. Clayton, the Town Clerk, then read some "Notes on the Housesteads, Mile Castle," illustrated by drawings by Mr. Story. A report of the paper appears in the *Gateshead Observer* of the 5th inst. Several voussoirs and the key stone of the arch were found at this Mile Castle, which, like the rest, was in form of a parallelogram, having its corners rounded off.

SANITARY SCAMPING.—Wilson, a bricklayer, was lately summoned to the Whitechapel County Court to compel him to pay 11*l.* 15*s.* money laid out by a house proprietor in cleaning out a new pipe-drain leading to a sewer, and which defendant had just recently laid, and in cleansing and filling up a cesspool connected with it, which defendant had undertaken to do, and had "made a job of," as he had intimated to plaintiff, after throwing the brick rubbish among the soil and covering it up, the result of which was, that the matter choked the new-laid drain and rendered a soil-pan connected with it useless. The judge, Mr. Sergeant Manning, indignantly pronounced a verdict against the defendant for the full sum craved, with all costs, to be immediately paid.

METROPOLITAN MARSH LANDS.—A meeting was held on 1st inst. at Belvidere, Sir Culling Eardley in the chair, and present, also, Lord Shaftesbury, Mr Edwin Chadwick, C.B. and Mr. Rammell, from the Central Board of Health, together with various gentlemen connected with the north-east and south-east of the metropolis; when resolutions were agreed to recognising the importance of contemplated works of drainage in a sanitary as well as agricultural point of view being made general for the whole of the eastern district of the metropolis, and a committee was appointed to consider and report on the further proceedings desirable to be adopted, and as to the requisite works, and the legislative aid likely to be needed, preparatory to representations being made by deputation to Lord Palmerston.

THE EDINBURGH SCHOOL OF ARTS.—The winter session of this institution was opened last week by a lecture from Dr. Lees, on "The Importance of Mathematics as a Study by itself, and particularly in its Application to Natural Philosophy." After the lecture, Sheriff Gordon addressed the students, and informed them officially that Government had resolved to attach a scholarship to the school. That a certain sum—he believed at present 50*l.* a year—was to be granted to the student selected for the scholarship, to enable him to attend the Government schools and institutions in London. There had been most properly attached to the grant, he added, a wise provision, that Government should expect that for every 50*l.* scholarship that it provided, the institution would itself provide another to correspond with it.

FOREIGN.—According to the *Literary Gazette*, Prince Metternich has just presented the town of Brussels with a bronze bust of Charles V. in recognition of the lengthened hospitality shown to the Prince by the Belgian capital. It is to be placed in the grand saloon of the Hotel de Ville.——The expense of the marble groups on the Schloss-bridge, at Berlin, including the cost of their erection, is 85,000 thalers. Another group is to be added next year, and in the following it is hoped the whole will be finished.

THE PAVING OF NEW SMITHFIELD.—A few days ago, according to the *Morning Advertiser*, the committee opened the tenders for the pavement of the new market with granite cubes, the laying of the channels, the flagging of the footway, and the macadamisation of the roads and approaches. There were five candidates, and the amounts of the tenders were as follow:—The highest was 70,000*l.*; the next, 64,500*l.*; the third, 60,418*l.*; the fourth, 56,500*l.*, and the lowest, 50,800*l.* which tender was accepted by the committee. Mr. Chadwick, the City stone paviour, was the successful contractor. He has engaged to deliver up the market in perfect order to the committee in six months from the period when the ground is pronounced to be ready for him to enter upon the work.

OXFORD ARCHITECTURAL SOCIETY.—A meeting was held in the society's rooms on Wednesday, the 2nd inst. the president, the Principal of Brasenose College, in the chair. After routine business, the Rev. J. E. Millard, M.A. of Magdalen College, read a narrative of a tour made with another member of the society on the Rhine and its neighbourhood, in the recent long vacation: it included notices of architectural antiquities of Liege, Aix-la-Chapelle, Cologne, Mayence, Frankfort-on-the-Main, Worms, Heidelberg, Strasburg, &c. illustrated by drawings and engravings, and was a continuation of the former papers on Belgium and Normandy.

THE WELLINGTON MONUMENT AT MANCHESTER.—The competing models for the memorial to the late Duke of Wellington, to be erected at Manchester, have been examined by the judges appointed for the purpose—the Bishop of Manchester, the Earl of Wilton, and the Earl of Ellesmere; and their choice has fallen upon one by Mr. Matthew Noble, of London. The committee are to pay 7,000*l.* to the successful competitor, which sum is to cover every expense connected with the erection of the statue in bronze, the pedestal, &c.

MUNICH: ARTIST PROCESSION IN HONOUR OF KING LUDWIG.—On the 29th ult. the artists of Munich (about 400 in number) offered to the artist-monarch a festival *serenata*, to which they marched with torches in their hands. Arrived at the beautiful residence of the king, a fine air by Kreutzer, "Die Erde ruht," and the chorus of the inauguration of the Hall of Freedom, were executed by the whole of the Munich singing associations. The king received the well-deserved token of gratitude with much kindness.

LECTURE ON BATHS AND WASHHOUSES.—A lecture delivered at Stratford, by Mr. William Hawes, the deputy-chairman of the committee for promoting the establishment of baths and washhouses for the labouring classes, has been published by the Stratford Sanitary Association, and merits notice. The lecturer gives a sketch of the history of bathing, and of the movement to provide baths for the industrious classes, with a description of baths and washhouses, and other useful remarks on the subject of his lecture, especially as regards the sanitary importance of bathing.

DUTY ON GLASS.—From a return of the public income it is shown that in the year ended 5th January last the revenue from glass amounted to 10,116*l.*

DANGEROUS STATE OF THE HOUSES IN THE STRAND.—According to the newspapers, at a recent court-leet of the manor and liberty of the Savoy, held at the Court-house of the Duchy of Lancaster, before the high steward and a jury of the principal inhabitants of the duchy, the jury viewed two houses on the estate of the Duke of Norfolk, reported to be in a dangerous condition. They are in Norfolk-street, near the spot where the late fatal accident occurred. The jury reported that they were in a most dilapidated state. A fine of 50*l.* was imposed on the Duke.

GOTHIC CHURCH AT NANTES.—A writer in the *Athenæum* says,—The new church of St. Nicholas, at Nantes, which is rising there under the auspices of M. Lassus, when it is completed, will figure among the noblest and grandest new Gothic churches raised within the century; not forgetting those at Munich, nor that on the Apollinarisberg at Remagen, on the Rhine. Ten years have elapsed since the building was commenced. The choir is finished (some decorative sculpture excepted) and is occupied for public worship. The nave is in forward progress, and elevations of the *façade*, with its projected spire, are in every "serious" print-shop in Nantes. Externally, the building is liable to criticism. The style of the choir is needlessly impure, selected from models belonging to a time when the spirit of the *renaissance* had begun to vitiate arches—to fritter away vaultings—to dwarf pinnacles—and to overdo ornament. It might be objected, too, that in the plan of the front propounded, the grand triple porch (or three porches) is spoiled by the intrusion of two episodical windows; and that in the tower "the principle of the pyramid" has been violated, by making the upper compartments into which it is divided larger and heavier than the lower ones. But within the church, the portion which is finished seems to me noble, grave, genuine, and imposing, not merely by its size, solidity, and loftiness (a quality particularly precious in English eyes, so sadly inured to the dumpy in architecture), but also by the sweetness of its proportions and the simplicity of its details. No one who concerns himself with the contemporary progress of ecclesiastical architecture at home and abroad should overlook this rich and striking edifice, as being not only good beyond the ordinary, but also as national in its goodness; since, that French Gothic is neither the Gothic of Germany, that of England, nor that of Italy, who can deny or doubt that has any eye for character in stone and lime, or for character in costume, or for character in physiognomy, or for character in voice? In these things, the distinction between nation and nation, school and school, work and work, are not the less distinct because they are delicate, and as such hard to define.

IRON "FRAMES" FOR PRINTERS.—A correspondent, "Opifex," suggests that iron might be substituted for wood in the construction of the supporters of type letter-cases. Besides other advantages, he remarks that they would not be liable to destruction from fire, or from the attacks of the "timber-borer," which often destroys them. For facility of package in transmission to Australia and to India, to which places such frames are often sent, "Opifex" also recommends them.

THE LATE MR. TRUBSHAW, CIVIL ENGINEER.—Mr. Trubshaw, whose death we have to record, is spoken of by the *Mining Journal* as exhibiting a combination of talent:—"As a builder, we have only to notice as examples, Ham Hall, the seat of Jesse Watts Russell, esq. and Weston-park, the seat of Sir G. Phillips, bart. As an architect, although without classic pretensions, his designs were always cleverly arranged in domestic order, and most substantially built. As an engineer, his works denote especially the man of genius. The various reservoirs, feeders, and other works he constructed for the Trent and Mersey Canal Company, of which he was the engineer for some years, were all important in their day. The restoration of the great tower of Wybunbury Church, which was upwards of 5 feet out of perpendicular, was perfected by him by the most simple means, and at a trifling expense, and without the slightest injury to a single stone of this ancient work of art. If more were required to establish his reputation, we need only mention the stone bridge on the River Dee, at Chester, of 200 feet span, the largest in the world, which was undertaken by him when Telford and other celebrated engineers pronounced it almost impracticable, and which no other man in this kingdom could at that time be found to execute."

PRESERVATION OF IRON FROM ATMOSPHERIC INFLUENCE.—Mr. Nich. Callan, of Kildare, has patented a new mode of protecting iron against weather and water, for roofing, cisterns, baths, gutters, pipes, window-frames, telegraph wires, and other purposes. His claim is for coating with an alloy of lead and tin, which alloy contains a moderate proportion of lead, as compared with that of tin; or with an alloy of lead, tin, antimony, and zinc; or of tin, and one or more of the other three.

HOW TO BUILD A HAPPY HOME.—We find this prescription floating through some of the country papers. Six things are requisite to build a Happy Home. Integrity must be the architect, tidiness the upholsterer. It must be warmed by affection, lighted up with cheerfulness, and industry must be the ventilator, renewing the atmosphere and bringing in fresh salubrity day by day; while over all, as a protecting canopy and glory, nothing will suffice except the blessing of God.

ROYAL ACADEMY.—Mr. Millais was elected an Associate on the 7th.

WORKS OF ART IN STAINED GLASS.—The reputation of Birmingham in this art, according to the local *Journal*, is being sustained. Last week it had alluded to several specimens produced by a well-known firm; and now it notices the works of another old-established house, who have just finished a memorial window intended for the chancel of Rawtenstall Church, near Manchester. This window consists of three lancet lights, the centre being 16 feet and the two others each 14 feet in height. The principal feature in the centre light is the "Resurrection." Underneath is an emblazonment of family arms, with motto, &c. In the two side lights are figures of St. John and St. Peter, under canopies, the other portions being a geometrical interlacing of richly-coloured glass, on a grisaile ground, surrounded with a border. The prevailing colours are blue and ruby. Messrs. Pemberton are the makers.

MODERN CARVING.—The evils of *sub-letting work* are universally acknowledged, and its consequences are, perhaps, more perceptible to the common observer in the decorative portion of a building than any other. So long as architects allow builders, plasterers, &c. to contract for carving as for so many feet of brick walling, so long will there be a deficiency of talent for the restoration of old works; for the simple reason that going through so many hands each must have a trifle for his meddling: the building consequently suffers, and want of ability in the country (by critics who seldom have time for minute inquiry) is set down as the only reason. It is too bad that the future generation should be compelled to judge of the ability and taste of carvers and carving of the present *through* the puddling of these £. s. d. men.—A CARVER.

ADDITIONAL WATER SUPPLY TO LEEDS.—At a special meeting of the Leeds Town Council last week, a report by Mr. Rendell was read, on the proposed additional supply of water to the town. Mr. Rendell recommends the water to be taken from the Skirfare by gravitation. After some discussion, it was resolved to order the proper notices, &c. to be given preparatory to application next session to Parliament, so as to enable the council then in power to proceed with the scheme should they think proper. There is some fear of a dispute with Bradford for the water.

TENDERS

For building the new church in Uxbridge-road, Paddington, to be called Christ Church. Messrs. Francis, architect.

	Church with Church with Tower and deal fittings.	oak fittings.	spire.
Higgs and Cullingford	£12,245	£13,550	£2,440
Myers	11,996	13,490	2,145

The Builder.

SATURDAY, NOVEMBER 19, 1853.

THE Freehold Land Societies will effect a very extraordinary change in the ownership of the country; and ought, moreover, to contribute largely towards the social elevation of the masses. Already their operations are of great extent, and we shall probably astonish many of our readers, by even an incomplete account of the proceedings of some of them,—when we say, for example, that the *National Freehold Land Society*, the first established, has already purchased, to distribute in small lots, more than 3,000 acres of the soil, and receives over the counter about 8,000*l.* per week from subscribing members: on some occasions, 2,000*l.* in a day! At a conference of friends of the Freehold Land movement in December last, the council reported that, estimating as correctly as they were able from returns received, they found there were 130 societies, 85,000 members, 120,000 shares, 310 estates purchased, 19,500 allotments made, and that the sum actually received was 790,000*l.* sterling. Estimating the shares at the average of 30*l.* per share, the total sum then subscribed for was no less than 3,600,000*l.*

Startling as these facts are, the objects of these societies, and their *modus operandi*, are not known by the general public. For some years the number of freeholds in the country had been decreasing,—by gradual annexation on the part of large owners: the expense of conveying small freeholds prevented small capitalists from so investing their savings. It was Mr. John Taylor, of Birmingham, we believe, who first carried out the idea of purchasing land by means of an association, distributing the expenses of conveyancing, &c. over the whole, and then making allotments to the members. In 1849, Mr. Cobden and co-adjutors adopted it, with the view primarily of extending the franchise, and the "National Freehold Land Society" was founded.

The especial objects of this society are—"to facilitate the acquisition of freehold land, and the erection of houses thereon,—to enable such of its members as are eligible, to obtain the county franchise,—and to afford to all of them a secure and profitable investment for money." Freehold estates are purchased; these estates are divided into lots; and the lots are *offered* to the members in the order in which they become entitled to receive their share; but no member is in any case *compelled* to purchase any lot. Those who decline choosing out of one estate, retain the *right* to choose out of others; and, from the number and variety of the purchases, members are enabled in a great measure to select their lots in the situation most convenient to themselves. Every share, or sum of 30*l.* produced by the united subscriptions of the holders of uncompleted shares, is appropriated to one of them by lot; for which purpose a drawing of shares takes place daily, and every holder of a drawn share is entitled to receive the amount of it in the order in which it was drawn.

The drawing for rights is not an unlimited drawing from the whole number of shares: because, if it were, the shares recently taken would have an undue advantage over those of earlier date, and some shares might not ever be drawn. To avoid these evils, the shares are, for the purpose of drawing, arranged in thousands, and the rate of drawing from each thousand is so adjusted, as that all the shares will *certainly* be drawn within the time in which they would be completed by the accumulations of subscriptions and dividends.

Up to this time, 113 estates have been purchased at a cost of more than 455,000*l.* and lots amounting to 220,000*l.* have been taken by the members.

Their place of business has grown to be a very important establishment, and Mr. Whittingham, as secretary, and Mr. James Wylson, as surveyor, preside in their several departments over a large staff of assistants. The total amount of cash received up to the 23rd of last September was 530,193*l.*

It is necessary we should point out that these societies have not power themselves to purchase land. The purchases are made by a certain number of individuals on their own personal responsibility. The liability is not a light one, considering that the members are not bound to take the lots. We must say, too, that in the first instance all the plots of ground were brought to the value of 30*l.* or multiples of that sum; now, however, the plots are of various prices, and no practical difficulty is found to arise from the change.

The *Conservative Land Society* was founded in September, 1852, "as a defensive measure" (politically), and has made very considerable progress. The committee reported at the fourth quarterly general meeting of the members, on the 7th of September, 1853, that the total number of shares issued during the twelve months was upwards of 6,000, representing a subscribed capital of 300,000*l.* on which upwards of 52,000*l.* had been paid. The number of shares now taken is 7,000, and the receipts are over 60,000*l.*

The estates which had been allotted then were,—

1. The Rectory Estate, Ealing, Middlesex.
2. The Cedars, Putney, East Surrey.
3. The College of Civil Engineers, Wandsworth-road, East Surrey.
4. The Wood-green Estate, between the Colney Hatch and Hornsey Stations on the Great Northern Railway, Middlesex.
5. The Kirkstall-road Estate, Leeds, on the Bradford-road, West Riding of Yorkshire.
6. The Hertford and Ware Estate, Hertfordshire; and
7. Brockley-hill Park, Forest-hill, West Kent.

They have purchased fifteen estates, comprising 350 acres: and the weekly receipts are now about 1,500*l.*

The executive committee appear to have exercised care in the selection of estates, so as to secure good investments to members exercising rights of choice, and the result, we are told, has been that hitherto nearly every right, as soon as allotted, has readily found a purchaser (or one who would purchase) at a premium of at least 5*l.* per share. Some rights on the Putney College Estate sold for very high premiums, "ranging from 40*l.* to 150*l.* and that for shares on which only a very small subscription had been paid."

The committee of this society have just now purchased the estate known as St. Margaret's, on the banks of the Thames, a short distance from Richmond-bridge; comprising the mansion built for the Earl of Kilmorey, of which we gave a view some time since, and the park of 75 acres. The estate has a fine river frontage, and is within a short distance of three stations on the South-Western Railway. It is to be hoped that buildings of good character only will be erected. The country has been greatly disfigured in parts by the ugly trumpery tenements put up by the allottees in land societies. There must of course be houses erected for men of small means; but even these need not disfigure the landscape. A correspondent from Bradford, who signs himself "A Labouring Man," complaining of the evil which has been done in this way, says:—"Never was a fairer opportunity afforded to working men to secure better homes, in the midst of beautiful, cheerful, health-giving allotments; and yet that the opportunity is thrown away, is the rule, and not the exception. Why should not the labouring man endeavour, in the intervals of relaxation from toil, to get away from the noise, and smoke, and dirt of a dingy town, and to breathe the purer atmosphere of the suburbs? Why should *he* be so anxious to convert the country into town everywhere? And why should he not, while he makes the arrangements *within* his dwellings conducive to the health, convenience, and comfort of its inmates, endeavour to add to the neatness and comeliness of its appearance *without!* Nay, if he can accomplish it, without trenching upon the means which prudence would suggest to the provident, why should not even *his* humble abode present to the eye in its form and outline a picture of architectural beauty?" And he urges justly, that under intelligent auspices, a society of working men might *locate themselves upon allotments*, and by one and all adhering to a judicious design for a number of erections,—detached, semi-detached, and in groups,—they might give an ornamental appearance to their little "settlement," and afford to the public, at the same time,—what is much needed, in an age when *profit* is the only actuating motive,—a permanent example of improved cottage architecture.

We do not intend our observations to apply particularly to the Conservative Society. Mr. Gruneisen, the secretary, and Mr. Morgan, the surveyor, have evidently sought to obtain the erection of good houses. On the best plots of the Putney College Estate, houses are not to be erected of less value than 1,200*l.* each. We need only mention the name of Mr. Henry Pownall to show that the directors are of the first respectability.

The *Finsbury and General Freehold Land Society* was established in 1850, on the rotation or priority principal; that is to say, shareholders became entitled to allotments of land according to the order in which they joined the society. This method not being found so popular as the ballotting system, the society amended its rules, and now adopt the ballot, priority, and paid-up classes. Nearly 2,000 shares have been enrolled, and four estates have been purchased. One at Finchley was allotted in the early part of last year. There were 74 allotments, averaging in size from 124 to 202 feet in depth, and 25 to 30 feet in width, and varying in price from 18*l.* to 26*l.* Some of these allotments, it appears, have been sold since, and realized upwards of 100 per cent. profit. Three other estates, situated respectively at Wood Green, Tottenham, Middlesex, and Mitcham, Surrey, have been purchased for the purposes of the society. The estate at Wood Green, 60 acres, it is estimated, will make 480 allotments, varying in size from 25 to 30 feet frontages, with a depth of about 160 feet, at prices averaging 30*l.* according to the position. Mr. March is the secretary.

Amongst other similar associations of which the particulars are before us, is the *National Provident Freehold Land Society;* wherein Mr. Martin Stutely is the surveyor and Messrs. Carritt and Osgood are the solicitors. In this, as in others, the right to choose an allotment will accrue in two ways, viz. by the completion of the share or by the share being drawn in the ballot. Their prospectus explains that "A *completed share* is one on which the whole amount of the subscription has been paid. Any member may at any time complete his share, and each completed share will entitle its holder to choose a plot of land in the order of its completion. A *drawn share* is one upon which the whole of the subscription has not been paid, but which having been drawn in the ballot, the holder has become entitled to receive the amount of it as an advance from the society; and every sum of 50*l.* produced by the united subscriptions of the holders of uncom-

pleted and unadvanced shares will be thus appropriated."

Concerning the purchase of estates, they say,—"The society, as a body, cannot purchase land, and responsible persons, at their entire risk, will have to become the purchasers, and therefore members must understand that the purchase, management, and allotment of the estates, with all the incidental outlays, are the independent matters of the persons upon whose responsibility the estates have been bought; and as the allotments will be offered to the members, *subject to rejection by all of them*, in which case the land would be left on the hands of the purchasers, the shareholders cannot expect to be allowed to interfere in such arrangements."

As the risk thus falls on the members of the committee who buy the estates, and it is the same in other societies, it is to some extent a guarantee that the purchases will be wisely made. We need scarcely say how much depends on the respectability and efficiency of the directors of these societies. Several instances of jobbing have been brought before us at different times; but with these we need not meddle, as the evil is individual and not a part of the system. Care on the part of the members in selecting lots is of course desirable; and those who have to exercise it should consider, amongst other things, situation, aspect, prospect, and nearness to main roads. Early choosers, who make their selection properly, can usually sell their lots, if they do not desire to retain them, at a good premium. A register of those who desire to sell is kept at the various offices.

The Free Trade Freehold Land Society, although established but a few months, has a subscription representing a capital of more than 50,000*l.* and has purchased two estates,—one near the Anerley Station, a short distance from the Crystal Palace, at Sydenham; the other at Camberwell. We are told that a premium of 50*l.* has been offered for some of the lots in the first-named estate. In this society each share is 40*l.* Mr. Sherwood Smith is the secretary, and Messrs. Davis, Vigers, and Belcher, are the surveyors. By the plan proposed for the allotment of land amongst members, each estate will be divided into three portions, viz.,—one, to be allotted to those members who have completed their shares, that is, paid up the full amount; a second, to those members who have not paid up their shares in full, whose priority of choice will be decided by ballot amongst all the members whose subscriptions are not in arrear at the time of the ballot; and a third, to members according to seniority of membership, provided their subscriptions are not in arrear.

In the first instance, the founders adopted the title of "The Free Trade in Freehold Land Society," which expressed their object, but this was afterwards reduced to the Free Trade Freehold Land Society, at the risk of a misconception. We have reason to believe it a *bonâ-fide* undertaking.

In conclusion, we need scarcely say that we view these Land Societies favourably,—due caution being displayed as to their administrators. Land purchased in gross, and then divided amongst, say, fifty persons, is manifestly to be bought by the latter cheaper than they could separately purchase the same quantity, each one for himself, besides the saving of a vast amount of additional legal expenses; moreover, land which was but pasture or garden ground at the time of the purchase, is greatly increased in value the moment a number of persons associate themselves in building upon it. Such societies tend to induce habits of providence, afford opportunities for the profitable investment of small savings, and increase the number of those who have an interest in the prosperity of the country and the maintenance of order.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The opening meeting of the session was held on Monday evening, when Earl De Grey, the president, took the chair, and a large number of members and visitors were present. Numerous donations of books, prints, &c. were announced, especially a further portion of the work by Dr. Lepsius on Egyptian Antiquities, presented by the Prussian Government through Chevalier Bunsen.

The gift by Earl de Grey of a copy of his "Essay on the Characteristics of the late Duke of Wellington apart from his Military Talents," led to a few remarks from his lordship, who spoke of his work as unworthy of the notice of the members, except from their kind feeling towards himself. As, however, there was nothing warlike in the essay, it might be read by any architect without mischief. Though an old man, he was a young author, and when he first found himself in print, he perceived many imperfections in his production. These he had endeavoured to remedy in a second edition, and as the first had been so kindly received by the meeting, he should hope to be allowed to offer them a copy of the second also.

Mr. Donaldson then read an account of a collection of original drawings in the Museum of the Hotel de Ville, at Lille, in France, presented to that establishment by the Chevalier Wicar, director of the Academy at Naples, and which were briefly alluded to in our pages some time ago. These drawings are about 1,200 in number, and include specimens by Rafaelle, Leonardo da Vinci, Annibal Caracci, Carlo Dolci, Francia, Tintoretto, Giulio Romano, and many other of the great masters; and more especially a series of about 190 plans, elevations, sections, &c. of ancient and modern buildings, ascribed to Michelangelo. To this latter series Mr. Donaldson chiefly confined his attention, giving an interesting description of them, illustrated by copies of the principal drawings. After careful consideration, he had arrived at the conclusion that these drawings were the work of Vasari, and not, as alleged, of Michelangelo.

Mr. Tite strongly urged such of the members as might have an opportunity, to visit Lille, and to examine this remarkable collection of architectural drawings. He himself hoped, and was inclined to believe, that they were correctly ascribed to Michelangelo; but had been unable to devote so much attention to the question as Mr. Donaldson had done. It was most desirable that they should be published in lithography, or by some other easy process; and he trusted the council would endeavour to promote that result.

——Mr. Donaldson stated, that M. Benvignat, the keeper of the Museum at Lille, had informed him that the publication of the drawings was already contemplated.

Mr. Bell, M.P. added his testimony to the value and interest of the collection; and a vote of thanks was carried unanimously.

Some large specimens of *serpentine* from the Lizard, Cornwall, of superior quality to that heretofore employed, were exhibited; and various opinions were expressed as to its applicability to interior architectural decoration.

NOTES AND INQUIRIES.

ARCHITECTURAL AND ARTISTICAL.

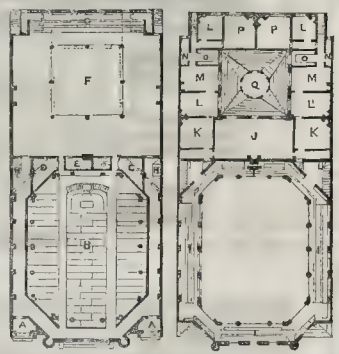
At Tours there is a church whose exterior architecture is enriched throughout by Mosaic work composed of coloured glass. Other instances are said to occur in various parts of France; and the *interior* of the Sainte Chapelle at Paris is a familiar instance. What is the date of the church at Tours above alluded to? and are any of your readers acquainted with instances of this mode of decoration being adopted for exterior architecture in England?

The eminent antiquary, M. Merimée, informed the writer that he had observed a marked alteration in the mode of representing Satan in the carvings of the twelfth century: previously he had always been represented somewhat as a goat, but without a tail. This change took place at the period of the crusades. Might not the crusaders have seen the Assyrian Satan (of which there is an example in the Nineveh Gallery of the British Museum), and so imported into the north the Oriental devil as an interesting variety of the species? S.

Hollow Bricks and Fire.—In answer to correspondent "P." Beart's patent perforated bricks are frequently used in constructing kilns, and although exposed to a white heat, no injury results from the "*explosive nature*" of the confined air. R. H.

WINCHESTER CONGREGATIONAL CHURCH.

A few days ago the new Congregational Church, in Jewry-street, Winchester, represented in the accompanying engravings, was opened. It is Early English in style. The chapel, as will be seen by the plan, is in the form of an elongated octagon. Three tiers of raised seats are ranged entirely round the chapel; and in face of them all round is an arcade of clustered columns and pointed arches, which carry a roof of peculiar construction, terminating in a large lantern, 24 feet long and 12 feet wide. The light is said to be well diffused. In the evening light is obtained by means of one central chandelier, containing eighty gas burners. The organ stands in the gallery, opposite the entrance. The pipes are diapered with gilding, on a vermilion and ultramarine ground. The decorations have been executed by Mr. Burton, of Reading.



The exterior is built of white brick, with Bath stone dressings. The centre projects sufficiently forward to be seen from the High-street. Three doorways, ornamented with the dog tooth, and with inscriptions over, recording the date and name of the building, conduct to the body of the chapel. A large triplet window is situated over the doorways, and the angle on either side of the projection is finished with a turret. Side porches, covered with stone roofs, lead to schools in the rear, by means of passages under raised seats in the chapel.

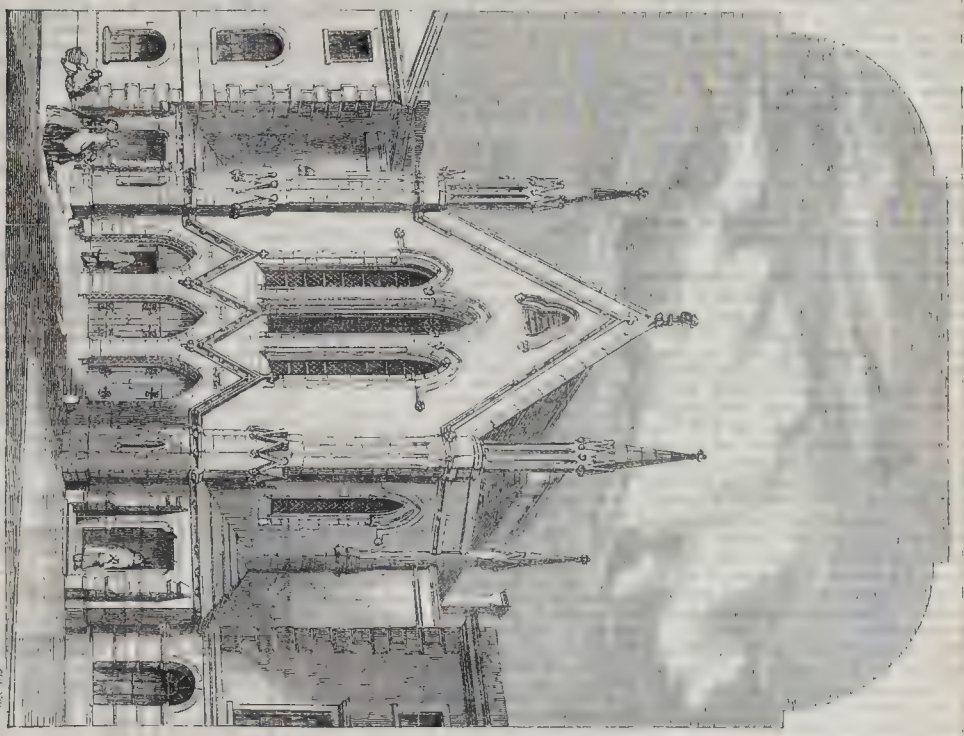
In connection with the schools are a library, two class-rooms, and the usual requisite apartments. There is also a minister's vestry, adjoining the chapel; and over the schools are constructed residences for a schoolmaster and chapel-keeper, as also a vestry for week-day evening services.

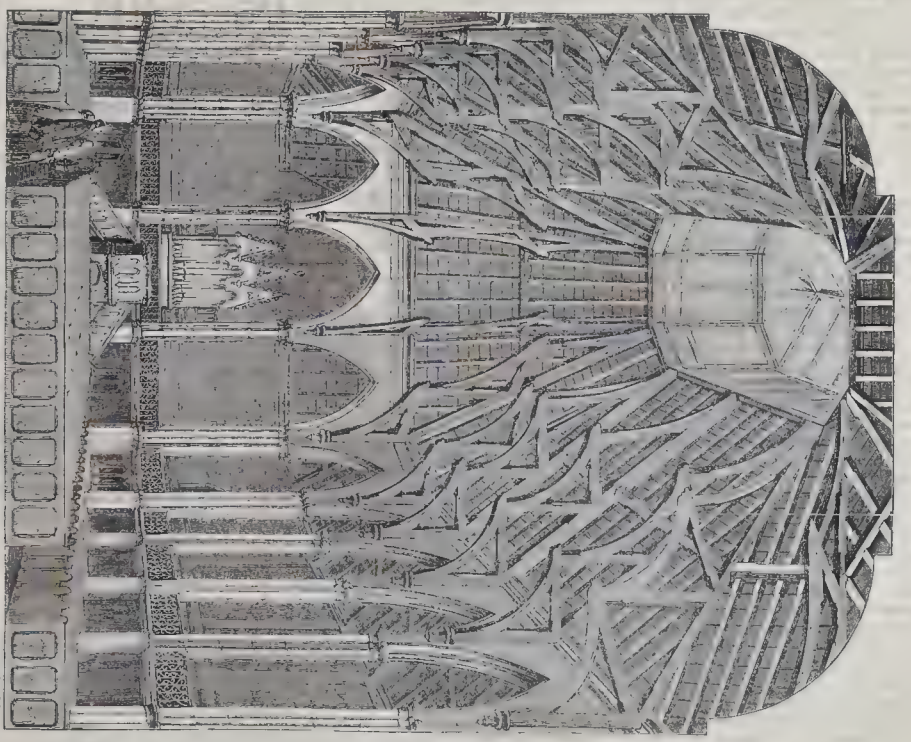
The chapel and schools are heated by hot water. The ventilation is effected by means of a central shaft. The whole area covered is 126 feet long by 56 feet wide; and the total cost, including the requisite fittings, is said to be about 4,000*l.* Mr. W. F. Poulton was the architect: the design was selected in competition.

REFERENCES:—

A. Entrance Lobbies.	J. Vestry 30 ft. by 15 ft.
B. Chapel 68 ft. by 54 ft.	K. Class Rooms.
C. Ministers' Vestry.	L. Bed Rooms.
D. Library.	M. Kitchens.
E. Store Room.	N. Closets.
F. School 54 ft. by 53 ft.	O. Pantries.
G. School Gallery.	P. Sitting Rooms.
H. Staircases.	Q. School Lantern Light.*
I. Raised Seats of Chapel.	

* The illustrations we have been enabled to use appeared in an interesting and well-conducted miscellany, "The Illustrated Magazine of Art," published by Cassell, Ludgate-hill. We must especially notice the number for October last, as containing a most complete series of illustrations of Napoleon's tomb in the church of the Invalides, Paris. Our readers will find that number an excellent shilling's worth.





WINCHESTER CONGREGATIONAL CHURCH.—Mr. W. J. Fortnum, Architect.

THE MOUSTACHE MOVEMENT.

Paragraphs which have recently circulated go to prove that, with whatever favour the "moustache movement" is regarded in fashionable circles, it has, at all events, gained the respect of the working classes. When a community of grave Scotchmen, under their official guise of railway guards and engine-drivers, recommend the adoption of the moustache and beard to their fellow-travellers in this wilderness, we are to presume that their experience will carry with it the weight it deserves, and that their opinions will meet with the respect to which they are justly entitled. For ourselves we have no hesitation in giving to these opinions our cordial assent. We had a large share in the origin of the movement; we have all along lent it our best assistance; and it is but just to say that we think the beard and moustache a proper appendage, not only to stokers and railway guards, not only to steel-grinders and stone-masons, but, with few exceptions, to every artizan of whatever denomination.

When the British Association met at York, Mr. Chadwick, of the Board of Health, brought this subject under discussion before the members engaged in sanitary inquiries, and amongst them obtained the concurrence of Dr. W. P. Alison, who afterwards persuaded several hundred stonemasons of Edinburgh to retain the beard as a protection against the stone dust, which was a prevalent cause of consumption amongst them.

It sometimes happens in this country that the love of conventionalism, the respect for ancient usages, which distinguishes our countrymen, is destined to receive a rude and irresistible shock. And yet to introduce a radical change in their modes of thinking is no easy matter. We will take an illustration of our meaning from the popular taste respecting dress; on which point we are, indeed, the victims of circumstances. We clothe our persons after fashions for which common sense can assign no reason, for which history can supply no precedent. We crimp our feet into unnatural dimensions by means of fashionable boots: we fasten down over these, by various means, an equally unnatural description of fashionable trousers: we expose the most vital parts of our organism to the inclemency of the weather, with the single end of demonstrating the existence of our fashionable linen: our coats are cut on the tails to imitate that of the swallow; and our heads are tortured by the use of hermetically sealed vessels of gummed calico and dyed silk. Sometimes, it is but too true, we feel uncomfortable under those manifold inflictions. Yet day after day and year after year we pursue the same undeviating track, until at length outraged nature can bear it no longer, and then there comes a reaction, an open rebellion, and a new fashion.

The cultivation of the moustache by our working-classes seems to be a remarkable instance of this uprising of the dignity of nature against the dignity of conventionalism. It is one of those symptoms of public opinion almost beyond the pale of hostile criticism. The beard, indeed, has the advantage of high medical authority as being in some way conducive to the health of its wearer; of high artistic authority as being a natural exponent of masculine beauty; of immense antiquity as having been the fashion of our ancestors; and, above all, it has the advantage of being a natural gift to the masculine gender of every nation, people, kindred, and tongue under heaven. Why some men are at so much pains to deprive themselves of such a feature; why others hold it in the light of a religious emblem; why some regard it as a nuisance; why others cherish it as a blessing, are circumstances which have always seemed to us not unworthy the attention of a philosophical inquirer. He would find, if he looked from a religious point of view, that in the Mosaic code there are express injunctions to cultivate this symbol of manhood; that reverent allusions to the beard of the high priest are scattered throughout the effusions of the noblest of Judah's songsters; that it is interwoven with the idolatrous superstitions of Persia and Hindoostan; and that the deepest and most sacred oath of a Mussulman is to swear by the beard of the prophet. He would find, too, on continuing the inquiry, that among the nations of the west, from the days of Attila to the days of Leo X.,—from the empire of Charlemagne to the death of the great king Henry,—from the time when Julius Cæsar landed on the shores of Britain to the time when the dynasty of Stewart was drawing towards its close; it was still the universal fashion to leave the chin and upper lip as they were intended by Nature. But a combination of circumstances brought about a change. In France, a beardless youth ascended the throne, and his obsequious courtiers hastened to assimilate their personal appearance to that of their monarch. In Spain, the dissolute Philip showed the same example; and it was so extensively followed that people said the Spaniards since they had lost their beards had lost their souls. The Czar Peter made the beard the subject of a most iniquitous tax, to collect which, indeed, from his indignant people, nearly shook his vast empire to its core. In Germany, the priesthood led the fashion according to the dictum of the pope; for it has always been a point of distinction between the Church of Rome and the Eastern Church, that the former laid the beard under its anathema, while the latter encouraged it as a religious observance. It was during the period of the great revolution that the fashion began to expire in England. The cavaliers, with their swaggering airs and their fierce moustaches, were succeeded by a race of men who wore lank hair and shaved close; and the gallants who boasted of their beards and green jerkins, were smitten under the fifth rib, even as Ashel was smitten by Abner in the wilderness of Gibeon. And so the fashion has continued down to our own time. All through the Hanoverian dynasty the English gentleman has cultivated his whiskers in every manner of fantastic size and form; but his beard and moustache have been compulsorily kept out of sight. At length in our day the reaction has come. Suddenly a cry is heard from the ranks of the working-classes. They are the victims in some cases of a terrible and insidious disease. Their trade exposes them to danger and to premature death. A remedy is pointed out: need we say how extensively it is adopted; and the people of this country grow their beards after the fashion of their forefathers.

The artizans who recur to the example of Sir Christopher Wren, and Inigo Jones, and Michelangelo; the sailors who may choose to revert to the example of Drake, and Raleigh, and Sir Cloudesley Shovel, should vindicate their respectability by the cleanliness as well as the respectable trim of their beards. Unfortunately, the beard has been desecrated by its use for political and other symbolism, and as a distinction by absurd sectarians. It should, by numbers of men of known position, be retrieved from this desecration, and being based on reason and sanitary uses, be made again the outward and visible sign of good sense, instead of sectarianism and extravagant folly.

In France the republicans, as we know, wore their beards as a badge of distinction. When the republic was proclaimed, the great proportion of the adult population adopted the beard, to be *à la mode*. When the republic was overthrown, the majority of those who had been led to experience the convenience of nature's appendages chose to retain it, though they are adverse to the opinions of which it was the sign. The royalist or imperialist officials who have been required to cut it off, feel the measure to be a grievous act of tyranny.

If we could estimate the expenses for appearing shaven, to busy men, in time and in razors, it would, we believe, be found to be one of the heaviest of direct taxes. Every one who attains the term of three score years and ten, will have spent more than a year of his working time, over and above the time required for cleanliness and decency, in a painful and injurious operation.

Some future historian, when treating of the manners and customs of our countrymen, will have to report on the cause and extent of this singular revival of an old fashion. He will, we have no doubt, have to offer some ingenious speculations concerning that cause. He will, in all probability, point to the republicanism and the *sans culottes* of France, and draw his analogy between these and the Chartists and bearded labourers of England. He may, indeed, go further, and attribute the movement to the influence of the transcendental philosophy of Germany. But he will commit an egregious mistake should he attribute the "moustache movement" to any other cause than the spirit of intelligence and awakened zeal now abroad among our working-classes, the spirit which enables them to understand and appreciate the labours of earnest-minded men in the cause of their social amelioration.

A DROPPED NOTE

TO SECTION 1 OF MR. HOSKING'S SUPPLEMENT [1853] TO HIS TREATISE ON ARCHITECTURE IN THE "ENCYCLOPÆDIA BRITANNICA."

The site of the capital of adolescent Australia is, in almost every respect, highly eligible for the purpose to which it has been devoted, and considered in connection with the noble harbour to which it fronts—east, west, and north,—it is one of the finest sites in the world for a great commercial emporium, but some of the greatest advantages of the site were thrown away, and others were greatly deteriorated for want of a *plan;* for want, indeed, of all consideration on the part of the Home Government, and of all prevision on the part of those who happened to have charge of the convict gangs who founded the town of Sydney, and thereby the colony of New South Wales.

Labour in the persons of highwaymen, burglars, pickpockets, and poachers was sent away from England to be dissipated on the shores of Botany Bay, but by a chance discovery at the moment it was taken into the nobler harbour of Port Jackson, landed at the beautiful bay which took the name of Sydney Cove, and there applied according to its destination,—it was frittered away in doing next to nothing. At the end of the first twenty years there was neither a road nor a bridge in the colony of New South Wales. A gaol had been built at Sydney, but the sick were in the temporary hospital which was taken out by the first party, in frame.

If the history of the foundation and growth of the United States of America had been read, and the effect of the application of human labour on a virgin soil in that instance considered, the labour of the convict transported from the British Islands to New South Wales might have been applied upon a *plan*, and not thrown hap-hazard into an unexplored wilderness, and there wasted. After twenty years the convicts were still fed from England. It was not until undervalued and ill-requited Lachlan Macquarie—the first fit man whom chance sent to be governor of the Australia prison—took the command, that the convict labourer was made to earn his own bread, and to take his proper place as the pioneer of the emigrant settler. What General Macquarie did, as governor, with convict labour, in connecting the already settled places or townships with Sydney, with one another, and with the interior, by good roads, as exploration went on under his sagacious rule, was the means of the rapid advance which has been made by the colony of New South Wales, and through it of all the other Australian colonies to the present time. To Governor Macquarie it is owing, moreover, that Sydney was redeemed in some degree from the chaotic state in which he found it on his arrival there, and to him it owes what it possesses of form; although he did not perceive, or perceiving he did not secure to the town the advantage of a main line of street up the bottom of the valley over the Tank stream in taking Brickfield-hill out of the main road into the town from the interior, and in making the direct trade of the town itself more easy; nor did he, as he ought to have done, embank the shore from east to west at the head of the Cove into deep water, while the land was yet public property.

If Governor Macquarie had long survived his return to England, and had been consulted, as he ought to have been, upon the application of convict labour to the curative punishment of the criminal, and to the benefit of the state, his experience might have led him to advise somewhat to the following effect; and if he had so

advised, and his advice had been acted upon, the convict would have been punished with the best effect upon himself by being made industrious; and with the effect upon the State of turning his labours to profitable account in obtaining from its application full-grown Colonies capable of producing, and purchasing, from the hour of their establishment.

1st. That, upon a determination being arrived at to settle a colony at any place, the locality be explored, accurately surveyed, and thoroughly investigated, by an expedition consisting of properly-qualified persons to such effect.

2ndly. That, upon the results of such exploration, survey, and investigation, a plan be prepared for the disposition of the locality for the purposes of colonization.

3rdly. That the site determined upon as that of the seat of the colonial government, or otherwise the leading township with reference to the contemplated ruling commerce of the colony, be laid out in the most fitting manner; and that all main works, such as quays, roadways for streets, bridges, supply of water, and relief from waste, as sewers, all requisite public buildings, civil military, commercial, educational, and correctional, with houses and other buildings, as inns and hotels, warehouses, and shops for the accommodation of colonists on their arrival, be designed, drawn in detail, and specified with reference to the materials available on the spot; and that in like manner secondary townships be devised and described, with all proper roads to and beyond them, and so as to open the country and give the means of readily occupying throughout a reasonable length and breadth of the land.

4thly. That upon a design so considered and settled in the general, and with model forms for details to be applied as local circumstances may require or impose, a sufficient establishment be formed at the place contemplated for the purpose of carrying out the design; that is to say, of preparing the locality to receive inhabitants, as a manufactory is prepared by builders for the manufacturers before they are brought together, or as a ship is built and made ready for sea before the crew are collected;—the labour to be employed being that of criminals whom home discipline has already failed to reclaim, and the establishment consisting of a sufficient controlling power to enforce discipline and insure obedience on the part of the compelled labourers, and to prevent the intrusion of all persons whatever who are not of the establishment into the place under operation.

In such manner, for seven, ten, or even a greater number of years, all the otherwise irreclaimable criminals of the British Islands may be kept as in an unwalled prison, beneficially employed in reclaiming to the purposes of civilization, and fitting for the reception of an industrious community, the unsettled coasts and territories of the southern hemisphere. One place being brought into the condition, so far as physical operations are concerned, to which New South Wales had been brought at the time of Governor Macquarie's recall, the establishment may be transferred, and the convicts removed, to another place, remote from that last occupied, to begin again, leaving the result of their past labours wholly freed from their contaminating presence, to be disposed of by the State to its worthier subjects, who may desire to become colonists.

The locality, prepared as contemplated, will represent a large capital, as the drained fen counties in England do, and as the site of the Lake of Haerlem will, when it is ready for the plough. Thousands of acres of the most productive land in England, and a great part of the whole kingdom of Holland, were of as little value before the application of capital to reclaim them from the sea and from floods, as are the wildest lands in Australia or in New Caledonia; and while people can be found ready to buy inaccessible and unreclaimed lands, upon which to labour long without a return, and to pay money for a "town allotment," upon which the Maori is yet carving his war canoe out of the trunk of a tree, there will be no difficulty in obtaining a remunerating price for reclaimed lands with buildings upon them, and roads to and from them, or for houses and shops in seaport and market towns.

IRELAND.

Royal Hibernian Gallery.—The annual exhibition of the Academy has been for some time open at Dublin. There is a large collection, but our correspondent informs us that it for the most part consists of pictures previously exhibited: however this is accounted for by the difficulties which presented themselves to the Academy in procuring contributions during the time of the Great Exhibition, which absorbed so many interesting artistic works. The architectural department is peculiarly meagre, and there are only one or two drawings of interest. Sir T. Deane exhibits his design for Cork Townhall; and Mr. Mulvany sends perspectives of the Midland Great Western Railway Terminus, and Mulligan Lunatic Asylum, Athlone Station, &c. The Exhibition has been opened by gaslight, and has a good effect. The admittance is now at the reduced charge of *one penny*.

Dublin Baths and Washhouses.—In 1847 the Corporation of Dublin awarded a first premium to Mr. John Bourke, architect, for his design for the above, and subsequently directed him to prepare working drawings and specifications. After a lengthened delay, the Board of Works were applied to for the necessary funds, but the application was refused, unless on the security of a rate to be levied off the citizens. This course was abandoned by the Corporation, and now the project has been totally given up. In addition to the original premium, a sum of 200*l.* has been awarded to Mr. Bourke, which is equivalent to 2½ per cent. on the proposed outlay. The only public baths and washhouses in Dublin are those at the Mendicity Institution, which are very inadequate to suit the population; and it is a matter of surprise that at such a critical juncture as the present the completion of this undertaking should not have been effected.

Intended National Gallery at Dublin.—Scarcely have the Exhibition doors been closed to the public, than a new and laudable project has been set on foot. A committee has been appointed to establish a permanent Exhibition of Works of Art in the Irish metropolis, and many influential noblemen and gentlemen have consented to act in the matter. Lord Talbot de Malahide is to act as treasurer, and the annual subscription will be one guinea, exclusive of donations. Lord Charlemont has consented to place his entire gallery at the disposal of the committee, and Lords Ward and Yarborough have confided their most meritorious specimens for exhibition. It is yet an open question as to how far the Government may aid in the project, but we trust that, independent of extraneous assistance, the projectors will profit by the great lesson lately taught them, and "*Trust in themselves.*"

FOREIGN ARCHITECTURAL AND ART INTELLIGENCE.

Dock Napoléon, Paris.—The earthworks for this dock are now proceeded with nightly, by aid of an electric light. The apparatus projects its powerful rays by an opening made in the centre of the works in the way of execution. Two electric focuses illumine the work to the height of 10 mètres from the ground, and at a length of 300 mètres. Steam-engines, going on rails laid for that purpose, transport long rows of waggons loaded with earth and rubble, which service continues the whole of the night.

The real Birth-place of Rubens.—A number of interesting papers on this great artist, and his father, *Jean Rubens*, have been brought to light. It appears, then, that *not* Cologne, as was hitherto believed, but *Siegen*, in the duchy of Nassau, was the birthplace of Paul Peter Rubens.

Bavaria: Casts for the London Crystal Palace.—M. Fileschmann, of Nüremberg, is now making casts of the principal sculptures of this old German city, for the above establishment. Not only single statues and *bassi-relievi* are undergoing that process, but entire portals, and even the Sebaldus monument of Peter Vischer. In succession, all the important plastic monuments of Franconia are to be moulded for the same Exhibition.

St. Petersburg Art Exhibition.—This year's exhibition at the Academy of the Fine Arts has been exceedingly well attended, and much approved of, as it duly deserves. The pupils have surpassed the masters; at any rate, they have exceeded every expectation. Amongst the most admired subjects we mention an oil-painting of Esther and Ahasuerus by Martinoff; Achilles and a Centaurus, by Kabanoff. Several landscapes by Bogoliboff, Dawüdoff, Gaowski. Battle pieces by the Prince Maxitoff. Architecture, some superior plans by Meier. Sculpture, an Acteon, by Brodski. The prizes awarded by the Academy consisted of six large gold medals, ten smaller ones, and three large silver medals. Ten artists were raised to the degree of academicians, seven became professors, &c. Almost all the art-objects exhibited were by Russian, or at least by Sclavonian artists.

Photography on Textile Fabrics.—Messrs. Wulff, of Paris, have placed before the French Institute some specimens of photography on linen, oil cloth, chintz, &c. This discovery will be of great importance for architectural ornamentation and other useful purposes. Such pictures can be cleaned by wiping, nay, they can be washed, and a portrait on linen or long-cloth can be forwarded in a letter. As, moreover, these photographs can be obtained at a cheaper rate than those on metal or paper, the art will become more popularized. Messrs. Wulff keep their procedure yet secret, but it is thought that they operate on a preparation of iodized collodion.

Dresden Picture-gallery.—The Dresden journals enumerate and exult on the new acquisitions of the Spanish school, lately made by that famous establishment. One of the most curious is a picture of "Pedro Ruiz," representing Christ and Peter, and much resembling Neapolitan pictures of the fifteenth century. "The Crucified," by the Castilian *Diego Correa*, of the middle of the sixteenth century, is conspicuous for a great depth of feeling and antique seriousness. A picture of the "Death of the Virgin Mary," is from *Vicente Joanez*, who had formed himself mostly after Rafaelle and Michelangelo: he was thence called the Spanish Rafaelle. Most of this valuable collection are from the gallery of Louis Philippe, and will be exhibited shortly in the gallery.

Vienna: Completion of the Soemmering Railway.—This line of rails, passing over the forerunners of the Styrian Alps (2,000 feet high), and which has hitherto cost an outlay of 15,000,000 of florins, has been after all completed, and an experimental trip from Gloggnitz to Murzzuschlag made on the 23rd of last month.

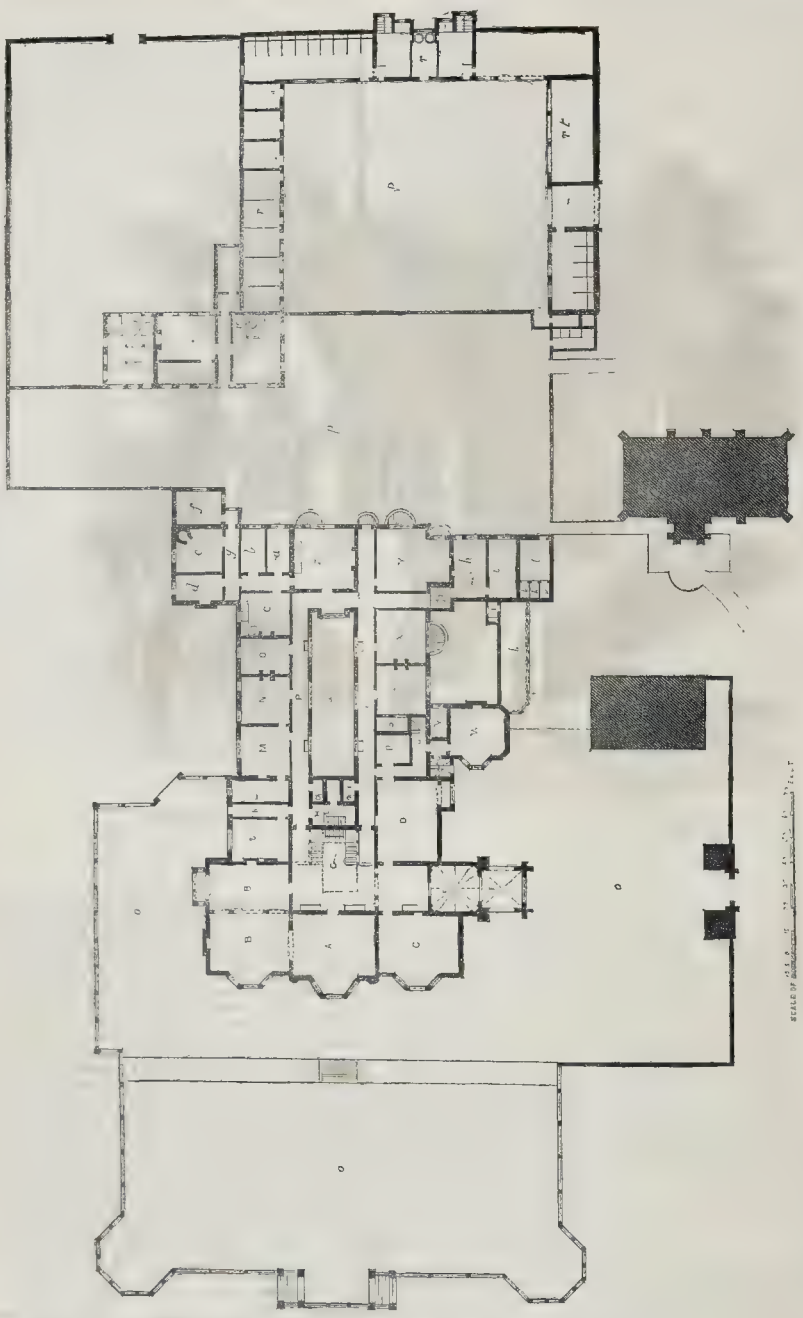
CENTENARY OF THE SOCIETY OF ARTS.

On Wednesday evening the one hundredth session of this useful Society was opened, when Mr. H. Chester gave a review of the history of the Society, in the course of which he stated that the "public spirit" of William Shipley, a drawing master, and brother to the Bishop of St. Asaph, "gave rise to the Society," in 1753. Mr. Shipley first obtained the approval and concurrence of Jacob Viscount Folkstone, of Robert Lord Romney, and of Dr. Isaac Maddox, Lord Bishop of Worcester; and then proceeded to enlist others. The first meeting was held on 29th March, 1754, at Rawthmell's Coffee-house. In 1755, the Society met at Peele's Coffee-house. In 1847, it was incorporated by royal charter. The chairman then proceeded to give some idea of the very miscellaneous nature of the Society's operations in the promotion of art and science. The Royal Academy he said sprang from the Society of Arts.

In 1776 the society proposed to the academy, which had been instituted in 1768, that they should paint the Great Council-room at Adelphi, and be remunerated by the public exhibition of their works therein. The academy, with Sir Joshua Reynolds at its head, refused this proposal; but, in the following year, Barry, who had signed the refusal with the rest, volunteered to decorate the room without any remuneration at all. The "Hand-book of London" states that when he made his offer he had but 16s. in his pocket. His offer was accepted, added the chairman, and you see the result.

No special demonstration other than, if possible, increased exertions, would celebrate their first centenary. Amongst other objects in view, special allusion was made to those applications of science and art by which the well-being of our poorer brethren who labour in our towns, villages, fields, mines, and ships, may be promoted in the improvement of houses, clothing, food, fuel, instruction, amusement, and health. The rooms were very full.

PLAN OF TORTWORTH COURT, CROMHALL, GLOUCESTERSHIRE.



A. Drawing-room.
B. Library.
C. Morning-room.
D. Dining-room.
E. Vestibule.
F. Carriage porch.
G. Hall and principal staircase.
H. Women-servants' stairs
I. Water-closets.
J. Children's-room.
K. Passage from terrace.
L. Housekeeper's closet.
M. Housekeeper's-room.
N. Still-room.
O. Housekeeper's sitting-room.
P. Corridor.
Q. Open court or area.
R. Dinner service-room.
S. Plate-closet.
T. Butler's pantry.
U. Stairs.
V. Strong closet.
W. Lord Ducie's room.
X. Steward's room.
Y. Servants' hall.
Z. Kitchen.
a. Larder.
b. China-closet.
c. Scullery.
d. Pantry.
e. Bakehouse.
f. Dairy.
g. Passage.
h. Brushing-room.
i. Knife and shoe house.
j. Yard.
k. Privies.
l. Orangery.
m. Conservatory.
n. Chapel.
o. Terrace.
p. Kitchen court.
q. Stable-yard.
r. Stable.

TORTWORTH COURT, GLOUCESTERSHIRE.

Tortworth Court, Cromhall, of which we recently gave a view and section (see pp. 666 and 667, *ante*), was commenced for the late Lord Ducie in 1849, and is just now completed. We add to our previous illustrations a general plan of the structure and offices, and a view of the boat-house erected on the verge of the lake. The style adopted throughout is the Domestic Perpendicular of the fifteenth and beginning of the sixteenth century. On the south side are two tiers of terraces of considerable extent, descending towards the lake by spacious steps. The east front has a carriage-porch; its three sides being open, adorned with the full arms of the family on the front, surmounting the battlemented parapet. This porch has its roof groined in the local stone with ribs of Bath. It is attached to a low battlemented tower, within which is an open vestibule, enclosed by elaborately wrought iron gates, and this open vestibule communicates with an enclosed vestibule in immediate connexion with the great tower, which forms the central feature of the whole,—rising to an elevation of upwards of 130 feet. The parts flanking the entrance possess the characteristic features of the period, having its corbelled oriels, staircase—turret, battlemented parapets, &c. The kitchen offices have, on the north side, an enclosed court, around which are various out-offices, game-larder, wood and coal store; and at the servants,



THE BOAT-HOUSE, TORTWORTH PARK.—Mr. Teulon, Architect.

entrance an extensive wooden porch, beneath which carriages may be loaded and unloaded. In connexion with this court is a pile of buildings, containing brewhouse, washhouse, and laundry, towering above the other out-offices, all speaking their respective purposes. The drying-grounds are in the rear of these offices, and are all enclosed with solid stone walling, with large arched gateways. In connexion with the mass described, rather to the north, but standing at eastward in the foreground, and thus forming two sides of a quadrangle, is the chapel, built in the same style as the period of the house, but ecclesiastical in its character. The roofs, including the tower, are covered with tiles of reddish grey, which contrast well with the greenish cast of the stone walls.

A writer in the *Bristol Mercury*, who has given a pleasant account of the building and its adjuncts, says of the interior, "From the carriage-porch with the groined vestibules, before described, we proceed at once into the principal hall, underneath the great tower: this hall is open to the summit, presenting the ponderous roof with its dormers and cupolas to view, and elaborately wrought galleries at each story, sustained upon ponderous corbelled brackets of oak. Within this tower is the principal staircase, entirely of oak, running against three sides of the interior, and terminating on the first-floor upon a spacious landing, extending between two arcadings, and communicating with the principal bed-chambers. Thus this tower becomes the centre of communication with all the principal apartments both below and above. The staircase is very elaborate, having a spacious gradual ascent, enclosed with richly wrought and carved tracery panels, partly charged with heraldry; and massive newels, also carved, and these carved panels form the enclosure of the landing. The whole of this presents a very spacious and effective appearance." On the right of the vestibule, facing the south, is the morning-room, 35 feet by 25, and 20 feet high. On the left, the dining-room, with a communication at the north end for the servants' entrance. This room faces the east, and is rather irregular in form, having a large oriel for the sideboard. Its dimensions are about 35 feet by 25 feet, some parts being wider. On the left side of the great hall is the drawing-room, 35 feet by 27 feet, communicating by means of a large arched opening of wrought stone with the library, a spacious apartment in two divisions: thus, the drawing-room and library form one apartment, in shape that of the letter L. All the principal rooms have door-frames of moulded and carved stone; oak doors with cusped panels, and hinges and fastenings of wrought brass. The ceilings are all constructed with moulded and transverse beams of oak carved in foliage at the intersections. Up the centre of the area, which forms a great ventilator to the kitchen offices, runs a railway from the coal depôt in the basement up to an adjunct to the great tower, in which is contrived a simple machinery to raise coals and luggage to the several stories; so that as soon as luggage is received at the servants' entrance, it is put upon the rail and sent up to the lift, by which it is removed to the principal bedroom floor and deposited in the assigned apartment of the visitor. From the first gallery of the staircase, proceeding both on the east and west sides and continuing round at the north end, is a wide corridor extending the whole round of the mansion, lighted from the area, and affording on one level a place of exercise 300 feet long. The chimney-pieces are of stone: those of the principal rooms are elaborately carved, and of considerable elevation, after the manner of those of the period. In some of the principal rooms the ancient chimney-pieces from the old court-house have been adopted, and have for that purpose been restored. The stoves are all of wrought-iron, with dogs; and the hearths, of glazed encaustic tiles enclosed with stone fenders. The hall, vestibules, corridors, and kitchen offices, are lighted with gas, for the manufacture of which an establishment is built in the rear of the stables; and the hall, vestibules, and corridors are heated with warm air. The chapel is a parallelogram in plan, having a south porch: the walls are of the same stone as the mansion, its roof of oak being after the manner of the ancient hammer-beam roofs of that period; these hammer-beams being carved in figures of angels, and the intermediate spaces in carved ribs. The sittings are all of elm, very plain open benches. Mr. Joshua Higgs was the contractor; Messrs. Haden and Son, of Trowbridge, were engineers; Mr. Baily, of Gracechurch-street, made the iron-work; and Mr. Gibbs, of London, the painted glass.

The Surrey Archæological Society.—This association is making very satisfactory progress. It is now 170 strong. The Duke of Norfolk has accepted the office of president. Lord Ellesmere, the Bishop of Winchester, Lord Downe, and Messrs. Freshfield, M.P.; Grissell (high-sheriff); Evelyn, M.P.; Drummond, M.P.; Apsley Pellatt, M.P.; Bell, M.P.; Somers Cocks, M.P.; George Robert Smith (late high-sheriff); Col. the Hon. M. E. Onslow, and Sir C. Sullivan, bart. are vice-presidents. Mr. Somers Cocks is the treasurer. The inaugural meeting will be held, we believe, in Southwark, some day in January. Applicants for admission to the society may write to Mr. G. B. Webb, Addison-road, Notting-hill. Those who join before the 1st January, will be exempt from the entrance-fee.

PROVINCIAL NEWS.

Ipswich.—The most important restorations and repairs which have been ventured upon in any of the town churches, says the *Ipswich Journal*, are now in progress at St. Mary Tower. The enlargement consists of a northern aisle being added to the chancel. This is of the Perpendicular style, the piers and arches which connect it with the original building being exact counterparts of those on the southern side. Two windows of three bays each give light to the new aisle. The roof slopes from the chancel wall, and in the interior is formed into square panels. The principal alteration in the chancel is the new roof, which is externally of a high pitch, and in the interior is of heptagonal form, the seven sides being formed of square panels, ornamented with foliage at the junctions. At present the pavement is not laid. A pierced parapet has been commenced, but cannot be carried on further for want of funds. The architect from whose designs, and under whose superintendence these improvements have been executed, is Mr. R. M. Phipson, of Ipswich.

Friern Barnet.—The church here was, on Thursday in last week, reopened by the Bishop of London. The restorations (in fact, rebuilding) are from the designs of Messrs. Habershon. The contractor was Mr. Whitehead, of Royston. The Early English period is the style adopted. The stone and wood decorations were given to Mr. Baker, of Southampton; and the clerk of works is Mr. Coleman. In the afternoon the children were regaled with the good things of this life at the new schools by the same architects.

Saint Ives.—On 31st ult. tenders were delivered at the office of Mr. Allen, architect, for the erection of the national parochial schools at West Wratting, near Linton, Cambs: they are as under, viz.—

Mason (Huntingdon)	£1,587
Booth and Lunn (Boston) ...	1,233
Freeman (Ely)	1,125
Bennett (Whittlesey)	1,098
Oates (Cambridge)	994
Jobson (Great Shelford).....	985

The schools intended for boys and girls, with residence for the master and matron attached, are in the Tudor style of architecture.

Aylesbury.—A plan has been resolved on for reseating and lighting the parish church, based on a scheme prepared by Mr. Hunt.

Wirksworth.—The wooden spire, covered with lead, is to be removed from the tower of Wirksworth church, and four new pinnacles added, while some interior improvements are also to be carried out. A general clearance and restoration are requisite.

Southampton.—A new street is to be opened from the Western shore-road to St. Michael's-square according to plans to be prepared by the surveyor, Mr. J. Poole.

Salisbury.—The progress of the drainage works was reported at a recent meeting of the local Board of Health, by Mr. Rammell, who stated that from the town being drained to a level with the sewers, some of the wells in the town had been dried up: these he recommended should be deepened, till March next, when the waterworks would be completed. The drainage works would be finished in nine months from the commencement. He was in favour of the erection of works at the outfall to secure the manure as a source of profit to the board.

Chaddesley Corbett.—The spire of the church having some time ago been struck by lightning, and considerable damage done to it, has recently been repaired by Messrs. Brown and Sons, of Sheffield, builders. The parishioners have refused to erect a lightning conductor, for which piece of parsimony they deserve to be punished more severely next time than by mere damage to the spire. We would not wish their lives to be in jeopardy, however; but they do not seem themselves to care, for they are thus deliberately endangering their own lives. Where a spire has been once struck, it has often been found to be liable to be struck again.

Framlode.—The new church in process of erection here is progressing, and it is hoped that schools and a parsonage will follow.

Clifton.—The consecration of St. Paul's Church, Victoria-park, Clifton, took place on Tuesday in last week. The edifice, which was designed by Messrs. Manners and Gill, of Bath, architects, and built by Messrs. Willcox and Son, of Bristol, at a cost of 4,000*l.* raised by subscription, is in the Early Decorated style. Its plan comprises a nave and chancel with side aisles, one end of the nave being set apart for the chancel. The length of the church is 90 feet; breadth of nave, 22½ feet; between the piers and each aisle, 17½ feet. There is besides a transept, with a gallery over it. The roofs are open timber work, the nave roof 38 feet high, and the aisle roofs 34 feet. The tower is surmounted by a spire; height of tower and spire, 105 feet. The walling is of Hanham stone: the piers, arches, dressings, and spire are of Bath stone. The church contains sittings for 850 persons, 100 free. Over the south or principal entrance is a mortuary window, to the memory of the martyred bishops—Cranmer, Ridley, Latimer, and Hooper.

Stonehouse.—The current accounts of cost of the East Stonehouse Waterworks, made up by the local commissioners, and audited, show that on the capital account the amount expended to obtain the Act was 1,422*l.* 17s. 1d.; cost of land and conveyancing, 1,531*l.* 4s. 5d.; cost of pipes, valve cocks, &c. 2,535*l.* 13s. 7d.; amount advanced to contractors for reservoirs, 632*l.* 10s. 10d.; ditto, ditto, for pipe laying, 196*l.* 3s. 6d.; engineering charges, 132*l.* 3s.; wages, 103*l.* 11s. 2d.; general works, 16*l.* 4s. 7d.—making a total of 6,571*l.* 8s. 2d. which had been expended on the capital account; and on the annual, 1,276*l.* 15s. 3d. making a total of 7,848*l.* 8s. 5d. The commissioners considered the amount required to finish their contracts for the reservoir, pipe laying, and other expenses necessary to complete the works to be 1,230*l.* which increased the liabilities to 9,078*l.* 3s. 5d.; but from this was to be deducted the amount collected from the rates, 256*l.* 19s. 8d.; and 11*l.* 2s. allowed by the appeal at Exeter, which would leave the actual costs of the works, when completed, 8,811*l.* 1s. 9d.

West Bromwich.—Application is to be made next session of Parliament for power to carry out a system of sewerage and drainage for this town, with reservoirs to intercept the sewage for agricultural purposes; also to form a market and market-place, and a cemetery, all to be carried into effect by Commissioners under the Public Health Act.

Ashton-under-Lyne.—A similar application to Parliament is to emanate from this place for the erection of a bridge across the Thame from Ashton to Dukinfield, with approaches.

Rugby.—The Local Board of Health of this town have leased their drainage to Mr. Walker, a grazier, at Newbold Grange, near Rugby, for twenty years, at 50*l.* a year. The farm comprises upwards of 400 acres, four-fifths pasture land. The population of Rugby is about 8,000, being an increase of 4,000 in seven years. There are 1,260 houses, two-thirds of which have their water-closets connected with the main culvert, which is upwards of six miles long, emptying itself into the manure tank within 50 yards of the Rugby and Leamington Railway. This tank is 50 feet in diameter, by 10 feet deep, and holds 120,000 gallons. Close to it is the engine-house, in which is fixed a high-pressure and non-condensing engine of 12-horse power. A gutta percha blow-pipe runs from it, of sufficient length to encircle the tank, through which a current of air is forced. This, by constantly troubling the liquid manure, prevents any settling at the bottom. The manure is conveyed over the farm by means of iron pipes made to sustain the pressure. They are 6, 4, and 3 inches bore, and will be upwards of ten miles in length. Workmen are laying them down, and the work will be completed in three months: the pipes are joined with lead, and this process alone will cost 500*l.* The experiment of raising seven crops in one year (according to Mr. Rammell) by irrigating the grass lands with the sewage manure, will thus be tested. The interest of the local farmers, it is said, has been excited, and they anxiously await the result.——The new parochial schools in St. Matthew's district are for 150 boys and 150 girls, with class-room, and teacher's residence attached. The walls are built of red bricks, with Bath stone quoins and dressings, and the roof is covered with Newcastle tiles. Mr. F. Wood was the architect, and Mr. H. Haddon the builder. The total cost, including 210*l.* 19s. 3d. for the site, was 1,622*l.* 16s.

Nottingham.—The town council have appointed a committee to consider and report on the propriety of acceding to the request made by a public meeting that the corporation would apply to Parliament for power to purchase the works of the companies now supplying this town with gas and water; and also for power to construct gas and water-works for the supply of the town in case the existing works be not purchased.

Melbourne.—A gas work has been erected here, and the town was lit up last week in the midst of a general rejoicing. Mr. T. Atkings, of Oxford, is the contractor.

Redditch.—The chief stone of the new church of St. Stephen, here, was laid on Monday in last week. The new edifice will be about twice as large as the old one. It will be in the second Pointed style, with the greyish Tardebigg stone for the mass of the building, Bath stone for the dressings, and slate for the roofs. It is to consist of a nave, with side aisles, a vestry-room, a tower, and spire. The roofing will be open, and three-bay. The side walls will be perforated each with four three-light windows, with tracery in the heads. The east window will be larger, with more elaborate tracery, and the western wall will also contain a good-sized window. The tower will stand at the west end of the north aisle. The seats are to be plain, open benches. The internal dimensions of the church are as follow:—Nave, 111 feet long and 27 wide; aisles, 21 feet wide each; chancel, 37 feet 6 inches long, and 24 feet wide; the roof of the nave, 48 feet, and the roofs of the aisles, 41 feet 9 inches; the tower, 60 feet high, and the spire, 80 feet, making together 140. The architect is Mr. Henry Woodyer, of Guildford, Surrey; and the builder, Mr. George Taylor, of Coventry. The contract for the building of the church amounted to 5,900*l.* including tower and spire, but the materials of the chapel were to be taken for 300*l.* in part payment.

Manchester.—It is stated that the land on which the new Free Trade Hall stands, has at length been sold by Mr. Cobden to the company; and that the plans for the new building are to be competed for by Mr. G. Walters, Mr. J. E. Gregan, Mr. E. Solomons, Messrs. Travis and Mangnall, and Messrs. Starkie and Co. They are to be ready by 14th December. The second-best competitor is to have 100*l.* The first story is to be an underground cellar with fire-proof ceiling, to be let off: the second is to be a hall, seating 4,000 persons (or standing room for 10,000); and over this a concert-room to seat 600 persons, with ante-rooms, and other apartments.

Ashton.—St. Peter's Church has undergone a renovation, and was re-opened on Thursday in last week.

Bradford.—The Independent chapel, called "Lister Hills Chapel," was opened on Friday in week before last. It is in the Geometric style. The plan is cruciform. The nave is 90 feet long by 45 feet wide. The transepts are 35 feet by 20 feet. The roof is of open timberwork. Two schools, each 60 feet long by 20 feet wide, occupy the ground behind the chapel. One-half the erection is on the rock, and the other on an old quarry, making extensive artificial foundations necessary. The architects are Messrs. H. F. Lockwood and W. Mawson. The expense of chapel and schools will be 3,000*l.*: towards this sum 1,200*l.* or 1,300*l.* are subscribed.——The foundation stone of a new Primitive Methodist chapel was laid in Back-lane, Bowling, on Saturday week.——The corporation have announced their intention to apply to Parliament for power to purchase the local waterworks, and to form corporation waterworks to supply the borough and various other townships, by means of numerous reservoirs, collecting water from streams flowing into the Aire. Other schemes are on foot.

Brampton Bierlow.—The foundation stone of a new church was laid at West Melton, on Tuesday in last week, by Earl Fitzwilliam, who has contributed the site and 1,000*l.* The cost of the building is estimated at 3,000*l.* It will

accommodate 500 persons, and is to be built of stone quarried in the field where it is to be erected. The style will be Decorated, with tower at west end. There will be nave, side-aisles, and chancel. The architects are Messrs. Pritchett and Son, of York. The contracts are not yet entered into.

Doncaster.—A new Primitive Methodist Chapel is to be erected in Spring-gardens, on a site 24 yards by 19, and at a cost estimated at 2,000*l.* The chapel will be made to accommodate 1,400 people. It will front Cleveland-street; and a school and class-rooms will be under the edifice. Mr. Scissons, of Hull, is to be the architect.

Keighly.—A new church is about to be erected in the district of Eastwood, Keighly. It will consist of nave, chancel, and transepts, with bell-turret at west end. The works have been advertised to be let. Messrs. Perkin and Backhouse are the architects.

Northallerton.—The Local Board of Health having been ordered by the General Board to close the burial ground in the churchyard on 1st February next, the Local Board and the ratepayers are about purchasing of the Ecclesiastical Commissioners the moat field, in which stood the episcopal palace of the bishops of Durham, and the adjoining "dungeon hill," on which stood the ancient castle, not far from the church.

Leeds.—About two years since a clergyman in the midland counties, who does not wish to have his name made public, placed at the disposal of Dr. Hook, Vicar of Leeds, a sum of 2,000*l.* to be applied towards the building of two new churches in some of the densely populated districts in the parish. The consecration of one of these took place on Wednesday in last week.——The Central Market Company have given notice of again applying to Parliament for power to extend their covered market. Besides opening out much-needed thoroughfares from Kirk-gate to Duncan-street and Call-lane, says the *Leeds Intelligencer*, the projected improvement would also remove a large mass of old, rubbishly, ill-ventilated, and unhealthy tenements, occupied principally as lodging-houses of the worst description, in the very centre of the town. The scheme was before defeated by the Town Council, on pledging themselves to make a covered market themselves, at a cost which the *Intelligencer* estimates at 25,000*l.* to 30,000*l.*

Blackburn.—Notice has been given by the corporation of application to Parliament for power to purchase the local gas and water works, and to supply the town with gas and water, construct baths and washhouses, establish places for recreation, and make other improvements.

Kendal.—Mr. H. Halhead, of Liverpool, has announced his intention of contributing a memorial window of stained glass for the large eastern window of the parish church here.

Dalton.—The dilapidated church here, according to the *Carlisle Journal*, has now been restored, and is to be opened on the 13th instant. The county surveyor, Mr. Robinson, planned the restorations, which were carried out by Mr. Jackson, builder. Mr. Faucet, of Appleby, supplied the stained glass windows.

Newcastle-upon-Tyne.—The designs of Mr. Thomas Oliver, jun. architect, of this town and Sunderland, have been selected by the English Congregational Chapel Building Society for their "model chapel." They propose building fifty in five years.

Glasgow.—Sir James Campbell has obtained authority from the Guild Court to erect an extensive pile of buildings on the south side of Ingram-street and corner of Brunswick-street. The frontage to Ingram-street is 250 feet in length by 120 feet deep; and it is proposed to erect on this site a building of three stories in height, with sunk story, all under one roof, as a place of business for Messrs. Campbell and Co.

Paisley.—The gas commissioners here have recently had a telescope gasholder made by Messrs. Hanna, Donald, and Wilson, engineers, for the iron, and Mr. W. Bowes, builder, for the mason work. The completion was celebrated by a supper for 200 inside the machine, which, we may mention, is 75 feet in diameter and 40 feet deep.

Nairn.—A new landing-pier has just been constructed here. The structure, which is about 300 feet in length, is an extension of the old stone pier, and consists of a wooden framework of piles and beams, bound together with iron, faced with planks, and filled up with large stones. There is a roadway for carts to the extremity of the pier, which terminates in a bulwark of hewn stone, sloping towards the sea. The cost amounts to upwards of 600*l.*

LUDGATE-HILL.

Will you permit "A Liveryman of London" to urge the necessity for improvement in Ludgate-hill, to meet the greatly increased traffic which is likely to arise in that thoroughfare with the New Cannon-street, when completed.

The whole of the houses on the south side of Ludgate-hill to the line of St. Paul's Churchyard should be set back, making the front of the houses occupied by Ellis and Everington the line to be continued as far as Bridge-street, Blackfriars. The first objection I think I hear to this great improvement is the enormous expense attending it. I meet this objection by referring the parties to the valueless nature of the property situate in the rear of the houses on this side of Ludgate-hill. All the streets, lanes, courts, and alleys there situate might be removed at a comparatively small expense, and a very great advantage to the public, and the new front of Ludgate-hill formed before the old line of street need be disturbed.

C. R. C.

*** "A Liveryman" would be somewhat astonished if he came to know what the cost of the alteration proposed would really be. Nevertheless, something is imperatively required to be done to relieve Ludgate-hill.

ACCOMMODATION IN THE BRITISH MUSEUM.

We Londoners have very limited opportunities of gazing at the beauties of nature, but then, as a compensation to this, we have increased facilities for studying the works of art, both ancient and modern. To mention only those places which are open without payment to the public, the National and Vernon Galleries, and the British Museum, are invaluable to a Londoner. I do not wish to discuss whether these institutions are better or worse than those of other nations: whatever be their comparative merit, we know that they are actually of great value. It is the Museum to which I wish now to ask your attention, and to one trifling defect which makes a visit to it much less agreeable, and much less useful, than it would be otherwise; and this is *the great scarcity of seats*, and particularly the entire absence of moveable seats of any kind. A beautiful object requires to be looked at calmly and leisurely. The mind and body must be in a state of repose, and anything like hurry or weariness altogether prevents the idea of beauty from sinking into the mind. For instance, who would go and place objects of art on a railway platform, and expect them to be properly appreciated? On the contrary, the proper place for such works is some situation of quiet repose, the vestibule of a temple, the porch of a church, or the fountain in the centre of a square. The British Museum is full of very beautiful objects, and they are such, especially the sculptures, as require to be looked at long before you can take them in, before you can comprehend their character and beauty. You ought to be able to sit down quietly before the object you wish to see, and examine it at your leisure. And yet in many of the rooms there are no seats at all. In the first gallery that you enter, where there are a number of small figures and busts of great beauty and interest, there is no seat. Nor is there near the larger Townley statues, nor in the Assyrian galleries, nor indeed in the long Egyptian saloon, except two benches near the "Young Memnon," but not in a position to command a view of that beautiful head.

I will not deny that I have once or twice discovered a chair with a broken back in an excellent situation exactly opposite the Young Memnon, and that I unhesitatingly made use of it to get a careful view of that statue. But I was aware that one of the gentlemen with the long sticks who parade the Museum was observing me with a jealous eye, almost as hard to bear as the quiet majestic scorn of the great Rameses himself. And as soon as I left my seat he took immediate measures to secure it from any further intrusion by occupying it himself.

There is also another chair placed under the grand old fragment, headless though it be, of Dionysius in the Elgin room, though I confess I should not like to sit upon that, one would look so exceedingly small, even with all the advantage of a head and arms, of which the old Pagan deity is destitute. These chairs are of course not meant for the public, and I wish to point out what a great advantage it would be if, in addition to the few fixed benches already in the Museum, and which are not in very convenient places, there were a number of chairs which the visitors could take and place before any object which they wished to see. The thing is done admirably in the National Gallery: there every one can sit down and gaze leisurely at the beautiful compositions of Francia and Guido, Raphael and Murillo, Turner and Claude, and many more. It might not be quite so easy in the British Museum, but still I think it would be possible to accommodate us a little.

The arrangements of the Museum generally seem good: the attendants are civil and always ready to point out any object one may wish to discover: it is a pity that such a little matter as this should mar the advantages. F.

NEW CHURCHES IN NEW YORK.

A church for the Unitarians is being built in New York (4th Avenue) in the Lombardic Rommesque style, from plans by J. Wrey Mould, pupil of Mr. Owen Jones, recently established there. The materials employed are from quarries near Falaise and Allemagne, in Normandy, and Philadelphia brick. The controlling colours will therefore be a deep Indian red and a rich cream,—colours chosen by the architect partly with reference to their chromatic combination with the blue of the sky. These materials alternate in bands a foot broad, running in panels divided off by vertical ribs of brick-work all round the building, in a manner similar to churches in Vicenza and Verona.

The most striking feature in this edifice will be a campanile or clock-tower, to rise at the N.W. angle, quite detached from the main body of the church. It will be 24 feet square at the base, and 227 feet in height, containing the staircase leading to the organ gallery, a library, bell-ringer's chamber, a carillon of bells, and also a clock, 22 feet in diameter, one face of which will tell the hour of the day, another the day of the month, and a third the direction of the wind. The architectural description of the interior of the church may be given as follows:—The centre consists of a square 54 feet, on each side of which rise semi-circular arches of 41 feet span: on the north side extends a transeptal double gable, which will contain the organ and organ gallery: on the west side, a nave 35 feet long by 41 wide, leads up to the central square from the entrance-porch: a smaller transept and an apsidal chancel respectively complete the south and east ends. The internal height to the spring of the main roof will be 60 feet, to the ridge 75 feet. The extreme length is 120 feet, and the extreme width 87 feet. Four intersecting iron trusses, which span the central square, will support an octagonal lantern of brick and stonework, surmounted by a dome 32 feet in diameter; the total internal height to the crown of the dome being 105 feet; and external, to the top of the cross, 130 feet. The entire cost of this church will not be far from 100,000 dollars. The building is calculated to accommodate 1,100 persons.

Next to this, according to the New York *Journal of Commerce*, the most costly church edifice now in progress is Trinity Church Chapel, near Broadway, which will be finished next summer. It is in a plain Gothic style, and the exterior walls are of Little Falls (N.J.) stone, the same kind of which Trinity Church is constructed. Its dimensions are 190 feet by 60 feet, and the roof is a single span. From the base line to the apex of the roof is about

90 feet. On the north-east corner will be a small bell-tower. The interior is lined throughout with Normandy stone. The interior wall, for which it is used, is entirely separate and distinct from the main wall, as an air-chamber, 4 inches wide, intervenes, to prevent the dampness of the exterior wall from striking through. The air-chamber is ventilated at the top of the roof. The seams between the blocks are filled with a mortar made from the dust formed in sawing the stone, and are scarcely distinguishable. It costs at the quarry 20 cents a cubic foot; and freight (12 cents), cartage, duty, and expense of landing, increases the aggregate about 20 cents. The chapel, when completed, will have cost not far from 100,000 dols.

The church edifice building for the Dutch Reformed denomination, is the most expensive of the churches now in progress. It is built entirely of Hastings marble, in the Byzantine style of architecture. Within, the body of the building is one room, unbroken by a single column. The galleries are all self-sustaining, being anchored to massive exterior buttresses, and strongly braced. The organ will occupy a recess above the second gallery. In the rear of the pulpit are many conveniences not heretofore introduced into church edifices, also lecture and schoolrooms. The architect is Mr. Samuel A. Warner. The steeple will be about 225 feet in height.

SCENERY AND THE STAGE.

The Haymarket.—"A Pretty Piece of Business" is a capital farce, exceedingly well played. "A Cure for Love" keeps its place, thanks mainly to the mirth-moving acting of Mr. Buckstone; and Miss Featherstone increases in popularity as a charming singer of ballads and an intelligent actress. *Evelyn*, in "Money," scarcely suits Mr. Vandenhoff: he is too large and comfortable for the poor scholar and dependant. We shall be glad to see him in a new part suited to his powers. His *Hamlet* is a very meritorious performance. The new drop-scene wants force, but is nevertheless a pretty piece of painting.

The Lyceum.—"How to make Home Happy" being one of our own great objects, we of course went to get a hint or two when it was announced here. The way in which the piece chiefly fulfils its promise is by making every one laugh "consumedly," and giving them something to talk about when they get home. Who can see Mrs. F. Matthews jealous and Mr. Wright perplexed, with anything like gravity? The lessee has revived his ancient triumph, "Patter *versus* Clatter." Is there no one who can write him such another part?

THE SCULPTURES AT WELLS CATHEDRAL.

From the various recent notices respecting extensive repairs of the exterior of Wells Cathedral, one would imagine a work of great magnitude (for which there are no funds) was about to take place.

Being conversant with certain facts, I think, in justice to the authorities and the workman named in "J. R. C.'s" communication, it is but fair to state that the order given to Mr. Derham, is confined to the simply securing the fractured stonework and falling statues on a particular buttress, which has long since been in a most dilapidated and dangerous condition, and with strict injunctions not to attempt sculptural restoration.

The manner in which the interior of this fine cathedral has been restored, renders the neglected state of the noble west front still more conspicuous than formerly; and none would wish to see it rapidly breaking away, not as "J. R. C." would wish it to be supposed, by the *gentle hand of time*, but by the bursting of cramps, and the falling of columns and statues, and in their fall destroying enriched mouldings and exquisite foliations, and though last, not least, threatening the lives of the passers-by. These are of constant occurrence, and within the memory of persons still living, from forty to fifty of the statues have fallen and *are gone!* One, which, it may be remembered, fell long from a height of 50 feet, and weighed three-fourths of a ton, nearly crushed in its fall her Majesty's judges of assize (August, 1850), was afterwards, against hope, at the request of Dr. Markland, carefully put together, and, contrary to all expectation, again replaced, which led to the general supervision of the same grand buttress. Knowing well these sculptures, I cannot agree with "J. R. C." as to the entire incapability of modern art to restore to a certain extent these fine examples; and I believe I am only speaking the feelings of all persons of common sense in expressing a hope that some general supervision of this magnificent façade will ere long take place, not as at Lichfield, with Roman cement, under Wyatt; but with true materials and an enlightened knowledge, reverence, and love for mediæval fine art.

C. R. J.

In reply to the note signed "J. R. C." in a recent number of the journal, Mr. Derham has also favoured us with a letter denying that there is to be a complete renovation of the sculptures. The writer says,—

"Some months ago I was entrusted with a commission to take casts of many of the sculptures and monuments both within and without the cathedral here, for exhibition in the new Crystal Palace at Sydenham. In the course of my labours in taking casts from some of the larger statues in the west front, I found several of them in so insecure a state as to be absolutely dangerous to persons passing near the front of the cathedral. In consequence of this, I communicated the fact to the authorities of the church, and I was desired by one of the canons immediately to draw up a report on the subject, which I did; and being further requested to report also on the probable cost of securing the statues in their niches, I prepared a short estimate of the expense, and was ultimately directed by the dean and chapter to do what was necessary for preventing the figures from falling. I have never had any directions for the 'restoration and complete renovation' of the sculptures, nor am I aware that the dean and chapter have the remotest idea of doing so.

I trust it will be seen that the only thing directed by the dean and chapter to be done, is that which 'J. R. C.' himself recommends, viz. securing the most tottering of the figures from any chance of falling from their niches.'"

THE PARK FOR THE NORTH OF LONDON.

The following memorial from the physicians and surgeons of the metropolis obtained in little more than ten days 1,300 signatures from medical men in all parts of the metropolis. The memorial, with an additional number of names, has since been presented to Lord Palmerston by a deputation from the borough of Finsbury.

"The undersigned physicians and surgeons, practising in London, respectfully urge upon her Majesty's Government the importance of immediate steps being taken to form the long-promised park for the northern part of the metropolis, which a due regard to the health and welfare of the inhabitants imperatively claims.

"When it is considered that, of late, houses have spread over the Spa-fields, White Conduit-fields, Hoxton-fields, Shepherd and Shepherdess-fields, Moorfields, Canonbury-fields, and other open spaces, which were available for the health and recreation of the population of this part of London (Finsbury), and when it is also seen that, for other parts of the metropolis, public parks and grounds are provided and maintained, we cannot too strongly express our earnest hope that a wise and equitable government will no longer delay to carry out this important sanitary object."

The deputation having presented the memorial, the Home Secretary's first inquiry was the expense. 400,000*l.* being stated as the estimate, one of the deputation urged that the Government would in time be repaid by letting a quantity of the suburbs to the park on building leases, and which would not be required for the park. Lord Palmerston intimated his opinion that the Chancellor of the Exchequer would not enter into such a building speculation, but promised to give the subject his best attention.

THE BRITISH MUTUAL LOAN CLASSES.

An influential public meeting was held in Plymouth recently, by The Three Towns British Mutual Subscription Loan Society, to establish a second class, when statements were made fully bearing out the favourable view we took of these classes on their first establishment. Mr. C. J. Thicke, the secretary of the British Mutual Life Assurance Office, said,—They commenced in London, on the 2nd June, 1848, with class A, and on Monday last they commenced the formation of the 44th class. All these classes were now in full operation, except the first five, which had run out. In order that they might possess a clear idea as to the exact amount which a loan would cost, he would suppose that a member borrowed 50*l.* For this he would have to pay 1*l.* a month, and 10*s.* bonus for fifty months, so that his total payments would amount to 75*l.* But the proportion of profits which he would receive would reduce this to 60*l.* so that the actual interest which he would have to pay would only be 10*l.* Now, if he had borrowed the money in the ordinary mode, he would be required to pay 2*l.* 10*s.* a year interest, which would amount to 10*l.* in the four years, and then he would have to return the principal all at once. In London the amount of business which they had transacted was very considerable. When first established, they advanced but about 1,000*l.* during their whole period in each class: now each class generally advanced 1,000*l.* and upwards during its *first* year's progress, and they had increased to such an extent that at the present time 150,000*l.* had been subscribed and lent out. He was speaking within bounds when he stated that they now lent upwards of 1,000*l.* per week. The classes might be described as banking associations on a small scale, in which the lender got the greatest interest for his money, and the borrower paid the lowest rate of interest for his advance. To protect the investing members, the society required in every case such security, let it be of any kind soever, as would satisfy the committee that the money would be repaid, should the borrower fail to do so. The security usually consisted of a bond which had been prepared and settled by counsel, in which the borrower agreed to pay 1*l.* instalment, and 10*s.* bonus per month, for fifty months, for every 50*l.* share advanced, with two sureties, who undertook that in case the borrower neglected for two months to pay his monthly instalments, the committee should have to call upon them for the sum due, and recover it from them. The result had been that he believed not one-eighth of a pound per cent. on the entire amount lent had been lost.

Dr. Evans, of Stockwell, one of the directors of the London assurance office in connection with which the classes are established, said, very happily, that these classes created a capital for character and honesty. Capital, frequently neglecting home and safe demands, sought profitable investment at hazardous risks and in the remotest regions,—whilst honest intelligence or skill at home was too frequently unable to develop itself for want of the modest fostering capital to give it the first start onwards. The British Mutual Loan Classes supplied, to his mind, a great want of the age. They enabled any man, not himself perhaps possessed of a pound, who was happy in possessing the confidence of two solvent friends, to obtain a loan of a few hundred pounds, without doubt and without delay. He could not too often state that they were creating *capital* for *character*: he dared say there was scarcely a man in that room, of middle age, who, from previous disappointment, had not, perhaps over and over again, foresworn all idea of ever becoming security for any person again. In this society, however, it ought to be recollected that the security was limited in time, only extending over fifty months, whilst the amount of the liability was diminished monthly by the periodical repayments, in fact, becoming "small by degrees and beautifully less." A surety for a borrower did not incur the same risk in these classes as in ordinary cases. By the happy contrivance of the classes the gradual repayment of the loan relieved the security imperceptibly from his responsibility, thus reducing the amount of the risk which he incurred in the first instance: besides, there was the policy of assurance, which in the event of the borrower's dying before he completed his engagement, stepped in and completely relieved the surety from any further liability.

Notices of Books.

Hints on Houses. By Alfred Lang, Architect. Rees, Paternoster-row. 1853.

Here, in a handsomely printed volume, Mr. Alfred Lang, formerly a pupil of Mr. Decimus Burton, has brought together a heap of hints and suggestions touching the position, construction, and adornment of dwelling-houses,—"as grains of salt (in the words of Bacon), that will rather give you an appetite than offend you with satiety," and prefaces them with some notes on the buildings of the ancients, wherein he trips from Babylon to Bayswater, from Solomon's Temple to Soho-square.

Amongst the evils and defects of modern locations, he points to the closeness to each other with which they are built, and recommends the erection of single houses.

"By some, a semi-detached house is preferred to an isolated one, as they say it is more pleasant and safer to have immediate next-door neighbours; but this is readily met by asking, is it not more dangerous to have an empty house next door as a facility for thieves? There is also an extra risk of fire. The inconveniences arising from coupled houses far outweigh any advantages that can be brought to bear in their favour. Every one knows, or has experienced, the annoyance of sound from an adjoining house: a very thick wall is required to keep it out; but thick walls are not in

use now: the travelling of sound can scarcely be prevented, particularly of musical instruments, by an ordinary brick wall, say of even two bricks or 16 inches in thickness."

When the value of the land is not too great, he would have the kitchen on the ground-floor:—

"At the first glance it may seem that attaching the offices to the house may cause an increased expenditure. On consideration this is not so apparent: for instance, suppose a house cover ten squares on the ground-plan, and the offices be underground, hence it almost follows that they must occupy ten squares also. And the uppermost story, usually appropriated to the servants, must also be of the same area. Ten squares may not be too large a space for the principal or ground-floor, nor for the chamber floor, but it may be in proportion too large for the offices and the servants' sleeping apartments; two staircases are saved: the walls to the attached offices do not require to be of such a thickness as the main building, nor the timbers of the same scantling; and an immense amount of domestic labour is saved. There are few portions of a servant's duties more laborious than going up and down stairs. Basements, or underground stories, can never be sufficiently lighted, nor effectually ventilated; and all the bad and unwholesome gases engendered are sure to rise, and impart themselves over the upper part of the house."

Mr. Lang very properly cautions those who desire to purchase or rent houses against relying on their own judgment, but to seek the assistance of an experienced professional man.

Speaking of floors of buildings, he says,—

"I have before mentioned the necessity of having a free circulation of air under the ground or basement floors, and it is scarcely less desirable in other floors. In the common single-framed floors this is impossible, as the joists run from wall to wall, and are inclosed on the top by the floor-boards, and on the underside by the ceiling; therefore if an air brick were built in the wall, it would merely have an effect on the space between two joists, and not cause a free circulation throughout the whole of the floor timbers. It would be unsightly to build in air bricks between each joist, and also perhaps admit more air than would be desirable for the comfort of the occupiers. A very simple and inexpensive arrangement will provide for this difficulty, and it consists in merely nailing narrow battens to the joists transversely, and then nailing the laths to these battens. The loss of the height in the room is at most an inch, and as the lathing then follows the same direction as the joists, the plastering of the ceiling is less liable to crack, as they frequently do, owing to the shrinking of the joists or to any extra strain being put on them. Nailing laths dingonally prevents, to a great extent, the plaster cracking whether in ceilings or partitions."

The book is addressed to the general reader, to all who are interested in obtaining a sound, well-arranged, and comfortable house, and to these we can justly recommend it. Its circulation cannot fail to be useful to the public; and will, we hope, be so, too, to the author. "A badly-finished house can never be a comfortable one."

Hand-book of Natural Philosophy. By Dionysius Lardner, D.C.L. Third course: Meteorology—Astronomy. Walton and Maberly, Ivy-lane.

THIS is a valuable work, comprising a full compendium of the wonders of astronomy and meteorology. All the more recent acquisitions are embodied in its 852 pages, small octavo; and these, in astronomy, at least, are not the least wonderful and interesting of the stores of that sublime science, comprehending, as they do, the latest discoveries made by Lord Rosse's great telescope, and the new, and, as it now appears, actually translucent, ring of Saturn, which is said to be clearly visible through telescopes that, strange to say, not long ago displayed no such sight, though expressly brought to bear on Saturn, for the purpose of closely observing everything connected with him. There are some new and interesting plates of the solar spots. A little consideration of these, by the way, suggests an idea which it may be worth while even here to record. It has been noted that these spots, when they first open out and expand, present vivid linear edges, as if the luminous matter were pressed forcibly back, as it seems to us, around the margin of the dark spot, while this matter, as the spot collapses, rushes back into the void, darting fringes from all sides through it, these sometimes even meeting from the opposite sides. Is it not palpable, therefore, that the solar spots are not merely partial openings "comparable to the openings in the clouds of our sky," but openings brought about by the positive and partial intrusion of some non-luminous vapour, probably ascending from the solar surface, and undoubtedly acting forcibly on the luminous atmosphere, repelling it all around, so as to make way for itself into, and probably through that atmosphere, when immediately the luminous waves recoil and concentrate and close again, so as to fill up the void left when the pressure has ceased? Every suggestion worth a thought may constitute one little step towards the revelation of a subject, such as this is,—dark, as we may truly say, with excess of light.

There are minor inaccuracies in this standard work, which may lead to important misapprehensions on the part of many readers, and which we think ought carefully to be corrected in a future edition. For instance, in speaking of the planet Jupiter, the author says (p. 337), "The direction of the apparent motion of the spots gave the position of the *equator*, and consequently of the *axis*, *which* is inclined to the plane of the planet's orbit, at an angle of 3° 6'." Now a reader not minutely versant with his subject, would here naturally conclude that it is the *axis* of the planet which is inclined to the plane of its orbit at an angle of 3° 6', whereas, it is the plane of its equator which is inclined at that angle to the plane of its orbit—the two planes, in fact, being nearly coincident, so that there are scarcely any changes of season such as we have on the planet Jupiter. Again, in respect to the same planet, the author (p. 332) in speaking of "its prodigious orbital velocity" says, "The velocities with which the planets move through space in their circumsolar courses, are on the same prodigious scale as their distances and magnitudes." Now, if by this it were meant that the orbital velocity of the greater planets is itself greater than that of the smaller planets, this would be a mistake; for to use the author's own words, while the orbital velocity of Jupiter is "700,000 miles per day, 30,000 per hour, 500 per minute, and 8⅓ *per second*—a speed sixty times greater than that of a cannon ball," the orbital velocity of our little planet, the Earth, is "1,653,368 miles per day, 68,890 per hour, 1,148 per minute, and 19·1 *per second*." In short, the orbital velocity of the smaller and more centripital planets is far greater than that of the larger and more centrifugal, although their rotatory velocities are the reverse, the enormous circumference of Jupiter completing its revolution pretty nearly three times during the twenty-four hours' rotation of our little sphere; so that Jupiter's day and night are only between four and five hours each in length.

We trust, however, that it will not be for a moment imagined that we presume to think we are correcting positive errors on the part of an authority such as Dr. Lardner; we are merely pointing out instances of carelessness and obscurity of expression likely to lead to positive errors in the minds of some of his readers until corrected.

The work is fully illustrated with lithograph plates and woodcuts.

Miscellanea.

PARCELS DELIVERY BY ATMOSPHERIC PRESSURE.—We seem, says a New York letter, to be on the verge, if, indeed, we have not reached it, of most important discoveries and inventions in atmospheric pressure as a motive power. The most interesting application of this principle has been made by a Mr. Richardson, who has satisfied our capitalists that it is entirely practicable to build an atmospheric tube from New York to Boston (200 miles through which mail bags or parcels of any description may be regularly, certainly, and safely sent in fifteen minutes. He has perfectly obviated the most apparent difficulty, which consisted in the collision of the parcel despatched on reaching its termination. This he has accomplished by the counter pressure, arising from the elasticity of unexhausted air, thereby reducing the shock until it becomes absolutely imperceptible. A considerable part of the stock for the building of this mail-tube has already been subscribed. The idea of this project was suggested in a semi-serious way merely, some five or six years since in the *Builder*.

SHEFFIELD.—The question as to the establishment of a free library and museum in Sheffield, under Mr. Ewart's Act, has been submitted to the votes of the burgesses in the various wards. A majority of two-thirds of the votes given was required. The numbers were 837 for, and 232 against; so that the decision is in the affirmative. About one-fourteenth of the burgesses recorded their votes.——The People's College here is reported to be in a flourishing, self-supporting state. Dr. Lyon Playfair was invited to preside over their last anniversary meeting. He delivered an address, showing the increasing value of intellectual cultivation, and the decreasing value of hand-labour and the raw material,—describing how much better it would be both for industry and science, if industry remembered that science was her best friend, and made more provision for the learned class by whom manufacturers profit, instead of squeezing all the good possible out of the men of science, and then letting them starve,—inculcating a nobler motive, that of cultivating science for its own sake,—and speaking with all the weight of his own experience of the joys of scientific study, and the increase of dignity and self-respect which it entails. The People's College has aided in educating, more or less, 2,500 persons—men and women—in five years. It is said to have refused help from the rich, and existed by its own vitality.

CLEANSING SEWERS BY MACHINERY.—With all the cry about sanitary reform, says the *Liverpool Journal*, it will scarcely be credited that up to the present time no efficient machinery had been invented for the cleansing of sewers. Few large towns can spare the weight of water requisite for a complete flushing; and even in London men have to descend into the sewers, and remove, by manual means, all obstructive accumulations. We are glad, therefore, to notice an invention for the purpose, by Mr. Richard Blaydes, one of the surveyors in the borough engineer's office here, and a description of which has lately been published in a pamphlet form. We understand that it has met the approval of Mr. Newlands, and all the trials made in Liverpool, under his superintendence, have been successful. A crane is placed at each of two gully-holes, and a chain carried between each by means of a float line. This chain is worked backwards or forwards till the silt is loosened, and buckets attached to it to remove and raise the refuse in the most convenient manner—the sewer by similar means being then finally cleansed by brushes. It has been proved, that by the process eleven men, in the third of a day, will cleanse a length of sewer that, under the old system, would occupy three men ten days.

RENTS IN PARIS.—The Paris correspondent of the *Globe* speaks of the enormous augmentations of rents by house-owners, where leases were expiring. The system, he says, continues, but is not likely to last long, for not one apartment in ten is now let at the price demanded, and many shops in the best situations are without occupants. If this is the case now, he continues, what are the landlords to expect when the numerous new streets that are building shall be completed! It is probable that rents will then fall at least 20 per cent. He knows several families who have left Paris and gone to Versailles, and other places at a short distance from the capital, rather than submit to the extortions of the Parisian house-owners. At Versailles the rents of houses and apartments are not half what they are in Paris, and the accommodations, generally speaking, are much better. The railroad company issue season-tickets for second-class carriages at only 200 francs per annum. A man can save, if his family be large, something like 2,000 francs a year in rent, provisions, education, &c. by having it at Versailles, and can go to and from Paris every day at the rate of little more than ten sous.

FALL OF A HOUSE IN WEST SMITHFIELD.—On Saturday afternoon, says the *Morning Herald*, the inhabitants of West Smithfield and Great Bartholomew-close were alarmed by the falling of the house numbered 57, West Smithfield, injuring in the *débris* four men who were employed on the roof, taking down a massive chimney. About five weeks since the house above mentioned, with the two adjoining, was completely gutted by fire, and after having been surveyed they were condemned. Since then no precautionary measures were adopted to ensure their stability. The houses are very ancient, being coeval with the dissolution of the Priory of St. Bartholomew.

AID TO MENTAL CALCULATION.—To multiply a number by eleven, says a contemporary, add together its two extremes, and place the sum between. Ex. $36 \times 11 = 3\ [9]\ 6$—three hundred and ninety-six—the figure included by brackets being the sum of 3 and 6. The hint may be of occasional use, but it is not explicit enough: for instance, take the next number.—37. Seven and three are ten: if this sum were "placed between" the two extremes, we should have 3107 instead of 407. It is clear, therefore, that when the sum amounts to a double figure, the tens must be added to the hundreds.

PATENT RIGHTS: CARBURET OF MANGANESE IN STEEL MANUFACTURE.—In the Court of Queen's Bench on Monday week a new trial was moved for in Heath v. Smith, for the infringement of a patent. The only question was whether the invention could be said to have been publicly used before the date of this patent. It had long been known that the use of carbonate of manganese was required in the manufacture of cast steel. The difficulty was, that the manganese was only found as an oxide, and when introduced into the melting-furnace it had so strong an affinity for the carbon in the pots, that it destroyed the pots and so spoiled the process. It occurred to the defendant that he could remedy this defect by introducing it in the form of a carburet, and he did so most effectively and advantageously. He took out a patent for his discovery, and afterwards finding that the defendant was using the same process without his permission, he brought this action for an infringement of patent. The defence set up was that the defendant and other persons had used the process before the date of the patent, and that defence was supported by witnesses. On this state of facts the judge, Mr. Erle, had held that the plaintiff could not recover; but the Attorney-general submitted that the plaintiff was entitled to maintain his action, because there was no doubt of the novelty of the invention so far as he was concerned. The court granted a rule to shew cause.

IMPROVEMENT OF EDINBURGH.—A plan of improvements, by Mr. Robert F. Gourlay, has been published under the title of "Lines of Communication in and about Edinburgh." The scheme involves various extensive changes, such as the conversion of Cowgate into an open terraced street, leading from Grassmarket towards Holyrood Palace, and named Prince Albert-street; a great crescent sweeping round from St. Leonards, also towards the palace, in face of Salisbury Crags, and named Victoria-crescent; various new lines of road and approaches opening by the meadows or Hope-park; a new opening, leading from South Bridge-street, on the one hand, and the south approach to George Fourth's-bridge on the other, by a tunnel entering by a way beneath Prince Albert-street and running northwards to a "grand terrace," partly facing Princes-street-gardens, and ending at North-bridge. Alterations at the Mound, and the erection of markets, baths, and various other public buildings elsewhere, are also contemplated, together with other improvements; but the plans would be requisite to render the whole intelligible, as the general aspect of the old town appears to be much changed by the proposed numerous improvements.

METROPOLITAN DRAINAGE PLANS.—Now that the metropolis is to be drained, it is to be hoped, in reality; we think it advisable to recur to the subject of acknowledgment, by some medal or gift, publicly notified, to be given to the competitors, whoever they may be, whose designs, in general features, approach nearest to the one now to be carried out. Such a distinguishing mark, however trifling, would aid professional men in their business, now that drainage and sewerage are objects so paramount in public estimation; and whether or not, it is the least return that could be made them in the circumstances, and is not even yet too late.

ARSENAL HOUSE.—Considerable alterations are being made here by Messrs. W. Cubitt and Co. under the direction of Mr. Hardwick, including a museum for china, &c. and some habitable rooms. The staircase, too, is being altered, with the view of getting more light.

THE STOCK-EXCHANGE has been rebuilt by the same firm, under Mr. Allason, at a cost of from 13,000*l.* to 14,000*l.* The works are approaching completion.

TRAM-WAYS.—Passing along Piccadilly the other day, it occurred to me that if the following alteration in street-paving were adopted, it would materially assist the traffic, give great relief to the horses, and decrease the noise. Wood-pavement is slippery; Macadamised, heavy; stone, noisy. why not try a system of combination? Behind the Liverpool Exchange, a slightly-inclined street has on the up side a stone tramway. This is simply blocks of limestone, of about 2 feet 6 inches in length, 6 inches wide, and 6 inches deep, laid longitudinally, in which the wheels of heavy trucks run, and thus the friction is greatly diminished. On the down side the Macadamised road acts as a lock on the wheels, thus destroying, in a great measure, the impetus given by the incline, and preventing the noise of the stone pavement. Now why could not this arrangement be applied to all London, especially the inclines? Take Piccadilly-hill, for example. The up-omnibuses, cabs, and light carts at present follow each other very regularly, and go at the same speed; therefore, one line of stone rails would do for that traffic; another line, 4 or 5 feet distant, would run parallel for the heavy market and mud carts. The space between the rails could be Macadamised, to allow a better hold for the horses' feet.

A TIME SAVER.

RAILWAY MATTERS.—Another subterranean metropolitan line has been projected, and a company started, having for its object the construction of a subterranean line from Leicester-square to the Bricklayers' Arms Station of the South-Eastern. It is proposed that the line pass under the Thames between Hungerford and Waterloo bridges, proceeding thence by way of the New-cut, St. George's-circus, and the London-road, to the Old Kent-road.——The extensive station built on the site of the old terminus of the Blackwall line, in Fenchurch-street, for the accommodation of the North London and Blackwall trains, has been opened. The Eastern Counties and Gravesend (Tilbury) traffic will not be brought up until the works now in progress in widening the line between Fenchurch-street and the Haydon-square junction are completed.——The directors of the London and North-Western have resolved that 20*l.* be annually expended, in money prizes, for the advancement of learning amongst the young men in the works at Crewe, and have issued notices that the candidates will be examined by her Majesty's inspector of schools for the district. Every young man in the works, under eighteen, is eligible. The highest prize will be 6*l.*; the second, 4*l.*; the third, 3*l.*; and the remainder of the 20*l.* will be divided amongst those who shall prove themselves to have been diligent and studious in the course marked out. The course of study will include arithmetic, algebra, mensuration of superficies and solids, grammar, history, geography, and religion. ——An effort was made last week to lift the ironwork of the Carmarthen Railway bridge into its destined position, but the tackling gave way.——Experiments have been tried on the East Lancashire line with Newall's railway break, with two trains at equal speed (forty miles an hour): one was brought to a stand by a single person with the new apparatus in 138 yards, while the other, with the old break, ran 800 yards before it was stopped by the exertion of two persons, the guard and driver. The new break, it is said, can throw the whole weight of compression by the brakes on every carriage and every wheel of the train at once.

WHAT BUILDERS HAVE NO RIGHT TO DO.—Strange as it may appear to an Englishman possessing a few acres of land, or proposing to lease a similar patch for ninety-nine years, he has no right in the general principles of morality to erect houses thereon which shall be traps to entrap the unwary, and fill his pocket at the expense of the health and lives of others. He is called upon to leave a marsh uninhabited, to drain efficiently any ground he does build upon, to build on such a scale as to space, and with such materials, as may be necessary to secure the health of the future inhabitants. He must not lay the flattering unction to his soul, as an excuse for imposing bad unhealthy dwellings on his fellow-creatures, that he must live, for there is not the least necessity for his living, if he cannot live as an honest man; and should it really appear that the latter contingency is impossible, then he may be assured that the sooner he ceases to live the better. The fact, unfortunately, is that many men calling themselves house-builders, are at this moment pursuing their calling in such a way, that, were they to become house-breakers instead, it would result in a positive gain to the public; seeing that, in following out what they think legitimate trade, they are laying the foundations of an enginery which will do infinitely more harm than any ever done by Jack Sheppard.—*Chambers's Journal.*

FAC-SIMILES OF WATER-COLOUR DRAWINGS.—"THE NEST."—We have here a very clever chromo-lithograph after Hunt's well-known drawing of a "Bird's Nest," executed on stone by Mr. J. Coventry, and printed in colours by Messrs. M. and N. Hanhart.* The effect is produced by a succession of colour stones, nearly twenty, and the result obtained well shows the means which lithography possesses for reproducing works done with the brush. In such a work the lithographer has a complicated task to perform, requiring much skill and consideration, as all the colour stones have to be drawn in a black (lithographic) ink, which it is then the printer's task to print in the exact shade required. There is still something to be done to obtain complete purity of colour.

CURIOUS EPITAPH.—The following curious inscription is taken from a monument in Barrow Church, Leicestershire; the name of the person being Cave. It is dated 1584:—

"Here in this grave there lyes a Cave.
We call a cave a grave.
If Cave be grave and grave be Cave,
Then, reader, judge, I crave,
Whether doth Cave here lye in grave,
Or grave here lye in Cave.
If grave in Cave here buried lye,
Then, grave, where is thy victory?
Goe, reader, and report,
Here lyes a Cave
Who conquers Death,
And buries his own grave."

S. H.

* Published by Shaw and Sons, of Nottingham.

THE CATACOMBS AT ROME.—A lecture was given on this subject, with relation to the arts under the Early Christians, on the 7th inst. at the Weybridge Mechanics' Institute, by Mr. E. Hall, F.S.A. The address (which was well illustrated by diagrams) showed the relation of the catacombs to the history of the Christian Church, and described the paintings, sculptures, and epitaphs, and included some remarks on the permanent value of such remains, and on the necessity of *earnestness* as regards the success of the pursuit of modern art.

CARNARVON SCHOOL OF PRACTICAL ART.—A meeting of the committee of the Carnarvon School of Practical Art, was held in the Guildhall, Carnarvon, on Tuesday in last week, when an honorary secretary to the Institution (Mr. Kirkby) was appointed. Mr. Kirkby produced a letter from Mr. McLeod, of Marlborough House, enclosing a report of Capt. Owen, R.E. on the Carnarvon School, dated 7th September, and also of his reply, from which it appeared that the school now numbers fourteen ladies and eight gentlemen at 10s. per quarter, and nineteen mechanics at 6s. per quarter, and that several schools are already attended, and arrangements made for others.

SPINNING THREADS OF INDIA-RUBBER.—The proprietor of a factory at Grenelle discovered that threads of this material, if heated while on the stretch, did not shrink back to their former dimensions; and that, by repeated stretchings and reheatings, any degree of fineness could be produced. In this way he obtains 50,000 metres from one kilogramme of India-rubber, and manufactures 700,000 metres a day, finding a ready demand for the article in Germany and England. The superiority of threads produced by this means over those cut, is, that they are perfectly round.

RENTS IN AUSTRALIA.—What most annoys a new comer, says a correspondent of the *Portsmouth Times*, is the rate of rent: 2,500*l.* for a business premises; 1 200*l.* for a middling shop; 5*l.* per week for an office, which is a sub-division of a small room, about the size of one of those curtained recesses where a London merchant retires to wash his hands; 3*l.* per week for a niche in some suburban slum, which is termed a sleeping apartment. Yet at those unheard-of prices, if you do not answer the advertisement with the utmost promptitude, you find another party in absolute occupation. I must not omit noticing the fabulous price of land, not only in the city, but in the remote country. What do you think of 250*l.* per foot, with only a depth of 55 feet. Then, again, as to the property in the outlets—such as Phearon, Richmond, and St. Kilda—which I may liken to Clapham, Richmond, and Windsor—I know that I am quite safe in asserting that the prices obtainable in the former would outrun by 50 per cent. the fair market price of land in those beautiful and fashionable localities. Since I came here there was a paddock of eight acres at St. Kilda, four miles from town, brought into the market, which had been purchased a few months before by Mr. Dalgetty, at what was called the insane price of 4,000*l.* Six weeks after the purchase he refused 12,000*l.* for the lot, and within six months from the original sale, and before the second instalment of the purchase-money fell due, it was resold in Messrs. Tennant and Co.'s rooms for the prodigious sum of 22,000*l.* Neither is this a solitary case—I could quote scores—nay, hundreds, of others, which, if they would not exactly compare with, would tread close on the heels of the justly-celebrated Dalgetty paddock.

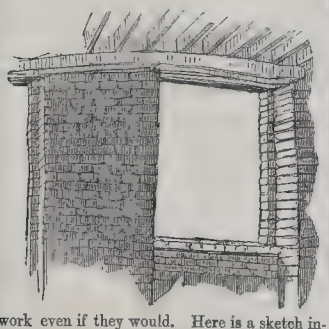
THE VENTILATION OF SEWERS.—Fire is the great agent that should be employed for the ventilation of sewers. Properly applied it must necessarily cause the entire destruction of all unhealthy and offensive exhalations therefrom. For the ventilation of a given extent of sewerage there should be constructed a shaft in the most convenient situation, with which a furnace should be connected, and so contrived that the whole supply of air necessary for the combustion of the fuel employed in it would be drawn entirely from the sewers to be ventilated. By this arrangement it would follow, when the furnace was burning, that the draught in all the sewers and drains in connexion with it would be in that direction, and consequently the escape of gaseous matters at gratings, gullyholes, &c. effectually prevented. On this principle it would but little signify whether sewers were in a clean or foul state, as the constant demands of the furnace would keep all the currents of air invariably moving towards it when every impurity (no matter how great) would necessarily be destroyed. That an additional impulse may be given to the draught, a wind or blowing-fan should be placed near the furnace. It may perhaps be supposed that the maintenance of constant fires (they must be perpetual) would present a formidable impediment to the adoption of such a plan, but a moment's reflection will suffice to show that the fuel employed could be as conveniently used in the production of steam for engine-power as under ordinary circumstances.—K.

The Builder.

SATURDAY, NOVEMBER 26, 1853.

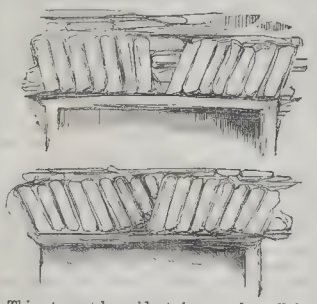
A FEW days ago the greater part of a house in the Fulham-road, near Walham-green, then in the course of erection, fell to the ground. One of the men at work upon it was injured, but fortunately no lives were lost. It is a corner house, intended for a shop; and both the front wall and flank wall rested on brestsummers, which were carried at the angle by an iron column,—a very ordinary and most objectionable arrangement. Without making any positive assertion as to the cause, the brickwork on which the iron column stood probably yielded under the weight, and of course all above came down. The wonder is, considering the manner in which houses round the metropolis are built, that disasters are not more frequent than they are. Such accidents, nevertheless, happen too often as it is; but unless life be lost nothing is heard of them beyond their neighbourhood. Again and again we have raised our voice against the reckless, dishonest course pursued by many speculative builders, and we feel it to be our duty, at this season of the year, when the chances of failure are greatly increased, to repeat the warning. In the case to which we have referred above, the work was not the worst of its class: it was better than much that is going on under our own eyes in various quarters, and fell for want of proper precaution —through want of knowledge or of thought. In scores, nay hundreds of houses now being carried up, the bricks, mortar, and workmanship are all infamously bad. If there be much wet weather, some of them must come down. In one place the mortar saves the bricks; in another, the bricks render the badness of the mortar of less consequence; and in a third, the minimum safety point is attained only by the exercise of rather more care than usual. Mould is made to supply the place of sand in the mortar; bad "place" bricks are used throughout, excepting where exposed externally; and even the introduction there of better bricks is made to produce evil, for the facing is not properly bonded into the other work, and thus we have the walls in two thicknesses. Every expedient is used to save material: out of the "solid" part of a chimney breast, into which we had occasion to cut the other day, six barrow-loads of dry rubbish *ran out* like sand.

The corruption-coverer, compo, and the system generally, have ruined the bricklayers, and many of them cannot produce good brick-



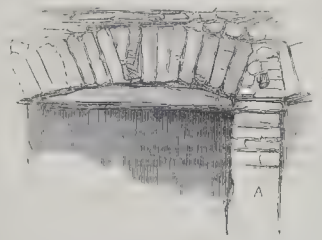
work even if they would. Here is a sketch inside the ground-floor of one of a range of houses now building near the Lower-road, Islington. It will serve, without the slightest exaggeration, for any one of the row. There is not a straight line in it: either the party-walls have sunk on both sides, or the plates and lintels were not put in level: the openings are not square, the reveals are crooked, the whole is a disgrace.

The same pile will afford an example of the mode in which the window and door openings, where the walls are to be composed, are "arched" over in numberless instances.



This, it must be evident, is no arch at all, but depends upon the mortar. The bricks are placed, sloping slightly, side by side, and then the triangular space left in the centre is filled with a couple of bats and some mortar, under the vague notion that they form a keystone. When set in cement, these are a little better, but only a little. The error has been pointed out again and again, but fruitlessly: the use of such "arches" is more general than ever. "Gauged arches" are not much better. Wedge-shaped bricks can be obtained at little additional cost, and make sound work.

In another instance, where the arch is segmental and carries brickwork above, it has thrust the pier, A, over for want of sufficient abutment.



And where is the District Surveyor all this time, even if there is not a surveyor acting for the ground landlord? the public will ask. The district surveyors have very little power in this respect; or, at all events, have been brought to think so. It is true that Schedule D, in Part I. says that walls must be built upon a constructed footing, based upon solid ground or upon other sufficient foundation, and in Parts II. and III. that walls must be built of sound bricks or of stone laid in and with mortar or cement, in such manner *as to produce solid work*, and under these rules the surveyors could go to the referees in many cases when they do not, and obtain an award to bring about an amendment. The uncertainty which attends proceedings of this sort before the referees, the legal quibbles which arise, the weaknesses of the Act, the difficulty which has been found in carrying out some of the awards, are amongst the reasons which prevent the application. Over the timbering of houses they have no control whatever.

The district surveyors, we must be permitted to say, scarcely act together in the way they should. Uniformity in practice is much needed. In two or three of the districts a laxity has been permitted, which was as unjust to their brother surveyors who were seeking to do their duty, as it was to builders in other districts and to the public generally. What has been permitted in one district is quoted in the next, and made an excuse for other departures. Every metropolitan builder knows perfectly well that he is bound to give notice to the surveyor two days before commencing any work to which the Act refers, and is liable to a penalty for not doing so; that party-walls must be 18 inches above the roof, and chimney-stacks 3 feet; that fire-places must have chimney bars; that the *top* of the footings must be 9 inches below the lowest floor; that, with a few exceptions, wood may not be placed in party-walls, and that the exceptions must not be laid within 4 inches of the centre of the wall; that the Act does not permit wooden projections from external walls, excepting shop-fronts, and so on. And yet these and other most obvious and unquestionable requirements are constantly and perseveringly disregarded by some builders. The more respectable builders on speculation have as strong an objection as any to these proceedings, and to the scamping work to which we have alluded, and urge that they themselves are forced in self-defence to build less well than they would desire, or they would be driven out of the market.

The pressure on our columns forbids us to pursue the subject further at this moment, beyond the repetition of our earnest caution to those who would avoid accidents and keep a fair name.

AN INQUIRY INTO THE HISTORY AND CONDITION OF THE BUILDING TRADES.

MASONS.

THE diligent inquirer into the historical relations of building will assign a high place in his inquiry to the business of the mason. It would be difficult indeed to mention any other business so closely connected with the progress of our race, to which science and art are so much indebted, to which religion itself owes so many of its nobler influences. The mason has joined together in one unbroken chain the two extremes of civilization. His genius is alike conspicuous on the rudely-sculptured pillar of the cromlech, on the exquisitely-proportioned columns of the Parthenon. He built the altars from which arose the smoke of human sacrifice, and he reared the temples in which no sacrifice is offered but that of a contrite heart. Centuries before the dawn of civilization in the empires of the West, he constructed those monuments of rude but magnificent grandeur which moulder now on the banks of the Ganges and the Nile. It was he who reared the stately temples to Minerva and Jupiter, which are so inseparably associated with all that is noble in Grecian philosophy, all that is beautiful in Grecian art. And in the dark ages which followed the downfall of western civilization, when the temples of Rome were ruined, the palaces of the Cæsars plundered, the Pantheon despoiled, the amphitheatres laid waste, it was he who reared up the noble piles of Christian architecture which ushered in a new era in the history of the world, and another and a more beneficent period of human existence.

We hope it will not be uninteresting to our readers if, in our brief account of the history of mason-work, we endeavour to trace this great cycle of human progress. We will leave behind us for a moment the interminable forest of bricks, the elaborate compo ornaments, the narrow streets, the crowded thoroughfares of modern London, and glance at the mason-work of some of the great nations of antiquity, which have long since passed away.

But to trace correctly the history of mason-work, we must go beyond even the earliest nations whose records have come down to us. We must glance for a moment at its origin and gradual development in the dark and obscure periods of our pre-historic annals; the periods when the aborigines of this world burrowed in the earth like beasts of the field; and when the gigantic elk and the great urus wandered in undisturbed security amid the luxuriant herbage of its primeval forests. The researches of the archæologist have brought to light numerous evidences of the barbarous condition of mankind in these early stages of existence. Their

primitive dwellings consisted of mere excavations in the ground—sometimes on the slope of a hill, sometimes on the banks of a river. Such excavations were usually of a circular or oblong form, never more than 8 feet in diameter and 5 feet in depth; and the roofs, it is conjectured, were composed of boughs of trees and sods of turf, through which a single opening was made to serve all the purposes of door and window, and probably of chimney also. Another class of primitive dwellings, traces of which have been rescued from oblivion gives us the first indication of attempts at systematic building. These dwellings, likewise, consisted of mere excavations, but they were lined and partitioned with stones, and were occasionally accompanied with enclosures, such as a pastoral people would use as folds to their flocks and herds. The stones in this case had no pretensions to symmetry of form; for the rude implements of the Celt consisted of stone hammers and hatchets of flint, together with the weapons made from bone, which he applied to the purposes of agriculture and the chace. Such weapons are common to the aboriginal tribes of every nation. The stone javelin of the New Zealander, the flint spear-head of the Red Indian, the fishbone lance of the modern Esquimaux, are scarcely to be distinguished from the relics of the Celtic barrow; and in every case they are the instruments of a rude and barbarous people, still ignorant of the uses and application of metals.

The discovery of metals, indeed, was the most gigantic step in the march of civilization the world has ever made. The social changes effected by the greatest of modern discoveries—by the mariner's compass, by the steam-engine—are as nothing compared with the changes effected by the discovery of the metals. For the first time was then heard a sound which has rung without ceasing ever since, and which will continue to ring so long as civilization lasts—the sound of the mason's chisel. The hitherto intractable boulders of granite were fashioned into square blocks; and temples were erected to that Deity who had vouchsafed so great a blessing to his creatures. The vast Druidical temple of Stonehenge we will venture to select as a remarkable example of this new era in masonry. A group of pillars in ruins, surmounted with gigantic lintels, is, indeed, all that remains to us of that singular building; but these are sufficient to indicate that it has been constructed of hewn stones, and that the lintels have been attached by means of mortices and tendons laboriously chisseled from the solid. Various conjectures have been offered respecting the origin of this colossal structure; and although such conjectures are too speculative to prove in the slightest degree useful in this inquiry, we may state that its hewn stones prove that it is not a work of the stone period; that it is probably not even a work of the bronze period; but that its foundation must with greater truth be referred to the era when the smelting of iron ore had given to the northern races a command of that metal so eminently useful to mankind, which the archæologist has used to characterize a period, and which, it is probable, the future historian will use to characterize an age.

Such are the few indications we have to offer of mason-work as it existed before the dawn of history. Its mechanical progress presents but few points of attraction to the popular mind; but it has, nevertheless, a deep and lasting claim to our attention. Its memorials tell us that mankind were then as they are still, gregarious and social in their habits,—that their subterranean dwellings were still the dwellings of a people who formed themselves into communities. Their primitive implements tell us, too, that it was then customary, as it is still, to cultivate the soil, to chase wild beasts, to wage war, to adorn the person with different ornaments; and the tumulus and the cromlech show symptoms of that sentiment which leads men to rear temples to the Deity, and to leave memorials of the resting-place of the loved and honoured dead. Nor will he who regards aright the "mute inglorious" records of these mystical periods contemptuously spurn their influence on future progress. They tell us of a state of society, a condition of humanity which the world saw once, but which it will never see again. The gigantic animals, the contemporary occupants of the primeval forests, have in the cosmical changes of our planet, become extinct, and their fossil bones are now to be found in the museum of the palæontologist. But the immortal spirit of man, which was then created, still survives, and still continues to pursue its destined track. We must never forget that the same spirit which reared the monolithic pillar of the cromlech, reared also the portico of the Parthenon, the campanile of San Giotta, the cloisters of Westminster Abbey; and that the spirit which led to the formation of intramural dwellings on the mainland of Orkney, led also to the formation of the cities on the plains of Attica, on the shores of the Tiber, and on the banks of the Thames.*

When we leave the regions of archæology to enter upon those of remote antiquity, we come to the consideration of building among the ancient Egyptians. No other people can boast of buildings so colossal, of architecture so sublime. Without Egypt Greece could never have risen to her proud empire over arts and letters. Without Egypt the land of Judah must have remained the seat of a pastoral and nomadic people. They conceived men and sculptured gods 100 feet in height, and reared temples larger than some of our modern cities. They appear to have progressed by successive steps from the plain monolithic pillar as evinced in their obelisks, to the massive cylindrical column with its peculiar bell-mouthed capital, enriched with the lotus and palm leaf. The most ancient as well as the most noble remains of this latter style exist in the Temple of Karnak, at Thebes,—the largest and most splendid ruin of which either ancient or modern history can boast. Language can convey no proper conception of the melancholy grandeur of this temple, which no traveller can behold without emotions of solemnity and awe. How the Egyptian temples gradually acquired the sloping lines of the pyramid is beyond our province to inquire. It is certain the pyramids themselves must have exercised a powerful influence on the minds of this imaginative people; and, indeed, it has been held repeatedly that such an influence was the sole cause of the singular change of style between the structures of the Pharaohs and those of the Ptolemies. We are inclined to take that view, however, which regards the pyramids as rather the effect than the cause of the idiosyncracy; for the pyramids, says Herodotus, were regarded as emblematical of human life, the broad base being significant of its beginning, and the narrow apex being significant of its end.

The pyramids are generally built of enormous blocks of limestone, from the regions which lie to the southward of Thebes, in the valley of the Nile; and it is said that some of them were originally encased with slabs of chrystallized granite, derived from the porphyritic rocks over which that river pours its cataracts. Indeed, the most ancient buildings in Egypt were constructed of limestone blocks, worked upon a regular system, and laid in parallel courses; and from the tombs near the pyramids, from the pyramids themselves, and from the vestiges of some ancient substructures at Thebes, we have evidence that limestone was almost universally employed for building purposes. But so soon as the superior durability and hardness of sandstone had been ascertained, extensive quarries were opened, and this material brought into general use. It would seem, from the remains of limestone-blocks found in the inside of walls built of sandstone, that the last material was regarded as the most valuable for the purposes of exterior walls.

The methods of building in use among the Egyptians must always constitute an interesting study to the artisan and engineer of our day. In the first place, their means of transport were singularly remarkable. The picture, with which all of our readers must be familiar, of transporting a colossal statue from the quarries to its intended site, throws full light on this difficult operation:—"One hundred and seventy-two men, in four rows of forty each, pull the ropes attached to the front of a sledge, on which the colossus is let down. A liquid, probably grease, is poured from a vase by a person standing on the pedestal of the statue, in order to facilitate its progress as it slides over the ground. On the knee of the statue stands a figure, who claps his hands to the measured cadence of a song, in order to mark the time and insure the simultaneous draught,—a practice still common among the sailors of modern Europe when pulling a rope." Such was their means of transport by land. But their means of transport by water was, if possible, still more singular. Pliny describes a method of transporting blocks from the quarries down the river, by lashing two flat-bottomed boats together, which were then admitted to the quarry by means of a trench dug from the banks of the Nile. The boats were laden with a quantity of ballast, equal to the weight of the obelisk, and then sunk. The colossal mass was now fairly balanced over the boats, after which the ballast was removed, and finally they floated their new burden, and bore it to its destination. A modern builder, accustomed to the Regent's-canal and the trucks of the Great Western Railway, will look not without a smile on these primitive methods of conveyance. And it is unquestionable that the rate of speed bore a direct ratio to the facility of transport. Herodotus mentions a single block of stone, which 2,000 men were engaged nearly three years in transporting from the quarry to the temple, and, after all, it was not admitted into the building, in consequence of a man having been crushed to death while employed in turning it with levers. Yet when we think that some of these gigantic obelisks, transported from above the first cataracts of the Nile to Thebes, a distance of 138 miles, measured from 70 to 90 feet in length, and weighed nearly 300 tons, and that such masses were not unfrequently borne a distance of 1,800 miles, our contempt will change into admiration.

Respecting the implements of the Egyptian mason, our information, though scanty, is yet sufficiently accurate in its details. Their chisels closely corresponded in size and form to the pointed chisel and smoothing iron of the mason of our day. Their mallet was likewise nearly of the same shape, perhaps a little more globular in the head. The lever was known to them; and they were well acquainted with the use of the wedge; for their usual method of cutting large blocks from the quarries was either by wedges of metal, struck at the same moment along the whole length of the line, or by inserting wedges of dry wood into crevices cut for their reception, which, on being saturated with water, split the stone by their expansion. This last method, it is curious to observe, is common to almost every nation, and is still the method adopted in the granite quarries of Aberdeen and Peterhead for separating large masses from the rock. They had no conception of the use of the pulley. Their method of raising stones from one tier of building to another, was by means of a sort of wooden crane, something, we conceive, like that employed by the labourer in our day to riddle lime or sand. The plumb-line, the square, and the chalk-line, were commonly employed. Finally, we have evidence from the pictures we have mentioned, that the saw was among their instruments. We should have inferred this to be the case from the great regularity of their blocks, and the soft character of the limestone rocks; but it is made certain in the picture we have mentioned, from the representation of three figures in the foreground, carrying on their shoulders a saw of enormous dimensions. We may add, that the Phœnician artificers, who built the Temple of Solomon, and who derived all their knowledge from an intercourse with Egypt, appear to have used the saw in working their stones, a circumstance we do not recollect of having seen observed by Biblical critics and commentators, but which affords strong presumptive evidence that that sacred edifice was built of a soft description of limestone.*

The people who reared such monuments could not always have been slaves: 100,000 men armed with iron crowbars, and weapons still more formidable, could not always have been the victims of tyranny. Nor is it easy to see how any species of despotism could have influenced the spirit of mechanical genius so conspicuous on every stone. The Israelites it is true were consigned to bondage and trodden under foot, but the Israelites were a nation of shepherds and of

* "Pre-historic Annals," by Daniell Wilson, LL.D. Sir Richard Colt Hoare on the "Archæology of Wiltshire." "Chambers' Information," art. *Archæology*

* Wilkinson's Works, *passim*. See for an account of the Building of Solomon's Temple, 1 Kings, chap. v. *et seq.*

foreigners, and bore the same relation to the highly-civilized Egyptians as a drover from the wilds of Badenoch bears to the skilled artisan of Birmingham. The truth is, this belief is founded on a gross misapprehension of the policy of the ancient Egyptians. The artisans constituted an honourable and highly-respected caste: the priesthood were as much indebted to their labours as the priesthood of the Church of Rome were to the secret society of freemasons. They were more respected even than the agricultural population, and are not for a moment to be associated with the slaves, who were made hewers of wood and drawers of water, and who were chiefly composed,—as, alas! they still are in our day,—of that unfortunate negro race, who seem shut out from all mercy and all freedom. It has accordingly been thought proper to attribute their erection to political motives. The country, it is argued, was possessed of an unusually fertile soil, and an uncommonly warm and sultry climate. It possessed a most superabundant population—a population whose domestic dwellings were hovels; who swarmed in enormous numbers, like amphibious animals, on boats on the Nile, and amid the bulrushes on its banks; who were scarcely obliged to till the soil for their sustenance; and who were content chiefly with vegetable food, and with water for their beverage. Such a population would be dangerous to any government; and therefore it would be the interest of the government to give them employment. Therefore these wonderful monuments were erected at the dictates of a truer policy than direct oppression,—the policy which prevents an idle people from becoming criminal, and sinks the tendency to treat with contempt their rulers in a feeling of deep veneration for the gods. We confess that even this theory does not satisfy us. Is it not more probable that the pyramids of Egypt must be referred to the same principle which led to the building of the pyramids of Mexico or of Hindostan? Diodorus Siculus expressly says that in Egypt every class had in view the shortness of man's earthly existence; that they attached no importance to earthly comforts, paid no respect to earthly splendour; that, while regarding the habitations of man as places of a transitory abode, they were indifferent to their squalor and wretchedness, but were on the other hand anxious to give the utmost strength and durability and splendour to the receptacles of the dead, and to the temples of the immortal gods. Nor do we see any tangible grounds for rejecting the evidence on this point of that credulous historian. For the monuments and tombs of the Pharaohs bear internal evidence that none but a religious people could have conceived them; none but a highly religious people could have executed them. We must never forget that civilization took early root in this singular country; that centuries before the Tyrian mariners swept the seas in their gilded barges, centuries before the rocks of Athens was the seat of a single tenement, centuries before Romulus drew with a copper ploughshare the boundaries of the imperial city, Egypt had reached the zenith of her extraordinary acquirements in government and religion, in science and art. These considerations will enable us to look at least with a clearer view on the origin of the pyramids.*

We hope our readers will pardon this digression. We should never tire of investigating into the condition of a people who, like the Egyptians, have exercised an important influence on civilization. It may happen that we shall have occasion to refer to these arguments when speaking of the condition of the people in our own country in our own day, and which, it may come to pass, will yet prove as interesting a subject to some future inquirer. We have only to add, that some attempts have been made to introduce the Egyptian style of architecture into this country. But we need scarcely say these attempts have failed. We would only caution our readers against forming their impressions of its character from the Egyptian-hall in Piccadilly or the Blue Boar in Smithfield. Such erections are as much out of place as the doctrine of metempsychosis or the transmigration of souls would be in the Cathedral of St. Paul's.

We come now to examine what may be called the classical age of mason-work, as evinced in the splendid structures of Greece and Rome. We will glance briefly at their principles of mural building, at their domestic buildings, and at the masonry of their magnificent temples.

The ancient buildings of Greece and Rome we may class with great propriety in three successive orders. First, we have those ancient structures denominated *Cyclopean*, from the mythus of Homer, who attributes their foundation to the sons of Neptune. These structures consist of vast and irregular masses of unhewn stones, put together without cement or mortar of any kind. The ruins of the citadels of Tyrus and Mycenæ, which are of this description, have remained in their present condition for 3,000 years, and present the most perfect specimens yet existing of the military architecture of the heroic ages. The next improvement on this method has been termed the *Irregular Polygonal* structure, from the circumstance that the stones are no longer unhewn, although no attempt is made to reduce them to the square. These lateral plane sides are sufficiently smooth to form a close joint, and the angular proportions of the one stone fitted the angular recesses of the other; and their faces are cut so as to give the whole wall a tolerably smooth surface. Examples of this second class are common in the Etruscan tombs, where, says Mr. Dennis, these blocks are arranged so as to present their ends and sides in alternate corners, in that style which builders denominate Old English Bond, or more vulgarly, "headers and stretchers."* The same description of masonry was used extensively by the Romans, and seems to have reached its perfection in the forum of Augustus. In the third species of mural building the blocks are laid in horizontal courses, but sometimes so irregular that none of the horizontal joints are continuous, but all the joints are accurately squared and fitted. Example of this kind of masonry is to be found in the celebrated Lion Gate of the ancient fortress of Mycenæ.

It is alike beyond our purpose to enter upon the endless controversies and conflicting opinions which have been held respecting these different classes of masonry: these have been treated of in other parts of our journal. Recent travellers and classical critics have laid down the general principle, that while undoubtedly such are among the most ancient specimens of mason work, it is quite a fallacy to suppose that the unhewn, the irregular polygonal, the emplecton or interwoven, the irregular and regular rectangular styles of construction, indicate successive steps in the progress of art and science—a theory held by all the Italian writers after Vitruvius. For although such massive structures would be built by a people ignorant of stone-cutting, or destitute of the necessary tools, they might be and were also erected in later times, simply on account of their adaptation to the purposes to which they were applied. Besides, as Mr. Dennis has pointed out, the character of the structure differs with the character of the materials. In the northern section of Etruria, where the rocks are difficult to be worked, consisting of hard limestone, sandstone, or porphyry, the walls are composed of huge irregular blocks, with small stones stuffed between the interstices. In the southern districts, on the other hand, where the rocks are composed of volcanic tufa, interstratified with limestone of a horizontal cleavage, which are easily worked, the masonry is more regular and less massive in its construction. Indeed, we need not go far to seek for proof of the accuracy of this reasoning. What would be thought of some future inquirer into the progressive civilization of Great Britain, selecting, as his instances of its mason work, the fences of county Wicklow, the drystane dikes of Aberdeenshire, the remains of London-wall in Aldgate, and the ashler foundations of Castle Baynard? Yet such is precisely the criticism which we find received by all writers on Greek and Roman antiquities, until the days of Niebhur and Becker, and the modern school.

* This question is discussed by Hope, "Hist. Essay on Architecture," vol. I. p. 14.

* "Cities and Cemeteries of Etruria." Mr. Dennis calls this masonry *emplecton* (from a Greek noun signifying to interweave), which Italian writers have hitherto applied to a different class of building altogether. See an able note in the Appendix, vol. I. p. 68.

ARCHITECTURAL CHARACTER.*

ARCHITECTURE has always been the exponent, and in a great degree the measure, of civilization; and if we study the history of our art over and over again, we shall see that architecture has always been the *child* of civilization, and never, as we sometimes hear, a *means* of civilization. Thus in our own country, in the thirteenth century, architecture was the property of the civilized few, and had no effect on the mass; whereas, at the same epoch in Italy, it was the spontaneous offspring of a highly civilized many. It is not a little curious to observe how, at the present day, both nations have changed characters. Such being the relations of architecture with civilization, it becomes not a little important to trace the difference between ancient and modern civilization, in order to adapt our architecture to the latter. This difference has been admirably defined by M. Guizot in his "Histoire de la Civilisation de l'Europe." The passage is worth translating. "When we regard," says he, "the civilizations which preceded that of modern Europe, whether in Asia or elsewhere, including even the civilization of Greece and Rome, it is impossible not to be struck with the unity which reigned there. They seem emanations of one fact, of one idea. We should say society belonged to some unique principle, which swayed it and determined its institutions, its customs, its creeds; in a word, all its developments." * * *

"In the civilization of modern Europe, it is altogether different. Observe it;—bring together your recollections of it,—it will appear to you immediately varied, confused, tempestuous. All the forms, all the principles of social organisation are there co-existent."

He then carries on the comparison in art and literature:—"No one will deny that as far as form and beauty of art are concerned, they (that is modern civilizations) are very inferior to the ancient; but as regards depth of sentiment and of ideality, they are more rich and forcible. We see that the human mind has been moved on a greater number of points to a greater depth. The imperfection of the form arises from this very cause. The more rich and numerous the materials, the more difficult is it to bring them back to a simple and pure form. That which makes the beauty of a composition of what in works of art we call form, is the clearness, the simplicity, the symbolic unity of the work. With the prodigious diversity of ideas and sentiments in European civilization, it has been more difficult to attain that simplicity or that clearness."

It would be a subject well worthy the pen of the art historian to illustrate this masterly passage by reference to works of architecture. Most interesting would it be to trace that wonderful unity visible in all the works of Assyria, Egypt, Etruria, or Greece, and then to follow the new elements distinguishable in the Roman, Byzantine, Gothic, or Renaissance styles, by which our art doubtless lost much in simplicity, perhaps in grandeur, and certainly in intelligibility, but gained as much in depth of thought and variety of expression.

Before I proceed I am anxious to define exactly what I mean by architectural character, because it is a term which we hear every day abused. Thus, we hear of buildings having a Gothic character or a Greek character, and this applied to buildings with really no character at all. Just imagine for a moment the ghost of Ictinus wandering uneasily up Bow-street, and being told that Covent-garden Theatre possessed Greek characteristics. Character in architecture is the expression of some great principle of composition; it may be the purpose for which the building is destined, the making evident the materials of which it is built, or the forcible exposition of some quality, such as height, breadth, strength, airiness, massiveness, lightness, or such like; but all these have nothing to do with its style. Style is never applied to a manner of building until all its character has passed away. As long as we attempt to build in character it matters naught what style we use, but once let us begin to think about style, and we shall find it hopeless to attain character. A good illustration

* From a paper read at a meeting of the Architectural Association.

of what I mean may be seen in the Imperial Assurance Office. This is by no means an inelegant building, either in form, proportion, or detail, and it is certainly not an exact copy of any old one, but it expresses nothing: no one, unless he were told, would have any idea that this was an English Fire Office. The architect has never dreamt of showing forth any important quality, but has only bent his mind to give to the world a handsome example of the Italian Palazzo style. Contrast this with one of Mr. Cockerell's banks, and you will see there evidence of an accomplished well-stored mind, with a new, fresh, and definite aim and view. It would be difficult, indeed, to fix a style to these buildings, exquisitely beautiful as they are. They have no antiquarian pedantry, or vulgar classical purity, but their object is evident to all: they seem to say to the passer by, "If you want your cheque cashed come in here." I am not railing now against the reproduction of buildings themselves: there is no need in this hall now to cry down copyism: we are all agreed on that point; but I am anxious to go a step farther, and deny the necessity, and even the desirability of imitating old *manners* of building, or (to use the cant phrase) of building in the *spirit* of the men of old A direct plagiarism in verse is never tolerated for a moment, and I am happy to say, it is getting rather unpopular in architecture, but there are many examples of versification in *style*. There have been few great poets that have not been surrounded with a small fry of imitators. How often do we see stanzas after the manner of Spenser, or imitations of Juvenal or Horace? What a motley crowd once lisped in numbers, as they thought, like Pope; and what a crowd of scribblers now exist who put on a maudlin affectation of Tennyson.

There is a large open square in Grand Cairo, one of the most characteristic points of the city. Here are assembled crowds from all parts of Asia. Through here pass caravans from all parts of Egypt. Every inch of this vast piazza teems with character, and that character is silence—silence only broken by the tinkle of the bells of the camels that pass through, and the hot, blue sky overhead is as calm and tranquil as the rest. On one side of this square rise the white walls, dome, and minarets of an immense mosque. Of a most lovely form are these minarets, not pointed and extinguisher-shaped, like those of Turkey, but surmounted with graceful domes borne aloft on elegant arches. At intervals, on those minarets surrounded by exquisite open-work, and corbelled on fairy-like honeycomb works are small galleries. It is the month of Ramadan, and strings of lamps hang from minaret to minaret to be lighted in the evening. The ignorant stranger would be sorely puzzled by these galleries: at first sight they seem only capricious ornaments put there for no purpose. It is the hour of mid-day prayer: a turbaned muezzin appears in one of these galleries, and passing round from angle to angle, mingles his voice with others from the neighbouring mosques, then, and then only, breaking the silence in his own sonorous language -"Allah, illah Allah" ("There is no God but God, and Mahomet is his prophet"). This is character.

There is a little dirty square in London—a central point of foreigners. Here may be heard almost every conceivable language except Arabic. Every inch of this little hole teems with character, and that character is noise; and the black, stormy sky overhead is as tempestuous as the rest. On one side of this square rise the walls, dome, and minarets of a stuccoed edifice, painted four tones in oil. These minarets are abridged editions of those in Cairo. I say abridged, because the first pages are torn out. They are not built from the ground, but hang aloft on iron girders. They have galleries something like the others, but parapets of iron-work It is the month of November, and in consequence of the fog, lights are burning in the daytime. The enlightened stranger is sorely puzzled at these galleries, for here they are only capricious ornaments. It is twelve o'clock, and an individual in a black coat is in one of these galleries looking anxiously at the sky. It is a poor photographer waiting for the sun to come out, but even his voice is unheard in the din around him. Would any one believe that this edifice was meant for a Panopticon of Science and Art in the capital of England? This is style.

I make no scruple in criticising this building with freedom, because we all know that its style is no fault of its very clever architect, but was chosen by the committee who employed him. Their object was to produce an edifice which should be pre-eminent among the buildings of London for its novelty, and in their view novelty was only to be produced by dragging out of the past some old style with which the present was not yet acquainted. No man admires the exquisite Arabian style more than I do. no one wishes more that our architects would study it more diligently than they do; but for what purpose under the sun do we want minarets in Leicester-square? You might as well transport the Chinese god Fo at once into a square at Manchester to enlighten us as to the manufacture of silk or the cultivation of the tea-plant.

It is in vain to defend the style of the Panopticon, as being no more inappropriate than the Greek style, which prevailed many centuries before. Nearly every one is agreed now-a-days on the unsuitableness of pure Greek for modern use. All styles of remote antiquity are unsuitable, for the simple reasons, shown so clearly by M. Guizot, that the character of ancient civilization is unity of thought and of modern variety. When we take an extreme case, such as the front of the Egyptian Hall, or of Marshall's factory at Leeds, the absurdity becomes apparent in a moment. Egyptian, Greek, and Arabian are expressive only of this symbolic unity, and can, therefore, only be looked upon as three mighty integers in the varied world of thought, which ought to characterise our own architecture at the present day.

The next lesson that I have learnt from the French passage which I have taken almost for the text of my paper is this, that to express this wonderful variety, characteristic of modern civilization, no one style is sufficient. Architects are always crying out for the necessity of one style, though they cannot agree as to what that style shall be. They argue somewhat in this manner,—that all the good ancient styles were the works of men who built in one style only. So they were: this is only part of that unity to which I have alluded, but which exists no longer. Some styles were purely religious, like the Egyptian and Greek; and as there were no nonconformists in those days, the architecture resolved itself in the adornment of one beautiful thought. The architects of the Middle Ages built in one style: the Cinque Centisti of Italy built in one style; but those were days when differences of thinking were only settled by the sword and shield, and public opinion became a legislative enactment. It seems not unnatural that, in those days, the arts of peace should have flowed on in one only channel, without attempting to stray beyond its banks The aim of these men was to render this one river as beautiful as possible, and they succeeded. The most recent examples which I can quote of the practice of building in one style only, are the edifices of the time of George II where, as Mr. Disraeli informs us, "Parliament prescribed even the façade." Such are Baker-street and Gower-street. Blessings on them! The very fact of architects not being agreed as to the adoption of a style is of itself a strong proof that no one style can be adopted; and, really, if we think for a moment, we shall soon see that one style alone would be as inexpressive of the present time as a variety of styles would have been of past ages. We live in a time and in a country when and where the greatest freedom of thought is tolerated, nay, encouraged; when many of our thinkers arrive at the same end by different roads, or arrive at different ends by the same road; and the limits to each train of thought, though widely diversified, are equally valuable. We neither think in one style, nor act in one style, nor write in one style, for the simple reason that one style would not suit our purpose. When Leverrier discovered his new planet, from observations on the perturbations of the orbit of Uranus, he thought in one style: when Professor Wheatstone invented the electric telegraph, he thought in another. The one thought was the deduction of existing facts from existing natural phenomena: the other was the application of existing natural phenomena to a practical use. Had these gentlemen thought in the same style, neither would have attained their end. We all remember the old tale of the Cambridge wrangler, who always thought in the same style on all subjects, and who one day attempting to find his way across an alpine pass, by means of mathematical calculation, fell down a precipice. This is exactly what your one-style men want us to do now. Architecture, in its highest sense, is the expression of every-day thought,—is thought made tangible by imagination, and then handed down to posterity as an illustration of history. And this present motley world of good and evil, with evil in every form, and good in as many, with extremes of both, and extremes of everything else, extremes of ideas, extremes of habits, extremes of wants, is it not worth shadowing forth in brick and stone, as in canvas, prose, or song? How can it be done in one style only?

There is another school now existing, who while great sticklers for style as such, yet advocate at the same time a mixture of styles. They would not scruple to use Perpendicular tracery with Early English mouldings, or to crown a Greek pediment with Gothic turrets, provided always that the beauty of the composition be not injured. At first sight their reasoning seems plausible. It seems perfectly consistent to combine together the beauties of the past to make the present more perfect. Why, then, is the effect generally so unsatisfactory? Because, where we have been long accustomed to see certain forms in certain combinations, the mind begets a taste for these combinations. An anachronism in a historical romance is almost as offensive as one in real history. It seems impossible that any composition made up of old styles can ever give pleasure. It is like a poem written in several languages, and every one a dead one.

Let us now try and trace, if we can, the origin and history of this now generally received practice of building in past styles. The Pagan artists did not build in past styles: the early Christian artists did not build in past styles: the Gothic artists did not build in past styles; and for that very reason left to posterity styles of their own. These men not only did not build in past styles, but rather seemed sometimes to *despise* past styles. they looked upon them rather as we look upon old wives' tales of the good old times gone by, and always tried to produce something very different. Just compare English architecture of the twelfth century with that of the thirteenth,—the one low, broad, and bulky, even to clumsiness; the other tall, narrow, and light, sometimes even to flimsiness. I can well imagine a sturdy architect of the thirteenth century railing at the architecture of his massive predecessors in good set terms. It is evident to every student that these men only looked upon Norman architecture as something to avoid.

The first men who seem to have adopted the idea of building in style, were the Italian Cinquecentisti. As far as we know, Brunelleschi was the first foreign architect who travelled to Rome for the purpose of study. The architecture of all Europe was then Gothic: the manners and customs of all Europe were Gothic, although Italy was perhaps more enlightened than the rest of it. A singular distaste for Gothic forms was growing up in the minds of the rising artists of Florence, which became more violent every day. Vasari, who wrote only a little more than half a century later, winds up a paragraph on Gothic architecture in this strain:—

"Heaven defend any country from coming to such an idea and style of work, which is, when compared to the beauty of our modern buildings, only so much deformity deserving no further mention."

Having this horror of Gothic, it was not unnatural that Brunelleschi, Alberti, and their contemporaries took violent means to change it; and here we may learn a salutary lesson, that a total change in architecture can never be effected suddenly, through the agency of man's unassisted reason and imagination. Instead of gradually developing their old architecture into something else, these men sought back in the

ecesses of antiquity, and gradually substituted evival for imagination, style for character.

This was an age characterised by an exaggerated taste for classical literature: true art became infected with pedantry: Vitruvius was enthroned: architecture had rules set to it; and great professors wrote books about intercolumniations, modules, minutes, and orders, just as we write now-a-days about Early English, Decorated and Perpendicular. From that time to this, architecture has gradually degenerated into a science. We have revived, and re-revived, but how little real, genuine character have we produced.

Now, I am fully aware that for an architect to throw overboard styles altogether would, in these days, be something little short of madness. The disease has sunk so deep into the system, that it cannot be cut out with a knife. Architects have talked so much about styles, have criticised so much on the style principle, that the public have begun to think that there is something in it. Our clients, like the Panopticon Committee, generally choose a style for us, and we must obey. Happily, however, our employers are not always learned; and many things will do for both Gothic or Italian, which need not bear any similarity to either.

Let us endeavour, as much as we can, to cease talking about style when we criticise modern buildings: let us call them tall or short, light or massive, handsome or ugly, but not classic or Gothic; and let style be used as a mere historical term. Above all, let us cease clamouring for a new style: we want not one new style, but one hundred; and that is what distinguishes our present age from all others so forcibly. What I have always loved most in my own art, is its power of illustration; and in this respect I feel quite certain that character has never been pushed to its utmost limit. Not only would I endeavour always to make a building express the purpose for which it is intended, but I would go still farther. It may seem an ambitious fancy, but had I a house to build for a great and good man, I would try and make it tell something of him who dwells inside. How much I have regretted that the houses of Wellington or Peel should not have one stone in them worthy of the illustrious dead! I say not that their beauty would add one iota to the fame of these great men, but how a real grand characteristic work of art would be gilded by the memories attached to it. "Ornanda est enim dignitas domo, non ex domo tota quærenda; nec domo dominus, sed domino domus honestanda est." And this is the only kind of association about which architects need trouble themselves.

We are in the habit of hearing a good deal about the associations of past styles; but with what are they associated? With everything that is the very antipodes of the present. Let us suppose that I had a house at Camberwell to build for a noble-minded British merchant. Somebody has been talking to him about the Italian Palazzo style, and the noble associations of Italian history. I would just request my client to turn to the pages of Machiavelli, or Sismondi, or the autobiography of Benevenuto Cellini, or a satire of Salvator Rosa, to show him that his vaunted associations were those of oppression, murder, lust, rapine, envy, hatred, malice, and all uncharitableness. The art we want is not the art which tries to put a mask of splendour on a pompous luxury derived from popular oppression. And what are the associations connected with Gothic? Far more respectable, I admit. The monks were neither barbarians nor homicides, but all their doings were of a passive order; whereas if there is anything that is peculiarly characteristic of the present age, it is its activity.

Let us always bear this in mind, that the architecture of the present day is emphatically the architecture of the people. Vast palaces for princely residents are now but seldom required: they have given place to houses for the million. The days of cathedral building have passed away, perhaps never to return; but never probably was there an age when more parish churches were raised. Time was, when great men or rich monks provided the architectural banquet for the many,—made them swallow it whether they would or no—and often made them pay for it into the bargain. Such is not the case now. The appetite of the many has been sharpened by civilization: they are hungry now, let it be our part to give them fresh-killed meat.

The wants of past ages were the wants of pagan sacrifice, of pampered luxury, or of large monastic establishments. From these roots sprang various styles. How can the plant flourish when the root lacks moisture? Think of the wants—the new wants, the intellectual wants, the moral wants, which have sprung up in this our day; the school, where the lowest mind may learn to think; the lodging-house, where the lowest mind may learn to live; the church, where the lowest mind may learn to die; the railway, where the poorest travel; the factory, where the poorest work; the hospital, where the poorest are cured; the picture-gallery, the museum, the park, the theatre, the Crystal Palace, where all may obtain the luxury of amusement. These buildings are England's pride, are bright phases in England's character, are parts of that character which we have to illustrate. How shall we do it? Shall we do it in style? Until we can resuscitate the immoralities of Jupiter, the tyranny of Lorenzo, the worship of St. Francis, or the ambition of Wolsey, farewell to the styles, the spirit, the associations of the past.

> "Heed no future, howe'er pleasant:
> Let the dead past bury its dead.
> Act, act in the living present,
> Heart within and God o'erhead."

And though perhaps there is nothing wrong in the architecture of the present showing in itself some traces of the architecture of the past, for the simple reason that the past is in itself always part of the present, yet let us remember strongly that no satisfactory whole can ever be made by the mere exaggeration of one part only. Let us regard ancient styles only as insignificant parts of modern character—that character to which style is only a stumbling-block,—that character which is as varied as style is limited,—that character which does not coop itself in a tattered robe of antique learning; but which shows itself most in energetic action, surmounting real difficulties by vigorous will, and not solving imaginary problems by reference to old books.

Alfred Bailey.

MR. RUSKIN'S SECOND LECTURE ON ARCHITECTURE.

The lecturer commenced, according to the *Edinburgh Courant*, by cautioning his audience against the meaning generally but erroneously attached to the terms romantic and utopian—two of the devil's pet words whenever anything great or good is to be ridiculed or opposed. By romantic we ought not to understand something fictitious, but rather something fresh, young, virtuous, or beautiful. So understood, our romantic feelings ought to be fostered and encouraged. Cervantes, Mr. Ruskin said, by the ridicule which he threw over some of the noblest feelings of our nature, had done more to repress and discourage the good and the true than Voltaire or Byron. We are also apt to misapply the term utopian: as generally understood, we had better express our meaning by the term unpractical. If a thing is physically impossible, we should let it alone; if it is possible and proper to be done, we ought to strive to the utmost to do it. We may not be able to put a complete stop to drunkenness and misery in the streets; but the difficulty is not our business—the work is. We may not be able so to arrange that every child in our country shall, from its earliest years, be educated in the knowledge of the Bible and of God; but here also we must look to the work and not to the difficulty.

As to the practice of modern and that of Gothic architects, in regard to their decoration of buildings, the Gothic builders always ornamented the bottom of their edifices (?), whilst our modern architects decorate the top. The former placed their most highly-wrought sculpture where it could be seen and appreciated, whilst the latter put theirs under the cornices of buildings, where its effect is partially or totally lost. As an example of this, which he called a modern abuse, he named the new Army and Navy Club-house, in London. An amusing but truthful illustration of the prevailing style of ornament in our modern street architecture, consisting merely of squared stones, was exhibited by Mr. Ruskin.

The truth to nature of the Gothic builders in their flower and leaf tracery, was pointed out and illustrated by a drawing from the front of Rouen Cathedral. There was great variety in the Gothic sculpture: in this it has a material advantage over the Greek. The Greek sculptors were unrivalled in all that regarded the human frame, but in animal delineation they were not equally successful. Mr. Ruskin had been examining the Institution on the Mound—a very good specimen of Greek architecture—and he had counted sixty-six lions' heads along the top of it: these were of the true Grecian type—a perfect caricature of nature—as Mr. Ruskin illustrated by a magnified drawing of one of them. This was contrasted by a drawing of a tiger's head after nature by Mr. Millais.

Several examples of Gothic windows, with the part above the horizontal lintel filled in with stone, both plain and sculptured, and suitable for adoption in our street architecture, were exhibited and commented upon. One very graceful form of a Gothic window might be easily adopted by us, as changing our present windows into such a form would only cost about 30s. for each window.

In buying anything we should always consider whether we were doing real good to the producer,—whether our buying it was likely to induce him to lead a healthy and a happy life, or the reverse. Thus, when we bought an engraving, we bought what had been produced by the long and toilsome labour of the engraver, sitting in a close room amid noxious fumes, and impressing upon steel or copper, by a variety of minute lines, the production of another's mind; whereas, when we bought the rudest water-colour drawing, we were encouraging its producer to go out into the fields, and draw from nature, and thus to lead a healthy and happy life. In buying, therefore, we should sometimes overcome our own preferences, and look rather to the effect, good or bad, which our purchase may produce upon others. We must not encourage our workmen in the sculpture of Grecian lions' heads after a set pattern, but we must give them something better to do,—we must send them to nature, to study at the fountain-head.

Mr. Ruskin lamented that the beautiful edifice of Trinity College Church, one of the finest ecclesiastical buildings Edinburgh possessed, and of which the stones are lying numbered and ready for the workmen, was not likely to be rebuilt. The builders of the fifteenth century built a great deal better than anything we can construct as a substitute for their work. It is sincerely to be hoped that the town-council will act upon Mr. Ruskin's advice, and for once sink their utilitarian and sectarian prejudices.

The lecturer concluded by saying that he had been often, and in many quarters, accused of presumption in daring to place his opinion in opposition to the practice of the last 300 years. This charge might have been true had he ventured to rely upon anything merely his own, but he did not do so; he relied upon, and he appealed to, common sense, reason, and nature. He appealed for the truth of the principles which he had been advocating to the common sense and the reason of his audience. They must not, however, go from him to a great architect and ask his opinion, or accept his guidance. It would be too much to expect such a man to perceive, or to confess, the falsity of the principles in which he had been educated. It might be said that it was impossible that he (Mr. R.) should be right in controverting the principles and the practice of the last 300 years; but let them remember that, in a far more important matter, and for a much longer time—for 1,200 years—there had been error and falsehood in the separation of the two roads which led to heaven and to hell.

St. Martin's-in-the-Fields Library, &c. for the Working Classes.—The fifth of a series of lectures proposed to be given for the season, 1853-4, was delivered on 22nd instant, by the Rev. John Barlow, M.A. and was listened to by all present with great interest; the subject, "The Chemical and Physical Properties of the Atmosphere," being illustrated by some pleasing experiments, which were prepared by Professor Faraday.



ST. MARTIN'S MUSIC HALL: VESTIBULE.

ST. MARTIN'S HALL, LONG ACRE.

Mr. Hullah's Music Hall, in its complete form, will be opened with a musical performance on Thursday next, December 1st, and we avail ourselves of the occasion to give views of the Great Room and Entrance-hall and some particulars of the structure. It has been erected from the designs of Mr. William Westmacott: Messrs. W. Cubitt and Co. were the builders. The foundation-stone was laid June 21, 1847, by Lord Morpeth. A portion of the building was first used October 10th, 1849, and a part of the Great Room was opened February 11th, 1850.

The plot of ground on which St. Martin's Hall stands is a parallelogram of 149 feet in length and 61 feet in width, the north side abutting on Wilson-street, Hanover-street, and the east side on Charles-street, Long-acre; this plot being connected with Long-acre at the south-west angle by another 44 feet in length and 24 feet in width. The principal entrance is from Long-acre, another from Wilson-street, and there is a third from Charles-street. The ground-floor consists of an entrance-hall (44 feet by 22 feet) leading to the principal staircases, a lecture-room or lower hall (51 feet by 41 feet), a library (32 feet by 29 feet), available also as a committee or class room, two class-rooms (one 31 feet by 19 feet, the other 26 feet by 19 feet), the secretary's office, a ticket-office, and a corridor extending the whole length of the building.

A mezzanine floor affords a ladies' room (24 feet by 22 feet) accessible by a separate staircase.

The first floor is chiefly occupied by the Great Hall, which is 121 feet 6 inches long, 55 feet 5 inches wide, and 40 feet high; the length being rather more than double the width, and the height a third of the length. At the east end is the orchestra or platform, to be reconstructed after some experiments have been made in the matter of *sound*; at the west end, a gallery, 14 feet deep; and on part of the north and south sides, other galleries, each 7 feet deep. The ceiling or inner roof is flat in the centre, sloped at the sides, and divided into panels framed in wood. The shields on the stone corbels are emblazoned. The hall is warmed by four of Mr. Leslie's patent stoves in circular openings within the fire-places shown in the view. Our engraving represents the hall as seen from the east (or orchestra) end. The openings seen above the gallery light a passage to upper rooms. Below is a bas-relief by Mr. Thrupp.

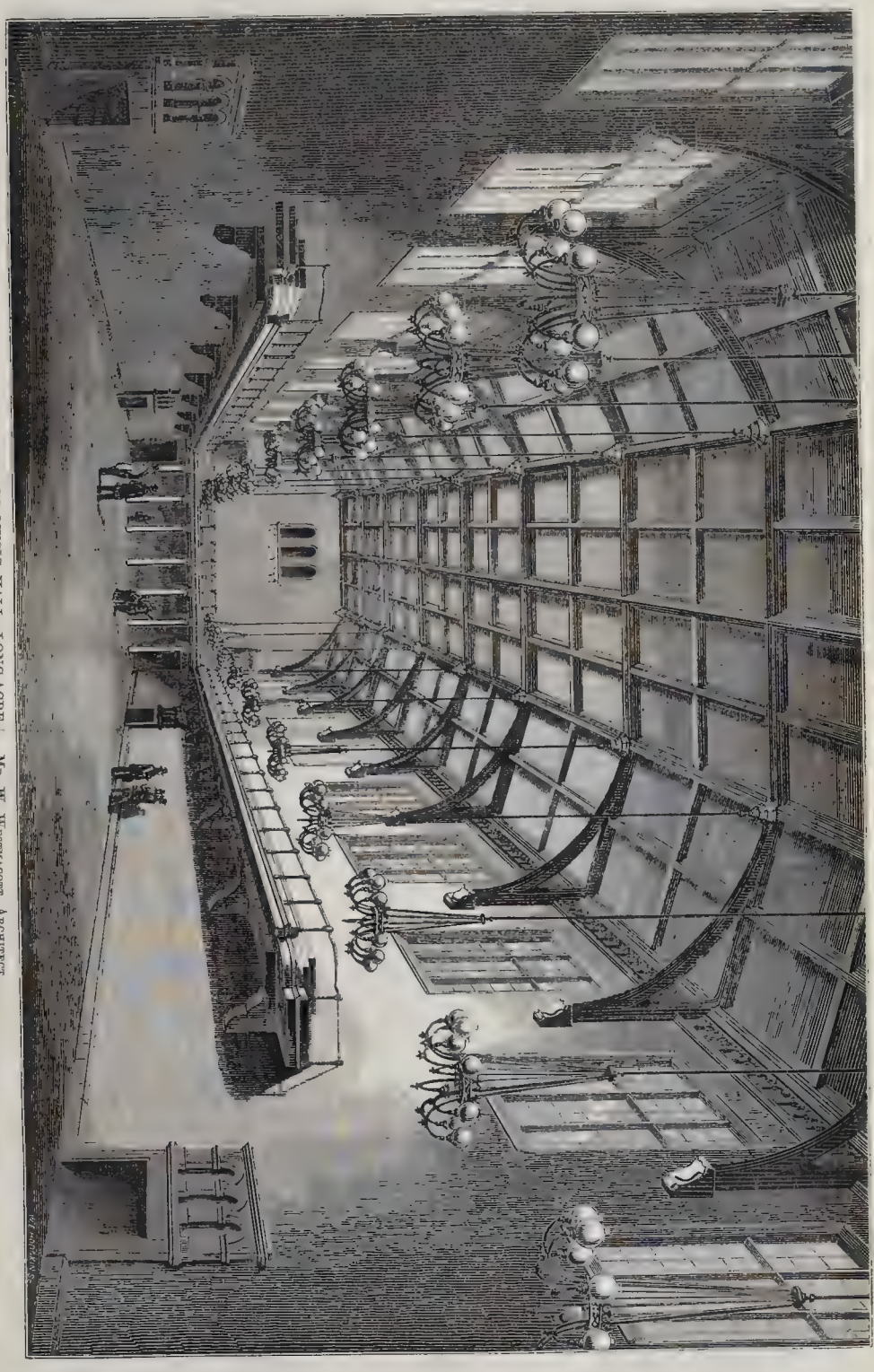
The principal staircase leading to the Great Hall is very commodious and satisfactory in effect.

The Singing Classes, for whose especial use St. Martin's Hall has been erected, originated in a proposition made in the autumn of 1840, to the Committee of Council on Education, by Mr. John Hullah, that means of improvement in vocal music should be afforded, at a cheap rate, to the schoolmasters and Sunday-school teachers of London. Although their lordships (having then no funds at their disposal for the *support* of schools) were prevented from giving any pecuniary aid to the undertaking, they were pleased to regard it "with satisfaction and approval," and their secretary (now Sir James Kay Shuttleworth) was instructed to afford Mr. Hullah "such encouragement" as was "consistent with their regulations."

Within a few months of the opening of the "Singing-school for schoolmasters" in February, 1841, it was found necessary to provide for the instruction of 400 persons—all engaged in tuition in elementary schools—and eventually the demands for admission to the school, from persons not so occupied, became numerous enough to warrant its being thrown open to the public. At the same time, classes were opened for instruction (chiefly of teachers) in other subjects—Mulhauser's method of writing, the phonic method of reading, mental arithmetic, and more particularly model drawing, under the direction of the late Mr. Butler Williams. These experiments—expressions, one and all, of a desire to improve the condition of elementary schools and the status of their teachers—were attended with very unequal success; and some of the "methods" essayed may, perhaps, now be regarded only as materials for a history of "pedagogy." The prosperity, however, of the singing-school was such as to enable it to supply the large pecuniary loss entailed by these classes connected with it, under the designation of the "School of Method," which, after its removal from Exeter-Hall to the Apolonicon Rooms, in St. Martin's-lane, became again exclusively a school of vocal music, having survived a very expensive companionship, an unusual amount of misrepresentation, and an excess of popularity more dangerous than either.

It would be without the province of this journal to enter on any discussion as to the merits or demerits of Mr. Hullah's method of teaching singing. We are told that rarely during the existence of his schools (now in their *teens*, having been opened early in 1841), has the number of pupils in attendance on them been less than 1,000; but this we have no means of verifying. One thing, however, is certain, that he has been the first person to erect a great room expressly for musical purposes in London; and it appears, further, that he has been enabled to do this chiefly by the assistance of personal friends and pupils,—in a word, by the confidence of those who, being most intimately acquainted with his modes of proceeding, would seem to be the best able to judge of them.

We attach great importance to a widely-spread cultivation of musical science, and are disposed to consider that society owes much in this respect to Mr. John Hullah.



ST. MARTIN'S MUSIC HALL, LONG-ACRE.—Mr. W. Westmacott, Architect.

SCULPTURE AT HOME.

WE have often lamented how rarely sculpture is found in the houses of even the wealthy, and have urged that although to the middle classes the cost of such works would naturally interfere with their attainment, yet that galleries of *casts* of the works of our sculptors might be formed without great outlay, and that even in small residences nooks for two or three figures, and wall space for a bas-relief or two, may always be found. It was with great pleasure we stumbled on a practical realization of the idea a short time ago at Firfield, in Addlestone, the residence of Mr. and Mrs. S. C. Hall. There, in a glazed gallery about 80 feet long attached to the house, amidst flowers and climbing-plants, and hanging ornamental pots from France and Germany, Mr. Hall has gathered together a large number of casts of the best works of modern times. Here side by side are Foley's "Ino and Bacchus," Power's "Greek Slave," Bailey's "Eve," Schwantaler's "Nymph of the Lurley," Westmacott's "Pandora," Rauch's "Victory," McDowell's "Early Sorrow," Marshall's "Dancing Girl Reposing," Engelhard's "Lurley," and many others, while specimens of Gibson and Bell are on their road, and Reitschel, Thorwaldson, and Wyatt shine in low relief on the walls.

The house itself is full of "auld knicknackit things," and works of modern art: in the garden are trees planted by Moore, and Lady Morgan, and Mrs. Jameson, and Jenny Lind (the St. Cecilia of to-day), and Miss Edgeworth, and Fredrika Bremer, and Catherine Hayes, and Macready, and Lover, while everywhere are seen evidences of good taste and kindly feeling. We must not be led, however, into saying what might be disagreeable to its owners: our object simply is to point attention to what we should like to see widely imitated. Were it so, the sculptor's art in England would receive an impetus of immense value. There is no reason the high enjoyment sculpture affords should be confined to the rich: but the public must first learn to see beauty in severe form before the example will be largely followed.

PROVINCIAL NEWS.

Watton.—A new town hall has just been completed at Watton, in Norfolk, and was opened on 3rd inst. The building, which is after a plan designed by Mr. E. B. Lamb, of London, architect, is in the style which prevailed during the latter part of the reign of Henry VII. and is of red and white brick, with Caen stone window dressings. The ground floor includes a reading-room, measuring 20 feet by 14 feet; a waiting-room, store-room, and other offices. From the ground floor is an ascent by a stone staircase into the magistrates' room, and into one intended for a corn-hall, concert and assembly room, for public meetings, &c. The magistrates' room measures 20 feet by 17 feet. The hall is 53 feet long by 26 broad, and 32 feet high. This useful structure owes its existence, we are informed, to the efforts of a small "mutual improvement society," and has been constructed at a cost of 900*l.*,—600*l.* raised by subscriptions, and the rest by shares.

Mildenhall.—The church here has been restored, and was reopened on Thursday in last week. By the reopening of the west entrance, removal of the organ-gallery, arrangement of the pulpit and desk on either side of the chancel arch, and erection of new roof to chancel, the eye entering at the west door, or tower-porch, will now at once embrace the whole of the interior. The arch of the east window, the centre of which is occupied by the symbolic oval or elliptical aureole, has been replaced with new masonry where needed. The floor of the church has been relaid upon sleeper-walls, and its old pews replaced by open seats. There are now 905 sittings, 477 free. The large west window is entirely new; and the lower story of the tower has been converted into a porch, with glazed screen opening into the nave. The works were principally executed by Mr. James Rattee and Messrs. Peck and Sons, of Cambridge. The total cost of the alterations has been 1,020*l.* 9s. 5d. Among the ancient architectural details discovered and preserved, is an assemblage of arches at the west corner of the north aisle, being the doorways and windows of the Lady Chapel, which was in an unusual position over the north porch.

Wootton.—On Friday in last week a new church was opened in this village. The edifice has been built from the ground, on the site of the old church, at the expense of the Hon. Mrs. Howard, the patron and proprietor of the parish, who will, when the steeple has been completed, have expended nearly 6,000*l.* upon the building. The architect is Mr. Salvin, whose plans and designs were carried out under the personal superintendence of the vicar, the Rev. W. W. Clarke.

Uxbridge.—It is said to be intended to take up all the old drain-pipes in this town, and lay down larger ones in their stead. The sewage is to be kept clean by a continual flow of water, to be supplied by means of waterworks. Villas and cottages, according to the *Windsor Express*, "are being built almost like magic in every available spot, and they are no sooner completed than occupied."

Eversley.—Parochial schools have been erected here through the instrumentality of the Rev. C. Kingsley, the vicar. Mr. J. B. Clacey, of Reading, was the architect employed. The style of the building is Elizabethan, and it comprises school and class rooms for about 130 children, with residence for master and mistress attached. Over the entrance to the class-room the architect has inserted a scroll, with the inscription,—"The eyes of the Lord are in every place, beholding the evil and the good." The site was given by Sir W. Cope, lord of the manor; and the funds were raised by subscription.

West Bromwich.—At the last weekly meeting of the board of guardians, seven estimates were received for surveying the town and furnishing plans, with valuation of the rateable property, and assessment thereon. The guardians determined upon accepting the joint tender of Messrs. Fowler and Son, and Mr. James Cookson, for 800*l.*

Chesterfield.—To carry out the project of a new market hall here it is proposed to raise the necessary sum, 10,000*l.* in 1,000 shares of 10*l.* each; no one to take more than ten.

Leeds.—The church of St. John the Baptist, New Wortley, was consecrated on Thursday in last week. This is the second of the two district churches initiated by the Rev. Dr. Hook, vicar of Leeds, about two years since, by a subscription of 2,000*l.* St. Jude's, Pottery-fields, consecrated a few weeks since, is the other. St. John's consists of nave, 68 ft. 6 in. long by 22 ft. 3 in. wide, and 44 ft. high to apex of roof; aisles, 68 ft. 6 in. by 12 ft. 8 in.; chancel, 36 ft. 3 in. by 20 ft.; south transept, from chancel, 22 ft. by 22 ft.; north and south porches, each 9 ft. 5 in. by 8 ft. 2 in.; vestry, 13 ft. by 10 ft. and tower, 12 ft. square inside. There are 700 sittings, all free. The building is warmed by Hazard's patent apparatus. The style of its architecture is the Geometrical, from the designs and under the superintendence of Mr. Dobson, of Leeds. The nave is divided into five bays by octagonal stone piers, moulded caps, bases, and arches, and is covered with an open timber roof formed with curved braces resting on stone corbels. The tower and spire rise to the height of 130 feet. The aisles contain in each bay a three-light window. The west window is of four lights, the transept four lights, and the east window of five lights. The roofs, seats, choir stalls, altar rail, communion table, and sedilia, are all of deal, stained and varnished; the pulpit and lectern of carved oak. The floor of chancel, from altar rail to east end, is laid with Minton's encaustic tiles. The contractors were—masons and carvers, Messrs. Mawer and Whitely, of Leeds; joiner, Mr. John Chaffers; slater, Mr. John Preston; plumber, Mr. John Garlick; plasterer, Mr. W. H. Barker; painter, Mr. Swithenbank; and ironfounders, Messrs. Singleton and Tennant. The cost of the building was 2,500*l.*; total, including land and repair fund, 3,458*l.*

Berwick.—A memorial to the Duke of Northumberland has been in course of signature here, praying his Grace to construct a harbour of refuge on the Magdalen-fields' shore for the accommodation of the Greens' fishermen. The harbour would also afford sufficient accommodation for larger vessels. The cost of the proposed scheme is estimated at about 4,000*l.*

Glasgow.—The extensive ship-building sheds at the establishment of Messrs. Todand M'Gregor, at the mouth of the Kelvin, are nearly completed. The sides of the conjoined aisles, if they may be so called, are formed of piles of Canadian pine, 80 feet in height, supporting a framework of iron, timber, and glass, surmounted by a wooden cornice. Similar piles to the lateral rows run along the central division of the parallel sheds. The roofs, of corrugated galvanised iron, are arched, 65 feet in span, and lighted by longitudinal sections, glazed with Hartley's patent rolled plate glass, which is said to be of sufficient thickness to resist the pelting of the severest hailstorm. One of the sheds is 320 feet in length, while the other measures 266 feet. The object of the erection of such sheds is, of course, to enable the ship-builders to carry on their operations at all seasons without interruption from the weather.

THE CATHEDRAL OF SPEYER.

THE restoration of this fine mediæval building has been going on for several years, but now the whole scaffolding of the interior has been removed, and the eye ranges free in the wide, wondrously-splendid decorated spaces. Now, only one can judge of the result produced by eight years' steady and persevering work, under the guidance of skill and science. It is especially the twenty-four paintings on the walls of the middle nave, which attract the notice of large crowds of people gathered thither from far and near. It is a cycle of representations from the life of the Holy Virgin, which, preceded by six Biblical paintings in the nave of the cathedral, is concluded by the crowning of the Virgin in the Vault of the Apsis. The works of the high altar in the Byzantine style are not yet ready, having required more labour than had been anticipated. The restoration of the façade of the Cathedral in its ancient form, with two turrets at the west side, has been also sanctioned by the present king; and the choice of the architect has been left to King Ludwig, of Bavaria. He has selected M. Hubsch, building director at Karlsruhe, an artist said to be known as one of the most successful in the round-arched style. Besides its architectural grandeur, the dome of Speyer is renowned for containing the monuments of eight German Emperors, amongst them Rudolph of Hapsburg, the founder of the present dynasty.

PETITION TO THE PRIVY COUNCIL AGAINST THE USE OF STAGE-COACHES.

THE following minutes of proceedings, "At the Court at Whitehall, the 20th of November, 1672; present, the King's Most Excellent Ma[ty]" &c. extracted from the "Council Register" (ch. ii. vol. x. p. 337), and for which we are indebted to Mr. Robert Lemon, are very instructive and curious, showing as they do how ignorance and personal interest have ever fought against improvement and progress:—

"The humble petition of ye masters and wardens and governors of ye severall companys of sadlers, cutlers, girdlers, cordwayners, curriers, loryners, inholders, farriers, spurriers, and watermen of the Citty of London, presented with the approbation and by the consent of the Lord Mayor and Court of Aldermen of the said Citty, on behalf of themselves and ye rest of ye members of the aforesaid severall companys, and divers other tradesmen and hackney coachmen, in the Cittys of London and Westminster, the burrough of Southwarke and countys of Midd[x] and Surrey, and other places within this Kingdome, being this day read at the boord, and there being at the same time likewise presented severall petitions from the cittys of Norwich, New Sarum, Bristoll, and Glocester, and from ye townes of Northampton, Daventry, Marleborough, St. Alban's, Maidenhead, Staynes, and Theale, All setting forth, that by reason of the many running stage-coaches and carravans of late yeares set up, for carrying passengers to almost all places within this kingdome, not only pet[r] trades are lost, and above 100,000 familys reduced to beggery already, and many thousands more like suddenly to fall upon ye severall parishes wherein they dwell, for main-

tenance, but many other great mischeifes to this Kingdome are occasioned, for by them ye roads are spoyled, the rents of all inns lessened, inholders made unable to pay their rents and dutys, or to provide fit accomodation for their guest, or to releive the poor, as formerly they were wont to do, the consumption of all sorts of provisions for man and beast are prevented, the rents of gentlemen's estates brought downe, the breed of good horses destroyed, the keeping of great numbers of horses, both in ye Citty by merchants and others, and in the country and all great townes of England, is left off, which hinders ye consumption of vast quantitys of horsemeat; the breeding of many thousands of watermen hath been hindred, and those that are bred are greatly hurt and discouraged by them; his Ma^{es} subjects, unused to riding, are growne carelesse of attayning to good horsemanship, a thing so necessary for them to understand, in order to their owne and ye kingdomes service; the consumption of woollen, leather, and other manufactories of ye kingdome, are greatly lessened, whereby the handicraft tradesmen aforesaid, who formerly lived well, helped to consume provisions, and releive others, are for want of worke ready to starve. They ruine the hackney coachmen in London, who are licensed and pay five pounds pr. ann: for their license, and do greatly annoy and breake the streetes, without paying anything towards reparation. The revenue of Excise and Post-office is much abated, the kingdome is weakened, and the subjects are made unfit for his Ma^{es} service, and, therefore, praying the said coaches may be suppressed, or such order speedily taken therein as shal be thought most conducing to the good of his Ma^{tes} subjects.

It was ordered by his Ma^{ty} in Councill, that the matter of these petitions be taken into consideration at this boord on Wensday, the 4th of December next; whereof the pet^{rs} are to cause timely notice to be given to as many of ye cheif owners of ye hackney stage-coaches and carravans that travell ye northerne, westerne, and other great roades of this kingdome, as they conveniently can; and that ye said keepers of coaches and carravans, as also some person or persons appointed by the pet^{rs}, do give their attendance at ye time and place aforesaid; and it was further ordered that both partys have liberty to bring with them councill learned if they please."

SEWAGE AND DRAINAGE, AND A PLAN OF SEWERAGE.

I HAVE just read the letter, under the above heading, in your number for October 15, from "Henry G. Cooper." I agree with much that he says about the separation of drainage and sewage; but it is evident that he has not had all the data respecting metropolitan drainage, &c. which ought to be considered.

In the first place, is he aware that a very large portion of the area to be drained lies below the level of high water in the Thames? Wherever there are "depressed districts," as they are called, gravitation cannot be relied on to carry off drainage, and therefore it must be got rid of artificially. It would not do, according to him, to run it into his proposed receptacle. In the next place, he seems to think that it is possible to carry off the sewage in a moderately diluted state. One objection to this, with the proposed three-inch pipes, would be the risk of their being choked. A small pipe like that will answer very well where there is a good flow of water in it and it has a good fall; but it could not be relied on without a good flow. Another objection is, that you cannot avoid much of the dilution which goes on at present. All the house "slops" and dirty water, &c. must go off by the drains. You cannot alter the habits of the householders in this matter. Another objection is, that if you could avoid the dilution you ought not to do so. There is far too little water fouled in houses at present. We should be much better off if every man, woman, and child used at least ten gallons of water every day in washing. How few wash their bodies all over with soap and water every day; one of the best securities against ill health that we could have!

But if people go on with only their present stinted allowance of water, how large must his receptacle be? Taking the population of London at only 2,000,000, by cutting off suburbs, and allowing them only a bucket of water each daily; here is a supply of about 2,000,000 cubic feet of drainage every day. It would scarcely be safe to have a receptacle of less size than sufficient for a six weeks' supply. Could this receptacle be of less size than 100 acres 20 feet deep? And when the first six weeks were ended, what could be done with the collected sullage?

It has been my unhappy fate to spend many hours in examining proposals for the drainage of London, not a few of which, to those who know nothing of the difficultics involved in it, would have seemed far more promising than Mr. Cooper's; but when I brought them to the test of numbers, quantities, times, &c. I found that, with rare exceptions, they had but one foundation,—guess-work.

I recollect two of the schemes, each of which obtained very influential patronage from persons in high circles. On examination, it was found that one scheme would involve the constant employment of a fleet of at least 400 barges between London and Vauxhall bridges, each about 100 feet long; and that the other would require 2,000 carts, 2,000 horses, and 6,000 men, to be employed twelve hours a night throughout the year. In each case, a large reserve would also have been required to be used in emergencies. N. R.

SPACE IN THE BRITISH MUSEUM.

Of the thousands who daily crowd the sculpture galleries of the British Museum, but few are aware of the existence of the fine area afforded by the inner quadrangle of that building, now lost to the public. This area is nearly two acres in extent, and would afford a most desirable and agreeable means of communication and relief to the crowded galleries, where an impossibility is often found to contemplate in comfort the marvels they contain.

Why this available space should be barred and banned from the public, to answer no useful or necessary purpose, its grass plats being now only frequented by the cats of the neighbourhood, and the silence of its solitude only broken by their cries, is a question that the officials alone can answer. This space might be tastefully planted and decorated, as our French neighbours would have done long since, and afford room for the exhibition of any colossal and imperishable objects. There can be no good reason for this quadrangle sharing the fate of the Numismatic and Print departments of the Museum: it cannot, like these sacred chambers, be a show place for the friends of the resident officers, and consequently a *terra incognita* to the rest of the nation. Let us hope Mr. Sydney Smirke will remove the bolts and bars to the two doors in existence, and allow the public, for the first time since the erection of the building, an opportunity of judging of the proportions of their national museum. D.

UNIVERSAL ELECTRIC PRINTING TELEGRAPH.

A COMPANY to develop the system patented by Mr. J. W. Wilkins, is now in course of formation. There have been two or three attempts at a self-recording telegraph prior to this of Mr. Wilkins, but none which seems to have promised so well.

Every one knows that the means employed in the ordinary telegraph are the dial and index, by means of which the messages are reflected,—"coming like shadows, and so departing," and that for the effectual working it needs two clerks, one whose duty it is to read from the indicator the information which the other writes down. This staff is required where the message is direct and within the course of the electric current, but should the route be circuitous, or the town beyond the distance which it is known the current can travel (under the most favourable state of atmosphere and condition of the wires and insulators, 200 miles), then it must be multiplied twice or thrice, as the case may require; for instance, should communication be desired between Bristol and Edinburgh, Bristol must signal London—London, York—and York, Edinburgh,—the message being repeated no less than three times before reaching its destination,—a long, expensive, and, under the best management, but risky procedure. Under the new system, commencement is made by more perfectly insulating the wires, of which only one line is required for use; the dial and doubtful indices are done away with, and are replaced by an apparatus bringing into play the positive and negative currents of electricity with as much facility as the one current by existing methods: this is set into action by two small levers. One only would be needed, did not the English language contain more letters than can be conveyed by one; the one defining certain signs above a line, expressive of certain letters; the other below the line, expressive of the residue, the printing being effected by a moveable spring, having at the end a fine steel point, which presses endless paper against a small cylinder covered with black transposing material. This even would be of great service did it extend no further, inasmuch as the message sent from Bristol would be recorded in London by the machine itself, only needing an operator to send it forward to the next station; but to obviate this requirement, Mr. Wilkins has invented another instrument, nominated an "automaton repeater," doing away with any intermediate operator, and adding, as it were, fresh vigour to the electric current. Thus the sender at Bristol would call to London, "York:" the switch, as it is termed, would then be turned, bringing into use the "repeater," and the communication made perfect to York: the operator here seeing "Edinburgh" called, would turn the switch again, bringing into use the "repeater," and the communication would then be established *at once* between Bristol and Edinburgh: the message would then be passed and received in the latter city in a substantial form. By a practised operator the alphabet, it is stated, can be described in eleven seconds.

It is proposed to send messages of twenty words for 6d.

AN INVITATION TO THE HOME SECRETARY.

COME with us, *incog.* from the district of 5,000 fashionables to the districts of 250,000 of the pillars of this country—the working classes—and see if the *improvements* of the west are more important than the *necessities* of the east. Start, my Lord Palmerston, with us from any point east of Finsbury-square, but come *incog.*: you, as guardian of Justice, will hurry fast on to Shoreditch. Just stop to listen to the buffoonery of a County Court, the mock solemnities and contempt-breeding manners of a "dashing white serjeant;" hasten then to the Eastern Counties Railway; take your choice of either side of the arches, but trace your steps along the roads by their side; witness the accumulations of mud from unswept streets, roads without pavement, hollow ruts or wrong-sloped surfaces, retaining rain and other water and filth for weeks; do not hold your nose nor your breath, but breathe freely—it will be good for your family doctor; look into the houses, the water-butts, cesspools; the want of drainage in houses as well as streets; look under the arches, into the abominable street conveniences, built out on the pavement; glance at the dung-heaps, the low walls which surround the gas-works, instead of high walls to carry up high the effluvia; the houses built close in to nuisances. Look then at the inhabitants of this dense, dark, and murky district; the stunted size, the pale, sunken, ghastly eye; and ask the cause of it all, and why these people are not to be looked after, but are left to themselves.

After traversing for a mile east of these arches, turn to your left, and hurry through Bethnal-green up to the canal side, and go along the canal, aye, all the way to the City-road. In that irregular triangle, see how contrary to all science the roads are made or left; the nuisances accumulate, and the people are unnerved. How much longer are the people to be left to themselves, injuring not merely their own health and life, but those of all, as the pestilence steals in step by step? C. N.

WORK DONE IN THE INCUMBERED ESTATES COURT OF IRELAND.—An interesting summary of proceedings has been printed and issued, from which it appears that the produce of sales made down to 21st October last was 10,430,468*l.* odd, pretty equally distributed throughout the four great divisions of Leinster, Connaught, Munster, and Ulster; that the rentals of the estates sold amounted to 729,337*l.* odd, and their acreage to 1,691,702. The Court have had deposited in the Record Office 1,600 boxes of title-deeds, containing upwards of 100,000 documents and muniments of title. Thus is a new species of revolution quietly working its way over all Ireland. Some say there is no little need of the "Incumbered Estates Court" revolutionists nearer home. In Ireland, however, incumbered estates seem to have been the rule and any other the exception.

NOTES AND INQUIRIES.

The Abbey of Grace.—There is no "authority" that this monastic institution was situated "*in* the city of London," but *outside*, as is thus stated by Stowe in both the first and second editions of his "Survey," 1598 and 1603:—"On the east side, and by north of the Tower, lieth East Smithfield, Hog's-street, and Tower-hill; and east *from* them both was the new abbey, called *Grace*, founded by Edward III." The contrary supposition to this has, no doubt, been suggested to the inquirer, in the fact, that the present well-known Grace-church-street is within the City proper; but which is a corrupted appellation, as Stowe also certifies, where, in an earlier part of his work, is this passage:—"Then higher in *Grasse*-street is the parish church of St. Bennet, called *Grasse Church*, of the *herb market* there kept."

J. D. D.

Green Stain on Free Stone.—Your friend, "Reader," need not give himself much uneasiness about the green on free stone newly put up, as it will disappear entirely *after a few days' frost*. It is quite common with most of the stone used in Scotland, but has been by no means so bad with us this year as last.

SUBSCRIBER.

EXPERIMENT ON VENTILATION.

A SHORT time ago, I had the pleasure of witnessing an instructive experiment illustrative of the *modus operandi* of a new system of ventilation coming into use, and known by the name of its introducer, Mr. Watson, of Halifax. The experiment not only demonstrated the importance of a right principle of ventilation, but of provision for a much larger supply of fresh air than is commonly thought necessary, and was conducted in the office of Mr. John Baird, architect.

The operator employed his usual apparatus,—a glass vessel resembling the ordinary receiver of an air-pump, about 7 inches in diameter, and 10 inches high, but differing from it in having a tubular prolongation 6 inches long or so, and 2 inches wide, issuing from its upper surface or domular top. Into this vessel, the lower edge of which rests in a small trough going round the periphery of a metallic plate or sole, and filled with water so as effectually to exclude all access of air from below, he introduced four short pieces of candle about an inch thick, yielding each a pretty large flame.

When the opening above was in a monotubular condition, the vital element of the air was rapidly consumed, and all the candles went out. But when they were relighted, and a thin division introduced into the vent, so as to convert it into two semi-cylindrical tubes, they continued to burn for a considerable time. It was very soon obvious, however, that the supply of pure air was not equal to the demand: the flames began to languish, and one of them expired; a little revival followed, but still the supply was inadequate; a second flame sunk under the mephitic gases that had been formed, and soon after a third all but succumbed. There was now an ample supply for the survivor, which blazed away most brilliantly, revelling in the redundance of oxygen. As the pure air began to predominate, the sickly companion became also sensible of its vivifying influence and reared its drooping crest; but there was not fuel enough for both, and now was exhibited a most interesting alternation of languor and revival, as the proportion of pure air increased or diminished under the varying circumstances.

During the experiment, the existence of the double (issuing and entering) currents was repeatedly tested with the most convincing results, by holding a smoking taper over the divided funnel.

By means of this aparatus, the operator was able also to make apparent the objections to which the common method of admitting the supply of fresh air from low levels is liable, and which is painfully palpable in the recent ventilation of our City Hall (Glasgow). By raising a portion of the under edge of the receiver out of the peripheral water-trough, and keeping it so by means of a small wedge, the air naturally rushed into the heated chamber, and the candle began to flare away famously; but instead of preserving its former steady perpendicular, this flame was deflected till its apex nearly touched the opposite side of the glass, conveying a very intelligible notion of the condition of those who are in the way of these aerial currents; and as in our City Hall,—thanks to the "ventilator,"—their name is legion, such is the unfortunate predicament of almost every individual present.

The system to which I have been alluding has been introduced in many instances and with success,—in the case-room of the *Herald* office, for example. The necessity varies from the requirements of five pairs of lungs to that, including the gas-lights, of more than 200 pairs, or from a supply of 50 cubic feet of air per *minute*, to that of 2,000 cubic feet in the same time. The ventilators completely provide for the whole range between these opposite extremes, maintaining throughout a pure and invigorating atmosphere.

J. M.

ARCHITECTS AND COMMITTEES.

ELLIOTT *v.* THE MAYOR AND CORPORATION OF SOUTHAMPTON.

IN the County Court of Southampton, held on the 15th November, the plaintiff in this action sued the corporation to recover the sum of 40*l*. The plaintiff's attorney, Mr. Moody, stated that his client was an architect and land surveyor, and had been induced by invitation to engage in a competition for laying out the public lands. The decision of the corporation was not officially made known to his client until April last,—that decision being that the first premium of 40*l*. had been awarded to the corporation surveyor, and the second of 20*l*. to Mr. Elliott, who, on inspection of the first plan, finding it at direct variance with the written instructions furnished to the competitors, declined to receive the second prize, and claimed the first. The plaintiff failing to obtain any satisfactory explanation from the corporation, who refused all reference, then decided on resorting to legal proceedings. It so happened that since these proceedings had been commenced, Mr. Elliott had become a member of the council, and he might, perhaps, be now thought to occupy a somewhat anomalous position. He felt, indeed, that a point of great importance to the members of his profession had to be decided. It was matter of public notoriety that committees and public bodies entertained the notion that they were at liberty to give any instructions they pleased to competitors, without being themselves bound by such instructions. Architects and artists thus became exposed to the most flagrant injustice: they were called on to employ their talents in working out a given problem, and then often found that they had failed of success by their adherence to the conditions given. The instructions in the present case informed the architects that they were to have regard to the Marsh Improvement Act, and particularly to certain clauses referred to in that Act. Those clauses rendered it utterly impossible to carry out the selected plan without leaving out nearly all its distinctive features. It was not consistent with the commonest principles of justice that a design should be selected because it contained features which the other competitors, by adhering to the instructions given them, were prohibited from inserting, and that then the parties so acting should turn round and say, "Oh, but we do not mean to carry out these objectionable parts." The defence which was to be set up to this action was,—that at the meeting when the competitors assembled to meet the Marsh Committee, verbal instructions were given to the effect that the competitors were at liberty to frame their designs in anticipation of another contemplated Act to do away with the restrictions of the Marsh Improvement Act. There was sufficient evidence to disprove any such verbal instructions; but even suppose them to have been given in this desultory way, it was preposterous to suppose that they could be permitted to overrule the written instructions subsequently sent by the town clerk to each competitor.

At the conclusion of Mr. Moody's address, the judge (Gale) said that as he had formed an opinion on the law of the case adverse to Mr. Moody, who would doubtless appeal, it would be better for his client to submit to a nonsuit and refer at once to the Superior Courts. His Honour then stated that he doubted whether he ought not to have called on the corporation to reconsider the plans. He also doubted whether the class of buildings shown on the plan selected as first might be considered as exceptions from the restrictions of the Act; and his opinion as to the liability of committees was, that as the selection was a matter for their judgment, they were at liberty to please themselves; "*in other words, they themselves were at liberty to disregard the instructions given by them to competitors!*"

Notice of appeal was given.

Miscellanea.

THE SOUTHERN SEWERAGE OF THE METROPOLIS.—A commissioner of sewers for Surrey and Kent writes us on this subject at some length, pointing out what he conceives would be the proper way to rid the south side of its sewage. "Suppose it is emptied into the River Lea or the Ravensbourne," he remarks, "it still would come into the Thames, and with its waters be carried with the flood-tide westward of London-bridge; therefore it is only going a circuitous route, and at a heavy expense, still to make use of the Thames. The direct road into the Thames is the best and cheapest. Thus, let the outlets be carried down below low water, covered over either with brickwork or iron-pipes, so as to keep effluvia from the persons in the neighbourhood or travelling by steam-boats," &c. He hopes the "Government will not be goaded on to lend their aid to so expensive and useless a work as carrying the sewerage to Deptford and Blackwall, which will not drain the streets and courts in the metropolis, but only put off for another generation the effectual draining of these places, so much wanted." The first change of the Thames water in his time, he observes, took place when the bilge and stagnant water in the docks was flushed out: then the smelts left the river, or were killed. The worst enemy the fish ever had, however, he considers the gas liquor disembogued through the sewers. Fish of all sorts, he remarked, then left the river. "If you pollute this stream, you ought to provide means to get good water for the inhabitants." He complains that seamen are not provided with purer water sources.

MEDAL OF LORD GEORGE BENTINCK.—A medal has been struck for the subscribers to the Bentinck Memorial, the funds, we suppose, being more than sufficient to pay for the statue of the deceased statesman erected in Cavendish-square. It has been executed by Mr. Benjamin Wyon, and is 2 inches in diameter. On the obverse, around the head, is, "Lord George Bentinck; born, 1802; died, 1848." On the reverse, simply this sentence—"Brave—earnest—generous—unselfish—true; he won the confidence and riveted the attachment of a great party, which his patriotism had inspired with courage, and his self-devotion had animated with zeal." The head is a good likeness, and the execution altogether very creditable to Mr. Wyon.

PRESERVE THE PANORAMAS.—A beautiful panorama of Mexico is now exhibiting in Leicester-square, which, I see, is advertised to be closed very shortly. This, I fear, means painted over or destroyed. Now, would it be out of place in your valuable paper to suggest, that such exquisite works of art, so beneficial to the rising generation, should be saved by the appropriation of them to the walls of some public building or to private ones, erected on the extensive domains of such wealthy proprietors as the Marquis of Westminster, the Marquis of Stafford, &c.?—A. B. C.

VILLAGE LIBRARIES.—A scheme for the supply of villages and hamlets with books for perusal, on some such plan, we presume, as that for many years practised in Scotland, has been adopted by the Yorkshire Union of Mechanics' Institutes, at the suggestion of its honorary secretary, Mr. J. Hole, and is about to be put in practice. "Sections of fifty volumes will now be forwarded to any village where twenty-five subscribers at 1½d. a week, or 1s. 6d. a quarter, paid in advance, and a librarian, can be found." In Scotland, and also, we presume, in Yorkshire, the libraries are itinerant, so that, when the lot is done with, it is sent elsewhere and replaced by another.

GAS MANUFACTURE.—Mr. J. M. Souchon, of Paris, has taken out a patent for a mode of increasing the quantity of gas, and obtaining cyanides by passing the products of the distillation of coal, &c. through a heated retort containing alkali, or alkaline salts; for obtaining illuminative gas and cyanides, by injecting a mixture of tar and ammoniacal liquor into a heated retort, and passing the vapours through a second heated retort, containing alkali or alkaline salts; purifying gas by a series of revolving purifiers, containing liquids and pieces of wood, or other solid substances, continually wetted by the solutions, and exposed to the gas; and for a peculiar mode of constructing the doors of retorts and their hinges.

COMPETITION AT PONTYPOOL.—Of thirty-nine designs submitted for the new town hall about to be erected at Pontypool by the Lord Lieutenant of the county of Monmouth, in commemoration of the birth of a son and heir, those by Messrs. Bidlake and Lovatt, of Wolverhampton, architects, have been selected. The premium for second was awarded to Mr. Trimen.

TESTIMONIAL TO TEACHER OF BIRMINGHAM SCHOOL OF ART.—A silver cup, manufactured by Messrs. Elkington, Mason, and Co. from a model by Chevalier Schlick, has been presented to Mr Wallis, the head master of the School of Practical Art at Birmingham, by the students of the school.

BEDFORDSHIRE ARCHÆOLOGICAL SOCIETY.—The monthly meeting of this society was held on Tuesday in last week, at Bedford, when various donations were made, chiefly books, including a Dutch almanac for the use of those who cannot read,—a sort of hieroglyphical production, still, it is believed, regularly issued, and in which cold weather, for instance, is predicted under the shape of a glove; warm weather, a hat sideways; frost and snow, a snow shoe; time for turning up the soil, a three-pronged fork or spade, &c.

THE WELLINGTON STATUE FOR MANCHESTER.—Of the thirty-seven model statuettes sent in by twenty-nine sculptors, selected, with others who refused, to compete for this statue, the judges appointed, Lords Ellesmere and Wilton and the Bishop of Manchester, have chosen a pedestrian statue by Noble, and the subscribers' committee have confirmed the choice. Unfortunately a good deal of dissatisfaction, it appears, has been expressed that an equestrian statue was not selected. The judges were of opinion that it would have been difficult to manage such a statue in connection with the site and the associate pedestrian statue of the late Sir Robert Peel. The local papers speak of equestrian statuettes by Adams and Bell, amongst the number sent in, as being very fine ones.

THE IRON AND COPPER TRADES.—The iron trade is still improving; but from inability to obtain supplies of coal and iron stone, furnaces have been put out of blast. Fear of exciting new demands on the part of workmen, has a salutary influence in suppressing the continual efforts of speculators to raise prices. There is hope of an improvement in the export trade from the announced reductions of import duties in France, 10 per cent. on wrought iron, and 20 to 30 on cast. The metal trades have been checked in their manufacturing prosperity again by another unaccountable rise in the price of copper of 9*l.* 10s. a ton, and a still further advance is even feared.

LEICESTER-SQUARE.—The threatened blocking-up of this square with a "Cosmos Institute" constitutes the burden of many a complaint addressed to us in denunciation of the project. Some of our correspondents are mistaken, however, in imagining that we have never yet protested against the choking-up of this little bit of metropolitan lung with such tubercles as brick and mortar, in any shape, cannot but constitute, when deposited on a site which becomes more and more precious as an open space, the more the metropolis extends. We have again and again protested against anything being built on Leicester-square that would diminish its utility as an oasis and breathing-spot in the midst of the wilderness of brick and mortar. "Cosmos Institutes," therefore, so long as they are associated with Leicester-square at least, will meet with little favour or promotion from us. One correspondent, "Flaneur," proposes, on the contrary, that no time should be lost in sweeping away even the Cosmolitan germ already deposited, and which, he says, he always understood was but a temporary erection, as its seedy aspect still betokens. He would have the square converted into, what London does not yet possess, an open "Place," levelling its area by raising the lower end, which, faced with an elegantly-designed parapet, and flight of steps in the centre, he remarks, might be rendered exceedingly ornamental and attractive "From the flight of steps," he continues, "a fine new street might be opened to Pall-mall East, having on one side the magnificent pile of buildings which, under whatever name, is destined, it is hoped, to adorn the finest site in Europe, at present usurped by a hideous agglomeration of workhouses, barracks, and what not; and then, who knows, a beginning once made, we might have the Mall and Carlton-terrace opened to Charing-cross: and I can just dream of the possibility of a noble avenue, worthy of a great nation, being carried (instead of the pre-ent "crooked way") thence to the New Houses of Parliament, Government offices, and other national and public buildings, with piles of first-class mansions for members of Parliament and others, artistically grouped on each side, new Westminster Bridge worthily designed and executed; the Thames embanked; and a connecting street (uniform with the opening to the Mall) thence to Charing-cross by Northumberland House."

WATER.—A bill is to be laid before Parliament for the incorporation of a new Company to supply Portsmouth and Gosport with water from the Havant Springs. About 500,000 gallons a day are said to be requisite, while the springs yield five times that amount, or 2,500,000 gallons a day.——A like application to Parliament is announced for the incorporation of a Company to supply Stourbridge and adjoining townships with water, from reservoirs supplied by the Gig Mill Stream, at the Heath, in the township of Stourbridge.——The Cheltenham Water Company have given notice of their intention to apply to Parliament next session for increased powers, and for obtaining an increased supply of water from that which now supplies the Syreford mill, and some which flows into the river Colne. They also seek powers to contract with the Cheltenham Town Commissioners to supply water for public purposes, or for the use of certain classes of the inhabitants.——Lady Charlotte Guest has promised to supply the whole of Dowlais with water at her own expense, involving an outlay of 3,000*l.* This town is in an extremely wretched sanitary condition.

THE WAGES QUESTION: METROPOLITAN BRASS FOUNDERS.—We have received a letter signed "J. Bethray," stating that the report that the journeymen brass and iron founders have been organizing for an advance of ten per cent. is erroneous as regards the trade society, which, he says, numbers nine-tenths of the whole of the London journeymen founders. No such organization, according to our correspondent, has been contemplated, or in any way alluded to by the society; nor can he hear that any of the few non-society men have hinted at anything of the sort. The report he naturally thinks is one likely to do much mischief; in fact, he adds, "I have every reason to believe it has already done so, therefore it is hoped that in justice to us you will in your next correct the error, or take such steps as will set us right with our employers, and arrest the mischief and ill-feeling which this report has created." We very gladly do so.

FREE LIBRARIES AND MUSEUMS.—A series of three reports on the Manchester Free Library, from its origin, by the chief librarian, Mr. E. Edwards, has been printed and issued, together with an introduction on the results and defects of the Public Libraries Act of 1850, by the same experienced librarian. The Liverpool Library and Museum committee have also, we observe, just issued a report, containing a retrospect of the proceedings of the past year. These reports will be read with interest by all desirous of promoting the establishment of free libraries and museums.

HOLYROOD PALACE GARDENS.—A correspondent, "Exoptans," complains that the classical precincts of the Royal Palace at Edinburgh are desecrated by conversion into market-gardens, and proposes that they should be restored to the public use.

THE BIRMINGHAM AND MIDLAND INSTITUTE.—This new project was inaugurated by a meeting of five to six thousand persons of all classes in the town-hall, Birmingham, on Thursday evening in last week, Captain Tindal in the chair, when able addresses were delivered by Mr. Cole, Sir R. Peel, and various other gentlemen, in which the importance of art and industrial education for artizans was strongly inculcated, and the union of an elementary school of art with the proposed institute recommended as an essential to the success of the institute itself, which ought to be self-supporting, and to be fed, as it were, by the art-education acquired in the school.

THE LIVERPOOL ARCHITECTURAL SOCIETY.—On Wednesday in last week, at a meeting of this society, held at the Royal Institution, Mr. Verelst presided. The secretary (Mr. Boult) announced that the next subject for competition would be a design for a church to afford accommodation for 400 persons, in the style of Palladio, plans to be sent in by December 28th. Mr. Watson, of Halifax, manufacturer of the self-acting double-current ventilator, read a paper on "Ventilation." He stated that his invention was framed upon the principle of allowing vitiated air to escape and fresh supplies to enter spontaneously, by their own elastic force, without causing draught. His plan consists of a tube, fixed in the ceiling or other portion of the building which may be found most convenient, and constructed with two funnels or divisions, up one of which the vitiated atmosphere escapes, while fresh and equal supplies of pure air are admitted into the room.

ROAD-MAKERS' TENDERS.—The following tenders were sent in for roads, drains, &c. on the Sutton estate, purchased for the members of the City of London and Counties Freehold Land Society:—

S. Wright	£960	0	0!
J. B. Oldham	773	0	0
E. Murray	768	0	0
B. Green	703	11	0
G. H. Lovegrove	683	0	0
R. T. Carlisle	568	0	0
W. B. Smith	498	6	0!

PARRAT'S TUBULAR LIFE-RAFTS, &c.—Some successful experiments have just been made with various modifications of a valuable invention by Mr. Parrat, of the Treasury, which we first brought under the notice of the public on the 23rd April last. As then intimated, the main principle of the invention consists in the use of India-rubber tubes, inflated with air, and made to float with nettings and cross spars, and either attached to a boat or without one, so as to constitute either a life-boat, incapable of being upset, or a life-raft of same description. Another modification consists of a moveable bridge, floated on inflated tubes, and made with spars, lazy tongs, and thin boards, the whole of the apparatus for a bridge, capable of being thrown across a small river, being made so as to be packed on the back of a single mule, and easily put together.

ROLLING IRON.—Mr. Newton, C.E. of Chancery-lane (by direction of the inventor), has patented.—1. The employment of rolls for large bars, mounted in a vertical position, when three rolls are combined, equivalent to two pairs of rolls, each pair rolling in opposite directions. 2. The employment of end rolls in combination with the main rolls, and having axes at right angles to the axes of the main rolls, and acting in whole, or in part, against the ends and collars of the main drawing rolls.

HOLLIN'S STATUE OF SIR R. PEEL.—Messrs. Elkington, Mason, and Co. of Birmingham, have undertaken to cast in one piece Mr. Hollin's model of the late Sir Robert Peel, so that, as a local contemporary remarks, "Birmingham may boast not only of having within itself an artist capable of modelling a statue of the late statesman, but also of having the means of producing the work in bronze."

GAS REGULATORS IN PRIVATE DWELLINGS.—A correspondent, Mr. George Aickin, favours us with some account of his personal experience in gas regulators, and suggests an improvement. He had a regulator applied to his gas fittings, which acted very well for a time, but at length failed to act properly, the consequence of which was, not simply a failure to regulate the pressure, but an escape of gas from the regulating apparatus, which led to an explosion, in which he had a narrow escape from serious, if not fatal injury. The regulator consisted principally of an outer cylindrical casing, partially filled with water, and a smaller inverted one, dipping into the water, like the ordinary gasometer, and provided with an air-chamber, to make it more buoyant. When the gas was admitted, it closed a valve, by raising the inner vessel, in proportion as the pressure in the mains exceeded that required. If only one light was required, the opening was nearly closed; if more, it instantly increased in area. The cause of the accident was a leakage of the water from bad construction. Our correspondent suggests, as a more efficient and safe regulator, one consisting of a similar outer and inner vessel, the latter attached to the former by means of a band of leather, oiled silk, or other pliable material, as in a dry meter, and balanced by means of a lever and weight, or other contrivance, a conical valve to the inlet-pipe, but entirely closing the opening, a weight or weights corresponding to the pressure required fixed to the roof of the inner vessel, and enclosed in a domed glass tube fixed to a lid, which would be screwed down to the outer casings, and made gas-tight." If anything went wrong, he remarks, it would only fail by not indicating.

THE TRADE IN FURNITURE WOODS.—Time was when a portion of the capital of this country employed its population in the manufacture, and its merchants in the exportation, of furniture. The foundations of the fortunes of the more prosperous cabinet-makers and ship-owners were so laid. Circumstances, however, interrupted this state of things, through the imposition of war-duties (which existed when we entered the trade), say 12*l.* 10s. per ton on Spanish mahogany, and 45*l.* per ton on rosewood; and Lancaster ceased to employ its people in the manufacture beyond the home-trade, and the merchants ceased to load the 'tween decks of their ships with furniture to the colonies. From the best information we have obtained there is not, just now, a wiser policy than transporting furniture to San Francisco and Australia, as a foreign trade; nor a more prudent policy than that of laying in a stock of furniture wood for seasoning, because, there being no duties, the unexampled prosperity of nearly every colony insures, for a long series of years, a market for the furniture of Europe; its fashions being preferred. —*Messrs. Chaloner and Fleming's Circular.*

TENDERS

Received at Hunter's Hall, Epping, Essex, for farm buildings, for the Hon. John A. Ashley (Messrs. Hannell and Robb, St. Ives, architects), were as follow:—

Finding	£1,569
Stredder	1,200
Field and Sons (Enfield)	1,200
Savile (Chigwell)	1,150
Harrison	979

The Builder.

SATURDAY, DECEMBER 3, 1853.

ON a previous occasion, when we urged on the builders of houses around the metropolis the necessity for caution, and reprobated the mode which was being pursued, the truth of our remarks received a distressing confirmation by an accident on the very morning of their publication, with loss of life, and a second "fall" almost immediately afterwards, fortunately without so serious a result. By what some will call a strange coincidence (although in truth not strange at all), our article with the same end in view last week was borne out by the fall of a large house in Duke's-terrace, Maldon-road, Kentish-town, on the morning it appeared, when a number of men were injured, and by the fall of two large newly-built houses in Denbigh-street, Pimlico, on the following day, most providentially before the men had commenced work. The house at Kentish-town, 30 feet by 24 feet, and three stories high above the ground, was a corner house, intended for a tavern (with *brestsummers in front and flank*, carried on iron columns), which was being erected by Mr. Thomas Harvey, of the Caledonian-road, for Mr. J. Moore. When we saw it on the day after the accident, there was not one brick upon another above the level of the ground. The men were buried in the ruins; but, with the exception of one labourer, as we are told, who fractured three ribs, were not seriously injured, and are all going on well. The owner, who has favoured us with some information on the subject, and exonerates the builder, says one of the brestsummers was supported by a brick pier in cement, 3 feet 6 inches by 2 feet 6 inches, and a 4-inch wrought-iron column; and the second by two 6-inch cast-iron columns, each weighing 8 cwt. one of these being at the corner, and each resting on a brick pier, in cement, 3 feet 6 in. by 2 feet 6 inches. He attributes the accident to the splitting of the stone on the corner pier, on which the column rested, and says, "The sudden action no doubt caused the base of the column to slip outward, in addition to which it appears that the frost had caught the cement of the pier. There was concrete under the piers, which had been in two months before a brick was laid."

An immense number of houses, by the way, are being carried up in this neighbourhood: amongst them is a corner house with returned brestsummer and column at the angle, at no great distance from the scene of the accident, which seems to require attention.

The two houses in Denbigh-street, Pimlico, were in the course of erection by Mr. Simpson, a builder, and here the external flank wall, 60 feet high, first gave way. The walls were built of two sorts of bricks, imperfectly bonded, and two sorts of mortar—one composed with mould, the other for the outer 4 inches of work, with sand. Unequal pressure, unequal settlements, and the bad weather, may suffice to explain the disaster. If not, it would not be difficult to find other reasons for it.

The omission of wood-bond enforced, and properly so, too, by the Buildings' Act, renders other precautions necessary; but these, for the most part, are not taken. In the numerous semi-detached houses which spring up in the fields about the town like mushrooms (some of them scarcely less fungous), it is not unusual to find the flank walls 30 or 40 feet high, standing clear of all support from bottom to top, and with nothing whatever to steady or hold them together while the mortar hardens. Knowing what this mortar is in many cases, it is truly wonderful that accidents are not more frequent.

Touching what we said of the power possessed by the district-surveyor to remedy bad work, it may be useful to publish the result of an information laid by the surveyor of the district of Fulham (Mr. A. Moseley) against the builder of three fourth-rate houses on the north side of the King's-road, and near Stanley-bridge, to the effect that the bricks forming the several walls of the houses, had not been laid in and with mortar or cement, in such manner as to produce solid work, as prescribed by Schedule D, parts I. II. and III.; and that one of the walls had bulged in two places, and was out of the upright. The referees determined that the walls "have been built of brickwork, containing a large proportion of fragments of bricks, or bats; and that the bricks and bats of which such party-walls and external walls respectively have been built are laid in and with a material mainly consisting of loam; and that such material is not mortar or cement within the meaning of the rules of Schedule D of the said Act first herein mentioned; and that the work produced by so building the said party-walls and external walls is not solid work within the meaning of the said rules; and that therefore the said party-walls and external walls respectively have been built in such manner and of such materials as that the same are not built of sound bricks or of stone, or of such bricks and stone together laid in and with mortar or cement, in such manner as to produce solid work, as required by the said rules;" and they directed the builder forthwith to amend the irregularities and to pay the costs of the case and a fee to the district-surveyor.

Let us hope that what has been said, made forcible by the accidents to which we have referred, may lead to the exercise of greater care, and so save lives and property.

And now let us turn to a pleasanter subject, namely, some residences of improved character, in arrangement, which have been recently completed, or are now in progress.

In Francis-street, Westminster, a large building is being erected from the designs of Mr. Henry A. Darbishire, for the better lodgment of married soldiers. The officers of the Guards saw the evils attending the present system; a good spirit within whispered "Up Guards, and at them:" and always ready—when were they ever behind, if there was an enemy to conquer?—they forthwith resolved to erect a building containing a number of distinct tenements, which should secure to the soldier the comforts of a respectable home at a rent not higher than that which he has been accustomed to pay for the most wretched accommodation. They also determined that the building should be self-supporting, and not partake in any degree of the character of an eleemosynary institution.

In accordance with these views, the Victoria Lodging House, so it is to be called, has been undertaken. It consists of fifty-four dwellings, having a common staircase of stone, 9 feet wide, open on one side to the external air from top to bottom. It terminates at the roof, which is flat, for the purpose of affording accommodation for the drying of clothes, cleaning arms, &c., &c. Each dwelling consists of a living room, 14 feet by 10 feet, and a chamber, 14 feet by 8 feet, with sink, receptacle for coals underneath, cupboard, cooking range, boiler, oven, &c., and water supply from cisterns on the roof. Four of the dwellings have a scullery, 8 feet by 5 feet, in addition to the above. There are nine dwellings on each floor, with four water-closets, and two dust shafts; these are situated at each extremity of the building. Ventilation is secured by means of vitiated-air flues, which convey the foul air to the roof; and a constant supply of fresh air is admitted at appropriate intervals. The building stands upon a plot of ground 100 feet long, by 62 feet 6 inches deep; it occupies the entire length, and a depth of 37 feet 6 inches, leaving an area in its rear, where wash-houses will be ultimately erected. The builders are Messrs. Smith and Appleford, and the cost, we are told, will be about 6,000*l*.

A building to accommodate thirty-two families has been erected by Mr. Newson, the builder, on a somewhat awkwardly-shaped piece of ground in Grosvenor-mews, Berkeley-square. It consists of four floors, each floor comprising eight sets of two rooms, with two closets, sink, and dust-shaft. These rooms are approached from open external galleries, to which a central staircase (of slate and iron) conducts. Each living-room has a cottage range. The dust-shaft has an opening on the gallery level, for the convenience of sweeping into, the dust, &c., falling into a vault, which can be emptied as may be required. Each floor is provided with water. The basement contains a coal-cellar for each occupant, and there is a space allotted for washing and other conveniences. The cost of the edifice was 3,000*l*. The building is 109 feet long, 32 feet wide at one end, and 15 feet at the other. The rooms are, therefore, necessarily small; and, opening at once, as they do, into the external air, will, we fear, be cold. This might have been avoided in eight of the dwellings, by making the entrance on the landing of the staircase. It is, nevertheless, a meritorious step on the part of Mr. Newson; and we are glad to learn that the building has been purchased by a committee of the parishioners. Unless the ground-rent be excessive, they may afford a boon to the industrious classes, and yet obtain a fair return for the capital invested. This is the great point to be made thoroughly understood.

We must return to Victoria-street, to mention the fine set of buildings erected there by Mr. Mackenzie, to supply what has long been a desideratum in London, namely, complete residences on flats, as in Edinburgh and Paris. The accompanying plan of one floor (on the next page) will explain the arrangement. Each house, or rather collection of houses, has a frontage of about 117 feet, by an average depth of 45 feet, and the height from the basement to the roof is 82 feet. Where several come together, they form an imposing pile. The cost of each house has been 16,700*l*. These buildings are fireproof; the floors are composed of iron girders, and brick arches in cement between; there are ceiling-joists below, and joists and 1¼ floor battens above these, rendering them sound-proof. The roof is flat, and is composed of girders and arches, with a covering of asphalte. All the water and gas pipes throughout the houses are of iron, proved to a pressure of 100 pounds to the inch, previous to fixing; and every care appears to have been taken to make the buildings as substantial as possible, to avoid the necessity of repairs.

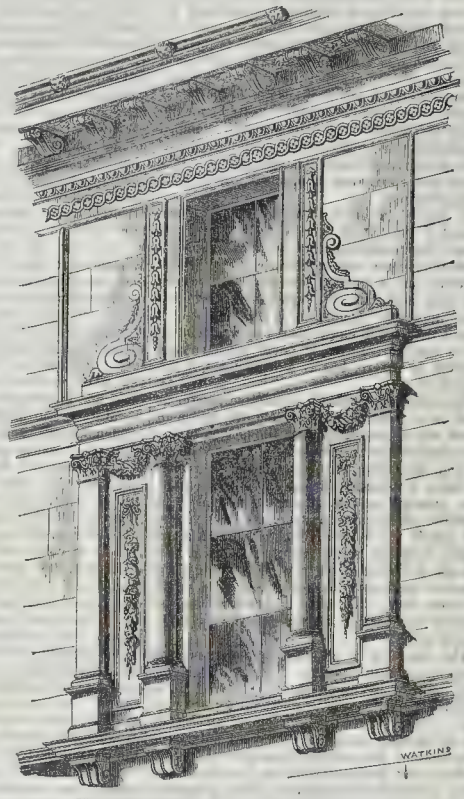
Each house contains six shops, three on either side of a fine staircase, with basement and entresol attached to each, and eight suites of apartments; the latter approached by a door outside, distinct from the shops. All the staircases are of stone.

The annexed details will serve to show the character of the buildings externally. A porter resides on the premises, who performs all the duties usually performed by a hall-porter in a private residence; and the hall and staircase are lighted at night at the expense of the proprietor, and kept in a proper manner. There is a separate staircase for tradesmen, and a lift for raising heavy weights. The advantage of such residences to parties who remain only a portion of the year in London is obvious, as

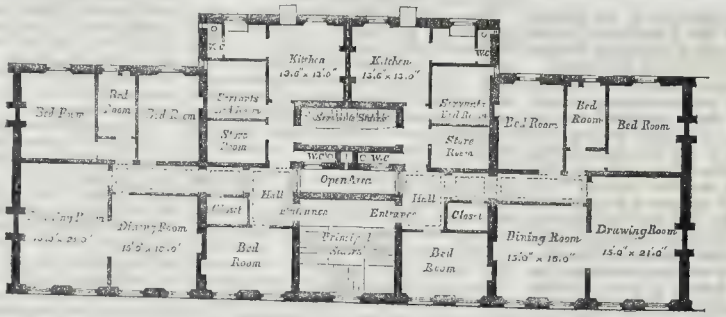
HOUSES, VICTORIA-STREET, WESTMINSTER.



STAIRCASE WINDOWS.



UPPER STAIRCASE WINDOWS AND CORNICE.



PLAN.

10 5 0 10 20 30 40 50 Feet.

ONE STORY DIVIDED INTO TWO SEPARATE DWELLINGS.

the porter in their absence takes charge of the apartments. The shops are priced at 150*l.* per annum, exclusive of taxes, and the flats range from 90*l.* to 80*l.* per annum, the landlord paying all the rates and taxes. It is Mr. Mackenzie's own speculation, and the idea, we believe, originated with him.

ROBERTS' "HOLY LAND."—We think it worth while to note that the whole of this work is about to be sold by auction, as will be seen by an advertisement in another page. The work itself is too well known and esteemed to need recommendation.

CLASSICAL COLUMNAR ARCHITECTURE,

AND THE "STONES OF VENICE."*

THE first structures erected on the earth, entitled to be termed architecture, were doubtless columnar. Columnar architecture enshrined the altars of the ancient world, and, leagued with sculpture, became the great vehicle for what of beautiful or sublime could be communicated to stone. It was the material grandeur of Nineveh and Persepolis, the sublimity of Thebes, the world's wonder at Ephesus, the glory of Athens, the magnificence of Rome; nor in the sacred dwelling-place of the Shekinah at Jerusalem was the column forgotten as an impressive and significant element.

For its full artistic development, however, we turned to Athens, and to her imperial conqueror and imitator, Rome;—cities wherein columnar architecture reached its perfection in the shape of the Grecian Doric and Roman Corinthian ordinances.

I have adopted the term "columnar" because I consider the classical architecture primarily and essentially so; and before proceeding further, I must call upon you to keep in mind a true

* The following paper was read at a meeting of the Architectural and Archæological Society of Liverpool.

theory of the column, which is simply an artistically decorated pillar, a post, or perpendicular prop, raised by the genius of form into the life of art; and this, united with horizontal features (as obviously natural), harmoniously decorated, applied in interiors to the support of a ceiling, and in exteriors, to a shelter in form of portico or loggia, constitutes an order of classical architecture;—an abstract idea of which architecture—*i.e.* as it is in itself—is not to be sought in such buildings as St. Peter's, at Rome, or the Palace of Versailles, but in its pure and undefiled manifestation in Greece, where alone we find it in its integrity,—treated according to its true nature and spirit, and innocent of all vices of misapplication.

It may be gathered from the theory I have formed of the column, that I deem the detachment of it essential to true classical architecture: I call the column not an artistic mural protuberance, but a fine-art post; of the beauty, life, and perfection of which the first and most important condition is isolation: connect it with a wall and it ceases to be a column. As a mural decoration it could not have been inspired by nature, but is a degeneracy, a corruption of art.

The detached colonnade instinctively suggests itself to a building people from the grove or forest, and rises naturally into the heaven of art; the attached one is merely its echo, or shadow. It is an abstraction of the colonnade, the beauty of which is obtained through a wrong medium. The attached column produces undeniably a beautiful effect, but in architecture the end does not justify the means. Such a column is not rightly a column at all; its practical use, if it has any, is that of a buttress, and suggests the idea how much more beautiful buttresses might be made than they are. It has no function distinct from that of the wall, of which it is indeed a part.

The objection to attached columns does not apply to attached pilasters: these, within a certain limited projection, as they pretend to no structural service, may be regarded in a different light. They refer to the peristyle, of which they are an abstract imitation. They are an artistic reflection of the columnar beauty on the mural surface, and are introduced for the sake of harmony or harmonious contrast. Their purpose is purely artistic—that of uniting the portico with the walls.

If such be the right use of the attached pilaster, it follows that it should only be used when there are detached columns in the same building, as without them it has no meaning.

While columns—to return to the subject—are kept detached, you can scarcely misapply them: they will range themselves into any necessary position, or relative position; you may couple them, or pile them on each other, without sacrifice either of truth or beauty. Such treatment I know has been objected to by modern writers, and particularly the practice of coupling; but if the right use of the column is to give support where support is really required, and to give the fullest expression of this office, then the practice of coupling columns on a line parallel with the horizon is quite justifiable. There are circumstances under which a breadth of intercolumns might be required, arranged for which single columns would neither actually nor apparently be equal to the task of support. In other words, there may be a greater breadth of opening with the same strength and solidity secured by coupling, besides greater richness and variety of columniation. This fact has been forgotten, and the practice has been objected to as corrupt, simply because it is without antique precedent. But it would be well if modern practice had no worse sins to mourn: the architecture of Paris would be pure indeed were the beautiful colonnade of the Louvre the most corrupt of its features.

This is the columnar system we derive from antiquity. It is emphatically the architecture of proportion, and therefore less than any other dependent upon extraneous decoration. The most eloquent form in which mere columnar architecture can manifest itself, is that of the Greek peristery. But this is not the perfection of classic grandeur; for it does not exemplify the full system as enriched by Roman arch and dome. It is in the combination of colonnade and dome, as exhibited in a peripteral edifice, with its cupola crowning it like the firmament, that the highest specific effect of this architecture is reached.

This system—whatever is connected with Greek or Roman architecture in principle or in form—Mr. Ruskin would now have us cast out as "base and unnatural, unfaithful, unenjoyable, and impious: devoid of all life, virtue, honourableness, or power of doing good." "To renounce utterly, whatever is Doric, Ionic, Corinthian, or Composite, in anywise Grecized or Romanized, or that betrays the smallest respect for Vitruvian laws, or conformity with Palladian work." The first thing that strikes us in this advice is, that to follow it, we must not only renounce the architecture of classical antiquity and the systems based on it, and practised through Europe for the last 300 years, but all Gothic and Romanesque also. Mr. Ruskin's prejudices hide from his eyes the fact of the indebtedness of all modern architecture, Eastern and Western, —not excepting the Byzantine and Gothic of Venice—to that of antiquity, and that a sentence uttered against everything "in principle or in form" of Greek or Roman derivation, sweeps the whole horizon of modern architecture at once, and involves the middle age productions, St. Mark's, the Ducal palace, and all, in its condemnation; and while eulogizing certain capitals as richer, and fuller of meaning than the classical, he forgets that it is to that classical type they owe their beauty, and but for which they could never have existed. Many of the Byzantine capitals he presents us with, do no great honour to their parentage, being as ugly as could well be imagined, abortive in conception, and barbarous in detail; but those that *do* give pleasure by their beauty of outline, owe every ray of that beauty to antiquity. They doubtless derived much of their freshness and variety from the sympathy of the workman with living herbage; but everything really artistic in their composition, was evidently drawn from the style he so vituperates. In the capitals called Gothic, on the 2d plate of vol. 3, so slightly modified is the Corinthian, that they might with as much propriety be called classic; and those that least depart from the best Roman examples, are undeniably the most beautiful. A similar remark may be made in reference to the vases, which are pleasing or otherwise as they approach to or depart from the Attic form.

There is no difficulty in tracing Mr. Ruskin's preference of the Byzantine architecture to his singular delight in colour, which he considers as some way connected with the religious sentiment. Hence his love of the Byzantine style, and admiration of the principle of incrustation, which is the only legitimate means of giving to a building perfect and permanent chromatic decoration. Hence his love of a building the claims of whose component parts on our notice depend on their delicacy of design, their beauty of colour, and the preciousness of their material; where "low walls spread before us like the pages of a book, and shafts whose capitals we may touch with our hands." Such is St. Mark's, which is further held up to us as being "less a temple wherein to pray, than a book of common prayer, a vast illuminated missal;" as being at once "a type of the redeemed church of God and a scroll for the written word of God; a glorious bible; the actual table of the law, and the testimony written within and without." Though this very graphic description builds up and presents to the imagination an edifice of vast historical interest, as most vividly reflecting the temper and spirit of a most interesting age and city, yet the rank of such buildings in the scale of architecture, it is evident, depends entirely upon the importance of that principle of colour or chromatic embellishment, to the embodiment of which every element of their construction refers; a principle we have high authority for looking upon as a very subordinate one in great works of architecture: I mean the authority of Nature, our prime instructress, whose teaching on the subject is so plain that he who runs may read it. Architecture is the art of the beautiful manifested in structure, of which, by its very nature as a structural art, *form* must be the dominant principle, the magic evoker of beauty; so that a building in which construction is made subservient to, and whose chief glory is colour, whether obtained by painting the surface, or by incrustation with precious and coloured material, cannot be a high order of architecture, if it be architecture at all, in the proper sense of the word. A building reared merely in reference to colour, must bear no higher relation to fine art than does the panel of a picture.

This partiality, however, of Mr. Ruskin is insufficient to account for his denunciation of the columnar architecture of Greece and Rome in the terms he has used; and the source of his determined hostility to it can only be sought in the gross error of confounding what are the corruptions with the essential elements of it; and, judging of the style by those buildings, and they are legion, in which there is scarcely a constituent member employed according to its original purpose in Greek architecture, he observes,—"It (Renaissance) differs from Romanesque work, in attaching great importance to the horizontal lintel, or architrave *above* the arch; transferring the energy of the principal shafts to the supporting of this horizontal beam, and thus rendering the arch a subordinate, if not altogether a superfluous feature. * * * And I might insist at length upon the absurdity of a construction, in which the shorter shaft, which has the real weight of wall to carry, is split into two by the taller one, which has nothing to carry at all,—the taller one being strengthened, nevertheless, as if the whole weight of the building bore upon it; and on the ungracefulness, never conquered, in any Palladian work, of the two half capitals, glued, as it were, against the slippery round sides of the central shaft."

This is a description, not of Classic architecture, such as it is in itself, and as I have above feebly endeavoured to picture it, and as it is indeed exemplified in some few modern buildings,—but of impure examples, corrupt manifestations of it; in which column and arch and other features are falsely treated; which they have been by the greatest architects of the Revival; from whose impure taste, or misconceptions, have arisen most of the defects of Italian and modern work generally; Brunelleschi, Bramante, Scammozzi, Palladio whose very name has formed a term in modern architecture, seem to have had no clear conception, or to have been oblivious of the true office of the column; and what is called the Palladian modification of Classic architecture is generally a corruption of it; for in such works unmeaning use has been made of its most important elements; and in Roman and Italian arcades columns were, indeed, used but as accessories to arches and piers, and the entire order degraded into a mere masque.

It is, therefore, true that this architecture in a majority of instances does not exhibit that obedience to the laws of its own constitution—that conformity to time and place, combined with fervour of fancy and imagination, that the Gothic builders delighted to set forth; it is too often conventional and dead, or false and meaningless; but it ought to be unnecessary to tell Mr. Ruskin that this is no disparagement to the style itself, and that it should be laid at the door of the architects, not of the architecture, which, like everything else, may be used and abused, employed truthfully and beautifully, or warped from its original intent and purpose, a sacrifice to ignorance or false taste.

The language of a people is none the worse for its having been employed in impure or vicious writing; we condemn the works of Tom Paine, but not the language in which he wrote. The English tongue has been used in illogical and stupid composition, but it is still the language of Milton and Addison; and the man of sense, instead of abandoning the language on this account, or weakly lamenting the corruptions of English literature, would simply endeavour to eschew those corruptions, and use it with propriety himself. Such would be the course pursued by the wise practitioner in reference to classical architecture, the real character of which remains untouched by any defect discoverable in the works of its professors; and the fact that the Renaissance architecture turned its back on all that was truly estimable in art, and refused to appeal to chords that are common to all hearts,—in

other words, aimed at a false standard of taste, is no reason why we cannot direct the same elements to the fulfilment of the true end of art—the production of living and genuine works.

What has the professor of the classic architecture who wishes to use it truly to do either with the faithlessness of the Renaissance school, or the lasciviousness of paganism, with their pride in knowledge or misuse of science? What is it to him that Michelangelo made vain and offensive exhibition of his anatomical skill, that learning has been abused, perspective overrated? To the fact, if it be a fact, of the Renaissance conviction that science was not the aid but the essence of art, and the chief thing to find expression in its works, all we have to say is, that it was a false one, and it is all we need say, for it does not in the least impugn the nobleness or plasticity of the style I am advocating.

The question is not what the Cinque-cento and succeeding architects did with the style they adopted, but what the Classic architecture is capable of. Whether it is *necessarily* "rigid, cold, inhuman, incapable of employing quaint fancy, rich ornament, bright colour, of conceding to the simplicities of humanity, and sympathising with men of ordinary minds." Whether to practise in it *naturally* and inevitably involves the preference of science to emotion, experience to perception, and the banishment from our work of all healthy invention: or presupposes that science and art are one and the same thing, that perspective, linear and aerial, perfect drawing, and accurate light and shade in painting, with true anatomy, are the first requirements in its ornamentation. These are the questions, and these Mr. Ruskin has left just as he found them. I believe, however, they are no questions in the mind of the architect who has a right acquaintance with the style: such a one knows that "feebleness of conception" is not necessitated by Roman lines; that "dexterity of touch" may consist with "tenderness of feeling," and "accuracy of knowledge" with "originality of thought." He knows, as by intuition, that this abused and belied architecture, while it can erect structures "requiring hewn stone and pillars in lordly order and stately size," can also accommodate itself to humbler offices, can irradiate the mountain cottage, and beautify the streets of the provincial town. For my own part, I believe there is no incense offered by our author at the shrine of the Gothic but what the Classic architecture might justly claim. I believe that in right hands it may have "fellowship with all hearts, and be universal like nature;" and while it can "frame a temple for the prayer of nations" far beyond any it has already framed, it can also "pierce itself with small windows* where they are needed," and even "shrink into the poor man's winding-stair."

Mr. Ruskin, who appeals generally to the common sense of his non-professional reader, may find too late that much of what he endeavours in these volumes to enunciate, common sense cannot so easily attain to as he imagines; as for instance, that pride is an essential element of the ancient architecture. That a Corinthian or Doric peristyle "must be inhuman," and "full of insult to the poor." Though he takes it for granted that the truth of what he asserts the general reader immediately feels, yet he may find it difficult to persuade plain men that the laying of a series of decorated posts to support a roof, is an exercise of infidelity. A citizen of London will be dull in comprehending that there is anything "unholy" in the grand aisles and dome of St. Paul's, or aught expressive of the "worst features of aristocracy" in Greenwich Hospital; as would a Liverpool burgess that the porticoes and chambers of St. George's Hall were worthless as "rotten rags."

Whether or not, it is to other than these I would appeal: the solution of this question must rest, not with unaided common sense, but with the cultivated and gifted architect. *He*, as I before hinted, will feel how far this architecture is capable of responding to the "Divine faculty," and of being moulded thereby to the multifarious and changing purposes of modern life. And this would have been known ere this to the world, by practical proofs; its capability of all artistic and rational variety, of embodiment of the subtlest laws of proportion, would have been manifested in the sight of all men, had not this architecture been studied historically and archæologically rather than philosophically.

It is true that Gothic architecture gives to the designer greater latitude than the Classic in the principle of proportion, as the latter system must be restricted mainly to proportion between burden and support, and is so far limited in its variations; whereas Gothic windows and buttresses admit of almost endless change in the relations of height and width; but the Classic architecture, while it is more systematic and definite, is not so limited in range of proportions by this necessity of reference to burden and support as may be supposed. By varying the weight of the burden, the diameter of the columns may be varied also, and to an extent abundant for all purposes of expression. And as to ornamentation, there is nothing to prevent its displaying the same force, vitality, and grace of floral decoration, gathered from the English field, as the best Gothic of the best age, and of combining along with truth to nature the fullest exercise of fancy and invention.

Gothic architecture is itself a standing proof of the vitality of the antique architecture—its power of receiving a new direction, and forming itself upon a new idea—a power and vitality but for which it would never have existed; for Gothic architecture is simply the Classic following the career of a new spirit, inspired by gable and pointed arch. Surely it will not be pretended that this was the only way in which it could have grown consistent with the conditions of truthful architecture; and that a beautiful system, plastic and progressive, might not be founded on the round arch and dome, in connection with the detached columnar ordinance.*

S. H.

* Gothic architecture is certainly not the only style that can do this. In a perfectly domesticated and Anglicised classic architecture, I am persuaded windows could be placed with the greatest irregularity, with no ill effect. The reason why windows hitherto could not be put just where they are wanted, irregularly, in Classic and Italian buildings is, that they have generally been expensive wherever placed. Let them be made beautiful in themselves, I mean chiefly with regard to their filling-up, and they may be placed anywhere. Mere holes in the wall would not look well in the Gothic or in any style.

THE BUILDINGS OF LILLE, IN FRANCE, AND THE ARCHITECTURAL SKETCHES THERE ATTRIBUTED TO MICHELANGELO.

The city of Lille has hitherto been more remarkable for the extent and strength of its fortifications, which were deemed a masterpiece of the great Vauban, than for its architectural monuments; for although its Hotel de Ville still retains some points of architectural and antiquarian interest, and some of the churches evince considerable elegance and skill in design, yet they do not boast any very remote antiquity, are not distinguished for their decoration, and its tallest spires and towers have been destroyed during sieges at various periods; the most disastrous of which was the nine days' bombardment by the Austrians in 1792, under the Prince of Saxe Teschen, which brought down some of its loftiest and proudest monuments.

There are two "*Places*" nearly together; one of considerable size, the other much smaller. Some of the streets are of tolerable width, and run in straight lines to the city gates. Many of the houses are attributed to the times when the Spaniards ruled the country, in the sixteenth and seventeenth centuries, and exhibit signs of affluence and ease; the fronts being much decorated with pilasters, enriched capitals, capriciously decorated doors and windows of the Italian taste and of heavy proportions.

There are six parish churches, three of which are Gothic. S. Maurice, the cathedral, is remarkable for its five aisles of equal height, divided by cylindrical pillars. The end is apsidal, the sides being formed into polygonal chapels, like those at Westminster Abbey. The effect of the various vistas of the interior is very striking, and the combination of the several parts produces most pleasing and effective groupings. The Church of S. Sauveur had once a noble stone spire with pierced tracery, but the cannon-balls of the Austrians brought it to the ground in 1792. The Church of S. Catherine, a Gothic structure, seemed to me peculiarly adapted for one of our churches, as it consists of a nave and side aisles divided by cylindrical pillars, which being twelve diameters apart, offer little obstruction to the sight. The Church of the Magdalen, of Italian design, has a central circular hall as it were, with a circular aisle around it, from which radiate the choir in an easterly direction, and corresponding chapels to the north and south, with considerable effect. The two other churches are those of S. André and the Jesuits, on the usual Italian model, divided by columns and piers, spacious, airy, and simple, and on a noble scale. In the last of these considerable appearance of extent is given by the end of the side aisles being painted to represent a distant vista: by this expedient great lightness of effect is given, and the deadness of a blank wall avoided, although it must be considered to be a somewhat meretricious expedient. There are several modern buildings of considerable importance, among which is a Lycée, of great extent of plan, now in course of erection, and the Hôtel de Ville, formerly the Palais de Rihour. So much of the old part of this edifice as now remains, is of the Gothic style: it was originally enlarged and completed in 1130, by Philippe le Bon, Duke of Burgundy and Count of Flanders, whose device of the flint and steel is gracefully introduced on the staircase, in the ornaments of the groined vaulting of the interpenetration character, the mouldings of which are very curiously interlaced. Besides this staircase there are few remains of the ancient fabric, which is now being superseded by the spacious and noble structure, rising from the designs of Mons. Benvignat. But there is still an old lofty hall with a groined ceiling, called the Salle du Conclave, which also contains some fine paintings, well combining with its architecture and fittings. Mons. Benvignat and the authorities have every disposition to retain these striking features of the old Palais, associated as they are with many historical circumstances, such as the holding the second chapter of the Golden Fleece in 1431; the meeting of Charles V. and our Henry VIII. in 1541, and with brief residences of Louis XIV. in 1670, and of Louis XV. in 1744.

The old Palais de Rihour was so generally dilapidated, that a few years ago it was determined to take it down, and erect on the site a new Hôtel de Ville; and the work was confided to Mons. Benvignat, who has designed it on an ample scale, with lofty storys, grand vestibules and halls, spacious staircases, and well-lighted picture-galleries. The columns are of the blue lias formation procured from Belgium, near Tournay, the shafts being monoliths, and the pedestals and bases also in single blocks of considerable dimensions.

The Museum, the City Library, and municipal offices are contained within this fine building. You will remember that on a former occasion, when I described the public institutions of Caen and Arras, I alluded to the noble munificence and public spirit with which the principal cities of France were endowed with institutions on a grand scale, and of a useful and intellectual character: and it must be acknowledged that, however detrimental the octroi may be considered to the commerce of a place, its revenues have procured to the leading cities of France, institutions and edifices which we may well envy them; and we can hardly hope that the merely permissive character of recent enactments in this country can ever realise such results as have been effected in France. A majestic staircase, adorned in part with casts from our Elgin marbles, leads to the Public Museum of Lille, which consists of seven rooms of noble dimensions, four of them containing some very creditable productions of ancient and modern painters, and copies of some pictures by Paul Veronese, Rafaelle, Rubens, Vandyke, and other leading masters.

But the most precious portion of these works of art is a collection containing about 1,200 original drawings; 197 attributed to Michelangelo, three to Leonardo da Vinci, sixty-eight to Rafaelle, thirteen to Masaccio, six to Andrea del Sarto, nine to Bandinelli, one to Paolo Veronese, one to Perugino, one to Gian. Bellino, eight to Annibale Caracci, two to Coreggio, seventeen to Carlo Dolci, ten to Fra Bartolomeo,

* To be continued.

fifteen to Francia, eight to Guercino, five to Ghirlandajo, three to Giulio Romano, one to Palma, five to Parmegiano, six to Poussin, two to Tintoretto, eight to Titian, two to Albert Dürer, three to Lucas de Leyde, one to Rembrandt, and one to David.

Many of these are apparently first sketches of pictures, which have since acquired the highest reputation, and show the gradual steps by which the great masters progressively improved the rude embryos of their first thoughts; and in order to compare the original ideas with the finished works, there are engravings of the pictures as completed. Some are in pencil, others in black or red chalk, and several in bistre. A most lovely model in wax, attributed to Rafaelle, of a female head the size of life, coloured to nature, the contour, pose, and expression of which recal the perfection of Greek art, rivets the attention of every visitor. It is fractured in the neck, and evidently is of so frail a nature, that, however anxious has been the desire to take a cast, the success seems too hazardous to justify the attempt. The drapery covering the bust, and the pedestal, are of terra-cotta of a later period. I consider this the gem of the collection.

To architects, the most precious portion of the drawings, is a series of 185 sketches of architectural subjects, attributed to the pencil of Michelangelo. They are now mounted in glazed frames, so arranged as to show both sides of the sheets, as they originally were in a sketch-book, and with drawings on both sides, the size 8 inches by 5 inches. They are generally drawn in bistre, and the plans tinted with a light shade of that colour. To some there are dimensions: others have the words *a discretione e no e misurato:* sometimes the word *anticho* is added. They consist of plans, sections, details, and some few elevations, of various ancient and modern buildings. Among the former are the arches of Titus, Septimius Severus, Janus, and Constantine, at Rome; of Augustus at Pola, in Istria; a plan and details of the Coliseum. Some seem to be plans of sedicula or tombs, like those then abounding in the Campagna; and I find No. 439 to be identical with the plan of plate 24 of Montano's "Scelta di varii Tempietti Antichi." There is a sketch in pencil of the drum, under the cupola of S. Peter's at Rome, as designed and executed by Michelangelo, with the abutment piers and coupled engaged columns, instead of the continuous colonnade of previous designs, whether by Bramante or S. Gallo; and above are some loose lines in pencil indicating the dome, though not very definitely, and more like the Pantheon than S. Peter's. There are several drawings of the parts of the Church of S. Pietro in Montorio, which was designed and built by Bramante, the contemporary of Michelangelo and uncle of Rafaelle; and many sketches of the Baptistery at Florence, of the Lantern of S. Lorenzo, a plan of the Chiesa degli Angeli by Brunelleschi, and other buildings in that city, and particularly of the Medicean Library, designed and almost entirely executed by Michelangelo, but completed by Vasari, to which I shall again more particularly allude. There are sketches of vases, arabesques, pulpits, and groups of trophies of ancient Roman armour.

During the short period of time that I was enabled to devote to the careful examination of these drawings, I sketched off some of the plans. One of these gives a restoration of the Ruin in the Campo Vaccino, known as the Temple of Peace, or as our friend Mr. Burgess, and other antiquaries call it, the Basilica of Constantine. It gave rise to some discussion, when Mr. Burgess favoured the Institute during the last session with his instructive paper on the ancient Basilica and early Christian Temple. The sketch contains these original remarkable words upon it in Italian ("Questa una pianta d'una chiesa moderna no so di chi sia mano"): "This is a plan of a modern church by I know not what hand." Now the restoration of this ruin, as you are aware, has puzzled antiquaries and architects from the time of Serlio to that of Palladio, and down to the present period. Its name, its destination, and its plan have been a constant enigma; but it appears stranger still, if Michelangelo be the author of these sketches, that he should copy the idea of another, call it a modern church, and say he knew not by what hand, when from his constant residence at Rome, he must have had a thorough knowledge of the pile, whose three arches rise with such majestic grandeur among the ruins of the Campo Vaccino, and his eye, familar with the building, must have recognised at once an adaptation and not a "*chiesa moderna.*" A curious coincidence is, that he himself, whether before the date of this sketch or after it is impossible to say, converted a similar hall in the Baths of Diocletian to the purposes of religious worship. The church, a majestic one from its size and simplicity, is known as the Madonna degli Angeli, and is interesting also to artists as containing the tombs of Carlo Maratti and Salvator Rosa: the grand hall is 198 feet long by 84 feet wide, independently of the end chapels, which give an additional length of 65 feet each, making a total length of 328 feet. These measurements were taken by Mr. Hardwick and myself, when we were together in Rome in 1818.

This sketch suggests many remarkable considerations. It omits the large lateral niche; it fills in small columns between the large arches of the nave, and thus decidedly separates the central nave from the side aisles; it adds small columns to the niches, as though each had a tabernacle, as in the Pantheon, a very probable conclusion. But the most important circumstance is the addition, at one end, of a noble portico of large proportions; where from the time of Serlio to the present period, comprehending Palladio and Canina, the space is supposed to be occupied by a paltry arcade. As such a feature is irreconcileable with the broad treatment of the rest of the edifice, and considering the arcade to be a construction of more recent times, it seems more consistent with the true spirit of the original design to give it a more dignified façade than that of Palladio or Canina, so as to be accordant with its size and disposition, maintaining its importance with the Temple of Venus and Rome immediately adjacent, and the other magnificent buildings of the Roman Forum, to which it is contiguous.

Our friend, Mons. Hittorff, to whom I sent a copy of this sketch, has called my attention to the similarity between the plan of this portico and that of a portico to S. Peter's, attributed to Michelangelo; they are placed side by side on one of the illustrations now exhibited, the only difference consisting in the number of the columns,—the one being for a tetrastyle, the other for a hexastyle portico, and the projection of the porticoes being respectively two and three intercolumniations. But our distinguished honorary and corresponding fellow calls attention to another suggestion presented by the plan, which forcibly revives an early impression upon his mind, that the primitive plan of S. Peter's at Rome, as designed by Bramante, consisting of a simple Greek cross, and divested of its superfluous accessories, would seem to have been suggested by the plan of this ruin, with which in its main lines and features it palpably corresponds.

Such are some of the speculations which arise from the contemplation of this plan and the startling words—"*Chiesa moderna no so di chi sia mano.*"

I shall not perplex you nor myself by any lengthened speculations upon the real character and destination of this edifice. Its plan is wholly at variance with the type presented in any known temple of the Greeks or Romans: hence the name of Temple of Peace seems inappropriate. Its plan is no less discordant from the precepts of Vitruvius, or any other basilica in ancient Rome: hence the term Basilica of Constantine would remove it from the usual basilican canon; and experience does not teach us that the Romans of later times departed very materially or radically from established previous types. But its vicinity to the Domus Aurea of Nero makes me inclined to consider it as a vestibule to that noble palace, partially saved from the conflagration, restored, added to by Maxentius, and possibly christened with a new name in periods much subsequent to its original erection.—And now *requiescat in pace.*

The next sketch, to which I invite attention, is that of the plan of the vestibule to the Medicean Library at Florence. Those who have visited that building will remember the vestibule, and its strangely planned flight of steps leading up into the library: and they will recal the columns sunk in the walls, and other grotesque mixtures of heterogeneous forms in the details, which fully bear out what Vasari says of Michelangelo,* and who thinks to praise the master for having "composed a decoration of" what he calls "a richer and more varied character than had ever before been adopted, either by ancient or modern masters. The beautiful cornices," says he, "the capitals, the bases, the doors, the niches, were all very different from those in common use, and from what was considered *measure, rule, and order by Vitruvius* and the ancients, to whose rules *he would not restrict himself.* But this boldness on his part has encouraged other artists to an injudicious imitation, and new fancies are continually seen, many of which belong to '*grottesche,*' rather than to the wholesome rules of ornamentation. Artists," continues Vasari, "are nevertheless under great obligations to Michaelagnolo, seeing that he has thus broken the barriers and chains whereby they were perpetually compelled to walk in a beaten path, while he still more effectually completed this liberation, and made known his own views in the Library of San Lorenzo, erected at the same place. The admirable distribution of the windows, the construction of the ceiling, and the fine entrance of the vestibule, can never sufficiently be extolled. Boldness and grace are in the work as a whole, and in every part: in the cornices, the corbels, the niches for statues, the commodious staircase and its fanciful divisions,—in all the building, at a word, which is so unlike the common fashion of treatment, that every one stands amazed at the sight thereof."

The Medicean family having collected a vast quantity of very fine manuscripts of the classic authors, from the Greeks who had been driven from Constantinople, and from other sources, were anxious to provide a receptacle worthy so rich a treasure.† Clement VII. one of the Medicean popes, was desirous of establishing memorials to his fame in sculpture, painting, and architecture, as Leo and his other predecessors had done. This was about 1625, and Michelangelo was summoned to Florence to design the library, to be called that of San Lorenzo, with a new sacristy to the church, wherein the Pope proposed to erect the marble tombs of his forefathers,‡ two to enclose the remains of the fathers of the two popes, Lorenzo the elder and Giuliano his brother, with those of Giuliano, Duke of Nemours, the brother of Leo, and of Lorenzo, Duke of Urbino, his nephew.

Eight years afterwards, in 1533, Pope Clement died,§ when the works then proceeding at the library and sacristy in Florence, which, notwithstanding all the efforts made, were not yet finished, were at once laid aside. Towards the middle of 1555, during the time of Paul III. "Duke Cosimio had sent Tribolo to Rome, to try if he could persuade Michelagnolo to return to Florence, there to finish the sacristy of San Lorenzo; but the master had excused himself, saying, that he was become old, might no longer endure the fatigue of labour, and could not leave Rome. Tribolo then inquired as to the steps for the library of San Lorenzo, for which Michelagnolo had caused many of the stones to be prepared, but for which no model nor any certain indication of the form in which they were to be constructed, could be found. It is true, that there were some few sketches of a pavement and other things in terra, yet the correct and final design of the work could not be ascertained. But not all the entreaties of Tribolo, although he brought in the name of the duke, could move Michelagnolo to say more than that he did not remember. The duke then commanded Vasari to write to the master, since it was hoped that for the love of him, Michelagnolo would perhaps say something which might enable them to bring the work to conclusion. Vasari wrote to him accordingly as the duke desired, adding, that of all which had to be done Vasari was to be the director, and

* Vasari's Lives, translated by Mrs. Foster, vol. v. p. 222.
† Page 271. ‡ Page 270. § Page 284.

would do everything with the utmost fidelity, taking care of every minutia, as of a work of his own. To this Michelagnolo replied by sending the plans for the work in a letter, written by his own hand, on the 28th September, 1555. 'Messer Giorgio, my dear friend,—About the staircase, whereof there has been so much said, believe me, that if I could remember how I had arranged it, I should not require so many entreaties. There is a certain stair, that comes into my thoughts like a dream; but I do not think it is exactly the one which I had planned at that time, seeing that it appears to be but a clumsy affair: I will describe it for you nevertheless. I took a number of oval boxes, each about one palm deep, but not of equal length and breadth. The first and largest I placed on the pavement, at such distance from the wall of the door as seemed to be required by the greater or lesser degree of steepness you may wish to give to the stair. Over this was placed another, smaller in all directions, and leaving sufficient room on that beneath for the foot to rest on in ascending; thus diminishing each step as it gradually retires towards the door; the uppermost step being exactly of the width required for the door itself. This part of the oval steps must have two wings, one right, the other left. The steps of the wings to rise by similar degrees, but not to be oval in form. The ascent by the middle flight, from the centre to the upper part, shall be for the Signore: the turn of the wings must be towards the wall. But from the centre downwards to the pavement, they shall be kept at the distance of about three palms, in such sort that the basement of the vestibule shall not be infringed upon in any part. What I am writing is a thing to be laughed at, but I know well that you will find something suitable to your purpose.'"*

In a brief conversation on the subject, which I had with Monsieur Benvignat, the architect, of Lille, he gave it as his opinion, that the sketch exhibited in the Wicar collection is the original idea of Michelangelo; that he had lost the book, and forgotten this his first conception. But the sketch is equally at variance with the master's letter just quoted, and the staircase as executed. The sketch presents an oval series of steps, half without and half within the door of the library; but the number would not have accomplished half the height to which it was necessary to rise; and although oval, like the boxes alluded to by Michelangelo, there are no side steps.

So restricted is the vestibule, that the intrusion upon the space of the floor, by the capricious form given to the flight as executed, leaves very inadequate room for the landing at the bottom of the stairs; and if any method could have been devised of gaining space by making some of the steps rise within the doorway, much convenience would have been gained. I am inclined, therefore, to think that this sketch is a slight idea of Vasari's, founded upon some vague rumour of Michelangelo's arrangement, to try how it could be carried into execution, before he had received the master's formal instructions.

This brings us to the consideration of the important question, who was the real author of these sketches? My own impression is, that *the whole book* may be attributed to Vasari himself—that all the sketches of the library, of the Cupolino of the Sepulchral Chapel, and of the other details of Michelangelo's work, were taken for his own guidance, or for the purpose of sending off copies to the master, to enable him to give the proper instructions to direct Vasari's proceedings in the completion of the buildings confided to his care.

The sketches generally are executed with a certain ready freedom of hand and no great care; but some are drawn with much delicacy and with considerable precision and minuteness of form. Hardly more than two or three evince that bold and vigorous freedom of treatment, which we are accustomed to consider as characteristic of the maestro, as Vasari repeatedly calls him. One circumstance particularly struck me, and that was, the numerous sketches of the circular chapel built in the cloister court of S. Pietro a Montorio, by Bramante. This building excited vast admiration at the time, and Serlio himself gives the plans, elevations, and sections of it in his work next to those of the cupola of S. Peter's, and among the numerous illustrations of ancient buildings, and Palladio also gives it among his ancient edifices. Other writers of the time mention it with unqualified praise. It would, therefore, be no wonder if a Vasari, who was employed upon designs and models for tombs at S. Pietro a Montorio, by order of Julius III. should have sketched parts and kept a record of such details. But that Michelangelo, who despised the trammels of *ancient art*, should condescend to the task of minutely drawing the work of a cotemporary, and that cotemporary no friend of his, but the uncle and supporter of his rival Rafaelle, and one who crossed him in his great work for the tomb of Julius, seems beyond probability, however noble were many impulses of Michelangelo's generous nature. I am given to understand that many French artists, who have visited the Wicar collection, concur in my opinion as to the propriety of not attributing this collection of sketches to Michelangelo; and a distinguished member of the French Institute, a great amateur and connoisseur, assures my friend Hittorff, that he had traced the writing on some of these drawings, and that it did not at all accord with that of the great master. I am therefore confirmed in the conviction, that these architectural sketches are not the production of Michelangelo.

I shall now notice a letter from François I. to Michelangelo; but before I put you in possession of this most precious of the treasures of the Wicar collection, it is necessary for me to give a few particulars of one, to whom it refers, and which I shall do by quoting another passage or two from Vasari. Francesco Primaticcio was sent by the Duke Frederigo of Mantua to France, at the request of Francis I. who, having heard of the decorations, with which he was adorning the Palazzo del T, desired to have an able artist to execute like works for him at Fontainebleau, and elsewhere. Primaticcio, according to Vasari, was the first to paint frescoes of any account for the French king, and we all know how admirably he succeeded in the great and superb ball-room at Fontainebleau:—

"King Francis, being much pleased with the conduct and proceedings of Primaticcio, sent him in 1540 to Rome, he having put the wish, according to Benvenuto Cellini,† into that monarch's head to possess antiques. He purchased several antiques in marble, and served the king so diligently, that what with heads, trunks, and entire figures, he bought in no long time 125 pieces. At the same time Primaticcio caused Barozzi da Vignola and others to copy the bronze horse of the Capitol, the greater part of the relievi of the column (probably Trajan's), the statue of Commodus, the Venus, Laocoon, the Tiber, the Nile, and the statue of Cleopatra, which are in the Belvedere, and all which were to be cast in bronze."

"Being recalled to Paris, he returned immediately. But, before attending to any other occupation, Primaticcio caused the greater part of those antiques to be cast, when all succeeded so well, that they might be taken for veritable works of antiquity, as may still be seen," says Vasari, "in the queen's garden at Fontainebleau, where they were placed to the great satisfaction of King Francis, who may be said to have there made another Rome."

"The king, perceiving that he had been well served during the eight years that Primaticcio had been with him, appointed the painter to be one of his chamberlains. And shortly after (in 1544 that is to say) his majesty made him abbot of S. Martin (at Troyes)."

The document which rendered necessary these preliminary remarks, is as follows:—

Sr Michelangelo pourceque jay grant desir davoir quelques besognes de vre ouvrage jay donne charge a labbe de Sainct Martin de Troyes pñt porteur que jenvoye pardela den recouvrir vous priant si vous avez quelques choses excellentes faictes a son arrivee les luy voulloir bailler en les vous bien payant ainsique je luy ay donne charge Et davantaige voulloir estre contant pour lamour de moy quil molle le christ de la Minerve* et la fire dame de la febre† affinque jen puisse aorner lune de mes chappelles comme de chose que lon ma asseure estre des plus exquises et excellentes en vre art. Priant dieu Sr Michelango (sic) quil vous ayt en sagarde. Escript a Sainct germain en Laye le VIIIe jour de feurier my^c xlv.

FRANCOYS. DELAUBESPINE.

No. 199.

This letter proves that Primaticcio must have made a second visit to Italy for the purpose of collecting more works of art; and its truly princely sentiments evince the taste, the liberality, and high-minded generosity of a real lover of the fine arts. How fortunate has France been for three centuries in having princes who felt that the fine arts can contribute essentially to the refinement, the happiness, and prosperity of a nation. This spirit has endowed Fontainebleau, Paris, and Versailles with the masterly productions of the greatest minds in Italy and France. The lower orders have their enjoyments in common with the princes, the nobles, and gentry of the land; and they grow up imbued with the love of that art, which is so mixed up with their holiday enjoyments, that it becomes a necessity, as it were, from their being used to it from their earliest years; and they are thus unconsciously educated by the contemplation of the finest works. How far are we in this respect behind our neighbours. The gardens of the Tuileries have no parallel with our royal residence of Buckingham Palace; and Fontainebleau puts to shame the courts, and terraces, and gardens, and walks of Windsor Castle, which contain hardly a single statue, group, or fountain, or other art-accessories of any consequence, and appear cold and meagre, and poverty-stricken, from the want of such accompaniments; so niggardly and deficient in art-feeling have those authorities been, who have hitherto had to provide for the palaces of our sovereigns, and the places of public resort for the people. Often was François I. thwarted by his ministers in his munificent desire to promote the fine arts, but he was not to be turned away from an object which he knew would gratify his people and ennoble his country. And well has this noble spirit been rewarded for his early enlightened cultivation of the fine arts, for his example has been followed by the continued munificence of succeeding monarchs and ministers, which has produced that superiority in the art-productions of their manufactures, which enables them to compete so successfully with the mere mechanical skill and industry of other nations.

Michelangelo has been the main topic to which I have been so bold as to claim your attention; and surely his position as an artist claims for him the respect and admiration of every painter, sculptor, and architect. And although he was a great innovator in architecture, and introduced a license which was most pernicious to the art, yet we cannot but recollect that we owe to him the simplicity of design, to which he reduced the cupola and other decorations of S. Peter's, which had been sadly corrupted by the immediate successors of Bramante, whose original conception had been lost. Vasari mentions ‡ that "while Antonio San Gallo lived, Pope Paul had permitted him to continue the building of the Farnese Palace. But the upper cornice on the outside was still wanting; and his holiness now desired that this should be added by Michelangelo, after his own design and under his direction. The master, therefore, not willing to disoblige the pope, who esteemed and favoured him so much, made a model in wood seven braccia long (13½ feet), and of the exact size which the cornice was to be. This he caused to be fixed on one of the angles of the palace, that the effect might be seen; when, as the pontiff and all Rome with him were much pleased therewith, it was put in

* Gaye, in his "Carteggio," makes it doubtful whether Vasari finished these steps or not; and a Florentine commentator says, "Although Michelangelo had left the steps, the balustrade, and many other parts of this work in a state of preparation, it is manifest that Vasari did not, succeed in comprehending the master's wish. He constructed a magnificent flight of steps, without doubt, but not that intended by Michelangelo."—See Ruggieri, "Studio d'Architettura Civile;" also Rossi, "Libreria Mediceo Laurenziana."

† "Vita," vol. ii. p. 131, Ediz. di Milano, 1811, 8vo.

* This celebrated statue is still preserved in the Church of the Minerva, near the Pantheon, Rome.

† This statue was, according to Vasari, executed for the Cardinale di S. Dionigi, to put in old S. Peter's, in the Chapel of the Virgin Mary of the Fever. I have made ineffectual inquiries to ascertain precisely where this statue is. Mons. Hittorff thinks it the Madonna della Pietà, the cast of which was in one of the chapels of Fontainebleau up to the time of the Revolution. Probably it may be the Pietà of S. Peter's of Rome, re-named after that time of Vasari.

‡ Vasari's Lives, translated by Mrs. Foster, vol. v. pp. 266-7.

execution, proving to be the most beautiful and varied cornice ever erected, either by the ancients or moderns.* He continued the great court also, constructing two ranges of columns over those first erected, with the most beautiful windows, and a great variety of rich ornaments, ending with the great cornice; all of these works being so beautiful, that this court by the labour of Michelangelo has now become the finest of all Europe."

You will doubtless remember the beautiful picture by Haghe in the New Water-colour Exhibition of the year 1848, representing Michelangelo, himself an old man, nursing by his midnight lamp his faithful servant Urbino, who was ill, his master sleeping at night in his clothes beside him, the better to watch for his comforts. Vasari gives the following touching letter written to him by Michelangelo on this occasion:—"My dear Messer Giorgio,—I can but ill write at this time, yet to reply to your letter I will try to say something. You know that Urbino is dead; and herein have I received a great mercy from God, but to my heavy grief and infinite loss. The mercy is this, that whereas in his life he has kept me living, so in his death he hath taught me to die, not only without regret, but with the desire to depart. I have had him twenty-six years, have ever found him singularly faithful, and now, that I have made him rich, and hoped to have in him the staff and support of my old age, he has disappeared from my sight; nor have I now left any other hope, than that of rejoining him in paradise. But of this God has given me a foretaste, in the most blessed death that he has died: his own departure did not grieve him (so much) as did the leaving me in this treacherous world with so many troubles. Truly is the best part of my being now gone with him, nor is anything now left me, except an infinite sorrow. And herewith I bid you farewell."

I have been insensibly led, by the interest which attaches to the talents and character of this great man, to depart from the immediate subject of my paper, and to conclude my remarks by an allusion to his works at the Farnese, and by the contemplation for a moment of the affecting incident which lays open the inmost soul of Michelangelo, and shows him with the tenderest regard as a kind master, and the finest feelings of the most pious resignation in the contemplation of his own not far-distant end,—as exemplary as a Christian, as he had been eminent and admirable as an artist. But I will now conclude, and trust that I may not be considered too presumptuous in so boldly offering my opinion as to the authorship of these architectural sketches. Whosesoever they may be, whether Michelangelo's, or Vasari's, or any other artist's, they are extremely curious and interesting in the history of our art. I hope that none of my professional brethren, who have not yet seen these drawings, will now pass through Lille without visiting this fine collection. They will then, in addition to the delight they will experience in seeing the masterly thought-renderings of other great men, be enabled to judge for themselves, and to decide whether I am wrong or right in hesitating to attribute to the mighty Florentine these architectural sketches, which well deserve the minutest attention from every lover of architecture. T. L. Donaldson.†

HOUSES FOR THE VERY POOR.

Model lodging-houses already erected have proved that the well-paid of the industrious classes can be comfortably lodged at rents within their means; but hitherto no provision has been made for housing either the *very* poor, or the numerous industrials whose weekly earnings are under eighteen or twenty shillings a week; yet the need for wholesome lodgings for such persons is becoming urgent, in consequence of such great improvements of the metropolis as those of New Oxford and Victoria streets, which have dislodged a vast number of persons without provision of any substitute for the old habitations; hence, houses already crowded are made to receive a greatly increased number of inmates. To mitigate this evil in regard to the *very* poor, outlines of a plan were, some months ago, submitted in a high quarter, and a copy of that proposal is herewith inclosed, in the conviction that, should it appear in the *Builder*, philanthropists, whether in combination or individually, might be induced to erect common lodging-houses of some such description as therein indicated.

But though that plan had in view the housing of the *very poor*, it could not be suitable for the meritorious persons of slender earnings, but who would rejoice could lodgings be afforded them at a low rent, which would give the means of cleanliness, decency, privacy, and comfort—lodging-houses intermediate between the common ones proposed and those that are denominated model lodging-houses. For such a description of intermediate lodging-houses it would seem desirable that all accommodations should be afforded that are really essential, though without any superfluous ones, or unnecessary space in either living or bed rooms, or providing other than the cheapest means of ventilation, warmth, and cookery.

To obtain the above-desired ends, it would seem essential that each family should have its distinct set of small apartments: they might consist of an entrance-lobby, a sitting-chamber, a separate space for the parents' bed, a bedroom for girls, and another for boys.

In proceeding to details, it should be kept in mind that cheapness is sought, not superfluous space, and that for healthful ventilation space is not requisite, but change of air, removing that which is vitiated by respiration or otherwise, and supplying its place with air that is uncontaminated. It must also be observed that cooking and washing are amongst the most prominent causes of dirt in ordinary lodgings, and therefore it is that these processes are proposed to be carried on in appropriate, but separate, kitchens and washhouses—not in the lodgings themselves.

The essential parts of the contemplated structure should be fireproof; the beams at least iron, walls and partitions brick: better that the interior of the latter should be glazed, or faced with slate, this being cleanlier than either whitewash or paper. A general system for warming, ventilating, and lighting the several apartments, to be provided from the first. To avoid the dirt and other nuisances consequent on in-door staircases and corridors, the several apartments would best be entered from outside open galleries, say 3 or 4 feet wide, quite ample as a passage, yet not wide enough for an upper one to keep the sun from the apartments below, especially during the winter months. Each apartment itself would suffice if the interior were 12 feet wide, 14 feet deep, exclusively of partitions: it might consist of an entrance-lobby, 4 feet square, from which a door to a sitting-room, 8 feet square: the 4 feet behind the lobby would be for the parents' turn-up bedstead; the anterior of the apartment, having a borrowed light from the sitting-room, 6 feet deep, divided by a narrow passage from front to back into two separate bed-rooms, the one for boys, the other for girls.

With a view to economy in building, two sets of apartments might be erected back to back, each set having its entrance-galleries; the structure being four or five storys high, besides a half-sunk basement story.

Thrifty families being averse to observation of what they consume at meals, it is supposed that they would be eaten privately in the sitting-rooms; but as provisions of all kinds can be most economically both purchased and cooked in large quantities, no fire-places are provided in the apartments; but the lodgers would find it both cheaper and cleanlier to purchase their provisions ready prepared by a competent cook in a kitchen in the basement: a fixed price for each week might be set for the several articles provided, and even some one of the lodgers might be appointed as supervisor of culinary proceedings.

For most perfect ventilation and warmth at pleasure in the apartments, an apparatus in the basement story to warm and ventilate the whole of the lodgings. It should include *extractors* for drawing out vitiated air, and pipes for supplying fresh air in lieu of that extracted; the fresh air, either heated or cold, according to the season. Both extracting and the supply-pipes should enter into every division of every apartment, and be furnished with slides to regulate the quantity of air extracted or supplied, at the pleasure of the inmates; provided, however, that neither the one nor the other could be entirely cut off. This part of the project would ensure a degree of ventilation and of warmth rarely, if ever, attainable in the lodgings or houses of industrial persons, or even in model lodging-houses, or in those of wealthy individuals.

As to laundries and baths, those that are in activity testify their value, and the appreciation of them by the people. Baths and washhouses in the proposed structure would be more convenient to its inhabitants than if in a separate building, but so much show has already been displayed in those established, that details respecting their construction are superfluous; yet it may be observed, that in connection with a kitchen and heating apparatus, both baths and washhouses would admit of being opened for use at such times only as would best suit the convenience of the lodgers.

Instead of the expense of furnishing every apartment with water, a supply of it at the centre of each floor would be sufficient, seeing that neither the washing of apparel nor the scouring of kitchen utensils would have to be done in the apartments. So at one end of each gallery might be a closet for men, at the other end one for women,—an arrangement which would preserve the apartments from the odours inevitably attendant on closets within small apartments.

It seems needless to add that the proposed apartments would be particularly suitable for joint occupation by two single women, who earn a scanty livelihood by needle-work, as, for instance, those employed as journeywomen by milliners, mantua-makers, upholsterers, &c.

The plans for these "intermediate," as well as for the "common lodging-houses," have been formed on data left by a late eminently-successful officer in the public service: he proved that buildings entirely fire-proof could be erected at a less cost than according to the usual modes. It is not attempted here to give precise estimates, though it has appeared that the proposed apartments would give a fair return for the capital expended on them, supposing each apartment to be let for half-a-crown a-week,—ventilation, water, and artificial heat included in that same, were it paid weekly in advance. Lodgings for the poor in ordinary buildings pay better than any other head of house property; why should not the proposed "intermediate" and "common lodging-houses" be equally remunerative?

COMMON LODGING-HOUSES.

It appears that a common lodging-house, which its proprietor can let for 25*l.* a year, brings in to the under-tenant no less a sum than 120*l.* per annum: this affords conviction that lodging-houses on the plan below suggested would be self-supporting, although the charge for a night's lodging should be no more than one penny, or 6d. for a week if paid in advance, and that various accommodations were provided that are incompatible with common lodging-houses as they are at present.

The effects sought to be produced by the proposed plan are:—

1. Isolation of the lodgers, excepting in the case of married persons or families.
2. Extreme cleanliness of lodging.
3. The affording means of personal cleanliness at little cost, but optional, however, on the part of the lodger.
4. Complete separation of the sexes, unless in the case of married persons, and of young children.
5. Supervision of the lodgers, but without annoying them with individual inspection.
6. Classification of lodgers in some degree.

In this view it is proposed that a model building should be erected, differing in many particulars from any other that has been hitherto built, though adopting all parts of existing structures that are suitable. The proposed building fire-proof throughout; its skeleton, therefore, of iron, as the cheapest metal,—cast

* The cornice to the Strozzi Palace at Florence must have suggested to Michelangelo the grandiose character of that of the Farnese of Rome.

† The foregoing is the paper read at a meeting of the Royal Institute of British Architects previously noticed.

for parts having to resist pressure, wrought iron; cast tension; walls, floors, and ceilings, all of slate, with a view to cleanliness and the avoidance of damp.

Seeing that cheapness of lodging is a first-rate desideratum, the space allotted to each single person need not exceed a length of 6 feet by a width of 2 feet for the bed, with an addition of 18 inches beside it. No two lodgings to communicate with each other, excepting in the case of married persons or families. All lodgings to be entered from an exterior gallery, which need not exceed 2 feet in width.

This being the general outline of the proposed lodging, it is evident that a single set of them would be both unstable and too costly; but a double set of such lodgings, back to back, would, with their respective galleries, give a width of 16 feet, exclusively of walls. This double set might be connected with a similar one, leaving a chasm for air and light between the two; the connection being made by iron ties serving as beams, and carried from the front of one set of lodgings to the front of the other.

An iron grating might suffice for the galleries, and a slighter one to support the floors—the floor of one story serving for the ceiling of that below it. The partition walls might be formed of perpendiculars of iron, cast with grooves to admit of the slipping slates into them—the iron, of course, galvanized to prevent rust. Slate is the only material to be procured at a cheap rate in large slabs, which can be easily washed without absorbing moisture during the operation—slate is on this account indicated, although late improvements in our potteries may enable them to furnish glazed tiles of large dimensions. It would be essential that the walls of the lodgings should be in large slabs to avoid recesses in which vermin could harbour.

Many arrangements would be desirable for the promotion of cleanliness. The bedding of each floor might with little trouble be daily placed in an appropriate chamber furnished with racks to support the mats and keep them apart: they might be there either fumigated or steamed so as to destroy vermin, and the germs of contagion: if steamed, the bedding might be dried by the charge of a current of hot air through the chamber. The further purification that would from time to time be requisite, might be given in an appropriate washing machine. The lodgings themselves being of slate, might be even daily washed by means of a sort of mop; ceilings and walls, as well as floors. Lodgers, the most filthy, would soon feel the comfort of a clean room and bed, and of being freed from the insects that infest the present common lodging-houses; so that it might reasonably be hoped that this in many instances would lead to improvement in personal cleanliness.

It could not be expected that such model lodging-houses would at first be sought by the very depraved of either sex; but it must be called to mind that many virtuous individuals are driven by poverty to seek shelter in the ordinary ones—that they there lose all sense of modesty and shame; nay, too often are initiated in vice and guilt. To save those of this description from contamination, would seem of itself an ample reward to the philanthropists who might establish such cheap and wholesome refuges for the guileless laborious poor—the poor of both sexes, who by necessity, not choice, are driven to earn their morsel by such low callings as hawking caps or paper. M. S. B.

Building Accidents.—The boarding of a scaffold round the tower of St. Matthew's Church, Bedford New Town, gave way on Monday last, under the weight of a heavy stone, together with that of six persons, who stood too much in the centre at the same time. Strange to say, although at an altitude of 70 to 80 feet, all who fell to the ground escaped with slight injuries, except one poor fellow, who was shockingly mangled. Another clung to a rope as he fell, and was extricated without injury.——An inquest is being held at Plymouth on the bodies of five boys, who were killed by the sudden fall of two houses in Southside-street there, on Thursday in last week. Several other boys were more or less injured at the same time. From what we can learn, the houses seem to have been sold for building materials, and had been partly taken down when the accident occurred.

MR. RUSKIN'S LECTURES.

The third lecture given by Mr. Ruskin in Edinburgh was devoted to Turner and his works, and, looking to the local newspapers, we find the lecturer commenced by mentioning two notable characteristics of Turner—his industry, and the great pains he bestowed on everything which he did, for whatever purpose it was intended, or whatever its price. During his earlier career he devoted himself extensively to copying the pictures of others, making himself master of their peculiar styles, and showing that he could equal and even excel them upon their own ground. The period however came, when he felt his superiority, and resolved to assert it; and this period was definitely marked by his publishing a series of engravings, which were nothing less than a direct challenge of Claude on his own terms and on his own ground. The series, denominated "Liber Studiorum," was in direct imitation of Claude's "Liber Veritatis"—long considered to be a masterpiece of landscape art. Before proceeding farther with his remarks on Turner, the lecturer gave a sketch of the different schools of painting up to the present time. The fourteenth century was the age of thought—the age of Dante and Giotto. The men of the following century—the fifteenth—felt that they could not surpass their predecessors in invention, but that they could immeasurably in execution; and they did so. This, then, was pre-eminently the age of drawing—it was the age of Leonardo, Michel-angelo, Lorenzo Gioberto, and Raphael; and yet it must be recollected that these great men borrowed their principal ideas from the former century, and that it was a rare thing to find in them an original thought. The sixteenth century was the age of painting; and it was distinguished by four names—Corregio, Titian, Paul Veronese, and Tintorett—the greatest colorists the world had ever seen.

For a long period landscape was necessarily neglected. It was the last thing thought of; and the most difficult thing to do; because it required a knowledge of botany and of many sciences which were merely in their germ; more especially perspective, in order to enable the artists to express themselves properly in landscape, was wanting. In the beginning of the thirteenth century, the landscapes first took a superior form to that which they had had in Missal-painting. The school of Leonardo introduced a considerable alteration, the main difference being the introduction of an exquisite variety of colouring, the distance being kept blue, not in the sky merely, but by aërial perspective; and the plants in the foreground executed with a finish that nothing could ever surpass; but they could not paint rocks or mountains. The great innovator on this school was Titian; his mountains were much closer to nature than those of anybody else; his forests he freed from all conventionality, and brought out in most perfect majesty of foliage, painting the bramble and the daisy and the rose, all with their perfect flowers, but freely and easily, as Nature threw them out upon the ground: the accuracy with which he followed the outlines of the stems of trees was very great. The three great schools, then, which he had enumerated, might be termed the Giottesque, the Leonardesque, and the Titianesque. The course of the mind of Europe was to take a fourth step, to rid landscape of all conventionalities, and to make nature the principal subject of study. The step was taken by Claude and Salvator; but it was taken in a paralysis, so that more lost than was gained. There was a great gulf, full of nonentities and abortions, a gulf of foolishness, into which they might throw Claude and Salvator. Out of this a new school arose, a modern school of landscape: and if a name was wanted for it, he would give it in a moment. Titian only drew trees well; Turner drew everything well. He was greatest about 1842; engravings gave no idea of him; he owed nothing to them but a diminution of his greatest qualities. He was the first man who ever presented us with a perfect landscape.

They had thus five periods to recollect—viz. Giotto, Leonardo, Titian, Pastoralism, and Turner. But his (Turner's) work was as yet only begun. His greatness was yet denied by many; but every day that he lay in his grave would bring some new acknowledgment of his power, and through those eyes, though now filled with dust, generations yet unborn would learn to uphold the love of nature. He might be called dogmatic; but he would tell his audience, what he had given twenty years of his life to ascertain, that Turner would one day take his place beside Shakspeare and Veralam in the annals of the life of England—the third star in that great central constellation around which, in the astronomy of intellect, all other stars made their circuit. By Shakspeare humanity had been unveiled to us, by Verulam the principles of natural science, and by Turner the aspect of nature. All three were sent to unlock one of the gates of life, and to unlock it for the first time; but of all the three, though not the greatest, the most unprecedented in his work was Turner. Bacon did what Aristotle had attempted; Shakspeare did effectively what Æschylus did partially; but none before Turner had lifted the veil from the face of nature. The landscape of the hills and the forests had before received no interpretation; the clouds passed unrecorded over the face of the heaven which they adorned, and of the earth to which they ministered.

TO FIND THE DEFLEXION OF WROUGHT-IRON PLATE GIRDERS.

In order to complete our investigations respecting wrought-iron girders, it will be necessary to show how the effect upon a girder may be found as regards the deflexion in the middle, when loaded by a weight. The method which we shall adopt is that employed by Mr. E. Hodgkinson in calculating the deflexion of the Conway Tube, and given at p. 173 of "The Report of the Commissioners on the use of Iron in Railways." The mathematical reasoning by which the formula is obtained is given in that report, and also by other writers on the subject; but as it involves more of the differential calculus than most of the readers of the *Builder* will care to see in its pages, we will merely take the results.

The formula which we previously found (pp. 646 and 677), for the strength of a wrought-iron girder, was,—

$$w = \frac{4f}{l} \times (CN)^2 \times (2l \times AB + \tfrac{8}{3} s \times CN + 4x)$$

$$= \frac{4f}{l} \times m,$$

where $m = (CN)^2 \times (2l \times AB + \frac{8}{3} s \times CN + 4x)$, then the formula obtained for the deflexion (δ) in inches is as follows:—

$$\delta = \frac{w \times (\frac{1}{2} l)^3}{6\, m\, .E.}$$

Where E is called the *modulus of elasticity*, and is taken at 10,714 tons, w being also in tons, and l the length of the girder in inches.

Let us apply this formula to the three examples given at p. 677.

In example 1, we have $m = 6^2 \times 11 = 396$, $w = 17{\cdot}6$ tons, $\frac{1}{2} l = 60$ inches; therefore,

$$\text{deflexion} = \frac{17{\cdot}6 \times 60^3}{6 \times 396 \times 10714} = 0{\cdot}15 \text{ inch},$$

or about $\frac{1}{7}$ inch.

In example 2, we have $m = 396$, $w = 8{\cdot}8$, $\frac{1}{2} l = 120$ inches.

$$\text{Deflexion} = \frac{8{\cdot}8 \times 120^3}{6 \times 396 \times 10714} = 0{\cdot}6 \text{ in. or } \tfrac{3}{5} \text{ in.}$$

In example 3, $m = 12^2 \times 13 = 1872$, $w = 20{\cdot}8$ tons, $\frac{1}{2} l = 120$ inches; therefore,

$$\text{deflexion} = \frac{20{\cdot}8 \times 120^3}{6 \times 1872 \times 10714} = 0{\cdot}3 \text{ in. or } \tfrac{3}{10} \text{ in.}$$

To find the deflexion of a beam when a weight is distributed over the whole length, we have to take $\frac{5}{8}$ths of the deflexion which it would have if the same weight were suspended from the centre. Now, the beam will bear twice as much when the weight is distributed as it will when the weight is laid on the centre; but the deflexion in the middle will be rather more in the former than in the latter case.

Let d be the deflexion in inches when the

weight ($2w$) is uniformly distributed; then we have,

$$d = \tfrac{5}{8} \times \frac{2w \times (\frac{1}{2}l)^3}{6m.E} = \frac{w \times (\frac{1}{2}l)^3}{6m.E} = \tfrac{4}{5} \times \delta;$$

therefore, $d : \delta :: 5 : 4$, or, the deflexion caused by $2w$ distributed uniformly is to the deflexion caused by w suspended from the centre in the proportion of 5 to 4.

To find the deflexion of a beam arising from its own weight alone, let W be the weight of the beam in tons; then,

$$\text{deflexion} = \tfrac{5}{8} \times \frac{W \times (\frac{1}{2}l)^3}{6m.E} \text{ in inches.}$$

The calculation of the deflexion will greatly assist the practical man in arriving at the best proportion for a girder in any particular case, as it is frequently as important to find the means of preventing any perceptible deflexion, as to find what weight the girder will safely bear.

E. W. TARN, M.A.

STRENGTH OF WROUGHT-IRON PLATE GIRDERS.

YOUR correspondent "E. W. Tarn" having favoured us, at pages 646 and 677, with certain formulæ for finding the strengths of wrought-iron plate girders, which to some of your readers (myself included), appear at variance with our preconceived notions of the relative values of the powers of malleable iron, I shall be glad to inquire of that gentleman his reason for basing his calculations on the following erroneous supposition,—"*that the resistance*" of malleable iron "*to compression is equal to the resistance to extension.*" This supposition at the outset of his explanations leads him into numerous errors of great practical importance, one of which is, that he is compelled to assume that the neutral axis passes through the centre of the section of the girder—that is, that it divides the girder into two *equal portions*; and another, obliges him to make the top and bottom plates of equal size.

I will not occupy your space at the present time by discussing whether Mr. Tarn is right or wrong in suggesting that the top and bottom plates should be equal, because the elements which affect this knotty point have not been introduced into his calculations; besides, that gentleman is at perfect liberty to adopt any form he pleases, if it is by way only of hypothesis.

According to the best authorities, the ultimate resistance of malleable iron to extension is stated to be on the average equal to nearly twenty-seven tons per square inch, whilst the ultimate resistance to compression amounts to as much as fifty-six tons per square inch, or nearly as two to one. If this be the case, the neutral line will evidently not be in the centre of the section, but will be situated at a distance from the top of the girder of about one-third the entire depth of the section; therefore the value of CN is not in the proportion given in the arithmetical expressions of Mr. Tarn, and consequently the results which are deduced therefrom are not accurate.

W. G.

In demanding the reason for the assumptions which I have made in my paper on wrought-iron girders, your correspondent "W. G." has overlooked my statement at the outset to the effect that the following investigations were an adaptation to ordinary girders of those employed by Mr. Eaton Hodgkinson in calculating the strength of the Conway and Britannia bridges, which are given in the parliamentary Report on the use of Iron in Railways. If he will take the trouble to refer to that report, he will find at p. 164 that the calculations are based upon the *assumed* perfect elasticity of the material, the neutral line being then in the centre of gravity of section. The same assumption of perfect elasticity is also made by Mr. Tate in finding the strength of the same bridges (see p. 47 of his Treatise on the Strength of Materials).

This assumption may appear to mere practical men to be "erroneous," but is nevertheless adopted by the "best authorities," being the nearest approximation in the case of wrought-iron plates fastened with angle-irons and rivets. "W. G." states that the ultimate resistance of wrought iron to compression is 56 tons per square inch; by which, I suppose, he means the weight a short piece of wrought iron, as a cube, will bear before being crushed (this appears to be much too great, as a cube of *cast iron* will be crushed with 44 tons per square inch: p. 14 of Report); but with this crushing weight we have nothing to do in plate girders, the resistance being to crumpling or buckling, and not to crushing, the experiments to determine which are given at p. 120 of the Report.

Again, in page 122, Mr. Hodgkinson, in speaking of the resistance of wrought iron to pressure as a column, says that he found "that, beyond 12 tons per square inch, it was of little or no use in practice." Hence it is evident that we should obtain very false results if we assumed that the resistance to crumpling was twice that to extension. For experiments on the tensile strength of wrought iron I must refer "W. G." to p. 48 of Report, where it seems that 24 tons per square inch of section will tear asunder a rod of wrought iron.*

In order to render the formula fit for calculation, the constant quantity, 8 tons, had to be found from experiment (see p. 171), so that any error in the hypothesis would be counterbalanced by this experimental result.

Having given my authorities for the method I have adopted, I will merely add, that my object was to obtain a formula which persons not possessing much mathematical knowledge could apply without difficulty; and had it been necessary first to calculate the position of the neutral line, scarcely any one would have thought it worth while to take the trouble. With regard to the upper and lower flanges being taken of equal width, my reason for so doing was, that it is the most usual form adopted in this kind of girder, leaving it for those who have opportunities of trying experiments to decide on the best form of section to be adopted.

In conclusion, let me remark that it is far easier to find out a fault than to correct it; and as there is no formula to which some exception might not be taken, the only thing we can do is to discover that formula which gives the nearest approximation to the truth; and as my formula is, I believe, the first that has been published for this kind of girder, it must remain unaltered until some one else produces a better one, and founded on better authority.

E. W. TARN.

THE LIZARD SERPENTINE.

IN our report of the opening meeting of the Royal Institute of Architects, we noticed briefly that some specimens of serpentine from the Lizard, Cornwall, had been exhibited. These were sent by Messrs. Bracc and Colt, and we think it right to add that the specimens excited general admiration from their large size, high polish, and extreme beauty of colour, and that it was stated that the defects arising from the brittleness of the material, and its liability to decay, were almost entirely obviated when the stone was raised from some depth below the surface; in which case it was also procured in much larger slabs. Some of the speakers insisted on the above defects in this otherwise beautiful material, as hitherto worked; but a hope was expressed that, with improved mechanical appliances, much better specimens might in future be brought into the market.

In answer to these observations, Mr. Bracc gave a short explanation of the operations at the quarries referred to. He stated that he and Mr. Colt were the first persons who had ventured to open quarries of any considerable depth; that the experiment had been highly successful, stone having been obtained vastly superior both in colour and working qualities to any that had hitherto been produced; that there was every prospect of blocks of large size being readily obtained, of great variety in colour and general appearance; that the specimens shown would compete in point of price with marbles of very inferior quality; and that there was no doubt that the objections that had been raised to stone obtained from the surface and the beach, portions of which had recently been used, would be entirely overcome, as stone of sound quality was readily obtainable from the lower depths of their quarries.

At the Great Exhibition of 1851, the character and importance of the Lizard serpentine were brought prominently before the public; and in the report of the jury upon works in ornamental stone, it is described as "an extremely beautiful marble, of moderate hardness, differing essentially in this respect from the serpentine of Italy and Greece." The colour is extremely varied; that which is commonest and most admired being a rich dark olive green, spotted with red, and traversed with veins of the purest white, but sometimes of dark crimson, and the effect of the stone when in large blocks is, as the jury truly said, rich and noble. It seems that the favourable report of the jury stimulated the exertions of parties whose enterprise had already been directed to the Lizard district, and that the result has proved successful, and serpentine has been obtained of far greater beauty than any exhibited in 1851, or hitherto known. The manufacturing capabilities are also found to improve in the same degree as the beauty of colour becomes developed, and it is asserted that no obstacle exists to the useful and ornamental application of the Lizard serpentine, on a large scale. The material is so beautiful, that we trust these anticipations will be fully realized.

PROVINCIAL NEWS.

Sleaford.—A stone figure, supposed to be a representation of one of the apostles, has been discovered in a wall of Rauceby church, now under repair.

Ipswich.—The Tower church was re-opened on 25th ultimo. The cost of the alterations is about 1,100*l.*, of which nearly 900*l.* have been raised by subscription.

Lee.—The building used as a temporary chapel, in the high road at Lee, near Lewisham, in Kent, having been found quite inadequate, it was determined to erect a more spacious edifice. A site was procured at the expense of 400*l.*, and a design for a new chapel was furnished by Mr. James Harrison, architect; for the erection of which a contract was entered into with Mr. J. Clever, of Haggerstone, builder, to the amount of 2,000*l.* The foundation-stone was laid last week. The chapel when completed will accommodate from 300 to 400, but can be extended so as to admit of sittings for nearly 700. The style is Early English, and the chief ornament a five-light lancet-window. The dimensions of the edifice will be 60 feet and 42 feet, and the external facing will be Kentish ragstone, relieved with Bath-stone quoins and dressings.

Sompting.—It is well known to those interested in the antiquities of Sussex, that the church of Sompting is mentioned in Domesday Book, and that the old tower still exists as it stood anterior to the Norman conquest. Considerable repairs of the roof, both of the tower and of the body of the church, being required, it is proposed (without changing the ancient architecture) to restore the church throughout, and re-arrange the sittings, by which the accommodation, especially of the poor, will be increased. The estimated cost is 1,200*l.*, exclusive of the ruined chapel, which would cost about 300*l.* more. The vestry have voted 400*l.*, on condition that 800*l.* be raised by public subscription. Of this, 561*l.* having been subscribed, the minister and churchwardens hope to be enabled to carry out their plan by the subscription of about 500*l.* more.

Oxford.—The restoration of the south elevation of Jesus College, facing the market, has just been completed. It forms a considerable and unbroken line of building, measuring between two and three hundred feet in length, and is three stories in height. The design exhibits no new features. All the chimneys are in their former positions, but their appearance is said to be improved, and the gable in the centre finished in an appropriate manner. The original windows had been altered and mutilated—some made shorter, and others longer, than in their first construction. Deformities, which made the building look unsightly, have been removed, and new stone has been substituted for

* In an article on Malleable Iron Girders, by Mr. Barry, in the *Builder*, Vol. VII. p. 103, will be found some particulars bearing on this point.

FOUNTAINS AT OSBORNE: DETAILS.

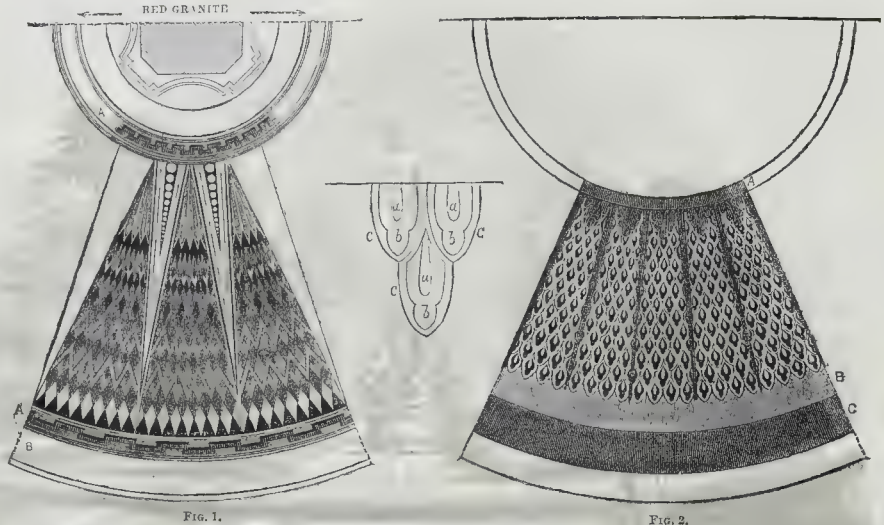


Fig. 1. Fig. 2.

ORSI AND ARMANI'S LAVA-LINING OF BASINS.

what had perished. The restoration has been executed by Mr. James Long, of Witney, under the superintendence of Mr. Buckler, the county architect. The work was commenced early in June last.

Winchester.—The new district church for the parishes of St. Maurice, St. Mary Kalendar, and St. Peter Colebrook, the foundation-stone of which was laid by Mr. R. Seymour, of Crowood, Wilts, on 30th July, 1852, is now mostly completed. The total cost will be 6,000*l.* greater portion raised; but the church will not be consecrated till the whole is contributed. The church is erected from the designs of Mr. Woodyear, of Guildford. The style is Middle Pointed, with extreme plainness of ornament. The number of sittings will be 846, two-thirds free. The east and west windows are filled with geometrical-stained glass. The font was carved and presented to the church by Miss Horndige, of Easton, near Winchester. It is formed out of a block of Caen stone, and stands on an elevated platform, formed by two stone steps, the faces of which are ornamented with a rich scroll pattern. The decorations of the font, which is octagonal, consist of a variety of Gothic ornaments, in the shape of octofoils, quatrefoils, &c. which, according to the *Hampshire Independent*, are executed in a very artistic manner. This talented lady executed the font in St. Thomas's church, and she is now engaged in carving one for her own parish church at Easton. The district church was erected by the Messrs. Govers, of Winchester, builders.

Cecily-hill (Gloucestershire).—It is understood that a spacious barrack for the accommodation of the staff and deposit of arms and stores of the North Gloucestershire regiment of militia, will be erected on a plot of ground close to the entrance of Earl Bathurst's park, on Cecily-hill.

Holyhead.—Rapid progress is being made in the new harbour works, and it is thought the contractors will be able to complete the undertaking in the required time—August of next year.

Sutton.—The project for the erection of a Crystal Palace in Sutton-park, in the neighbourhood of Birmingham, with a railway for the conveyance of visitors to it from that town, has been set aside for the present. The corporation of Sutton refuses to grant any of the land required for a longer term than ninety-nine years, or at a less rent than 1*l.* per acre. The Birmingham town council think that it would not be advisable to lay out large sums in the erection of a Crystal Palace upon land held by such a tenure.

Stockport.—The opening of the Albert Mill, recently erected, was celebrated on Saturday in last week, when upwards of 300 persons sat down to a dinner provided by the proprietors, Messrs. Charles and Thomas Bailey, cotton-manufacturers. The building, which stands on the site of some old warehouses in Mottram-street, was erected by Messrs. Longson, of Heaton Norris. It consists of four stories, and an equal number of rooms running the entire length of the building, each room being 114 feet long by 60 feet wide, and lighted by twelve large windows on each side; the floors, which are composed of 3-inch planks, tongued together by strong iron plates, being supported by two rows of iron columns at equal distances from end to end of the rooms. The engine-house and boilers are detached.

Flaxton.—On Monday in last week, a new Episcopal chapel was opened at Flaxton, near York, and at the same time the consecration of a new burial-ground took place. The new chapel is situated on the site of the old one, which was too small for the population (400), and which had gradually sunk into almost ruinous dilapidation. The entire cost of the new building has been 958*l.* It is capable of seating about 200 persons. The contractor was Mr. Ralph Weatherley, stonemason, who sublet the joiner's work to Mr. Lawson, the plumbing and glazing to Messrs. Hodgson, and the plasterer's work to Mr. Clapham. The architect was Mr. G. T. Andrews.

Huddersfield.—A new arcade, called the Lion-arcade, is in course of being erected here in John-William-street, with plate-glass-fronted shops, fountains, conservatory, promenade, and waiting-rooms, &c. There will be statuary in the promenade and conservatory, to be executed by Mr. Seeley, of London, who has already finished the lion on the top of the building, which is covered with an arched glass roof. The design of the whole was furnished by Messrs. Pritchett and Sons, architects. Mr. William Stocks is the clerk of works. The glass was supplied by the London and Manchester Glass Company, and Messrs. James Hartley and Co. of Sunderland. Messrs. William Fawcett and Sons did the joiner-work. Messrs. W. and J. Hodgson, of York, were the plumbers. The iron-work was done by the late Mr. Walker, of York. Mr. Goodwin was the slater, Mr. Tunnacliffe the plasterer, and Mr. Calvert the painter employed. There are to be three entrances—one from St. Peter's-street, another from Northumberland-street, and the principal one from John-William-street, and which is to be adorned by a stained window.

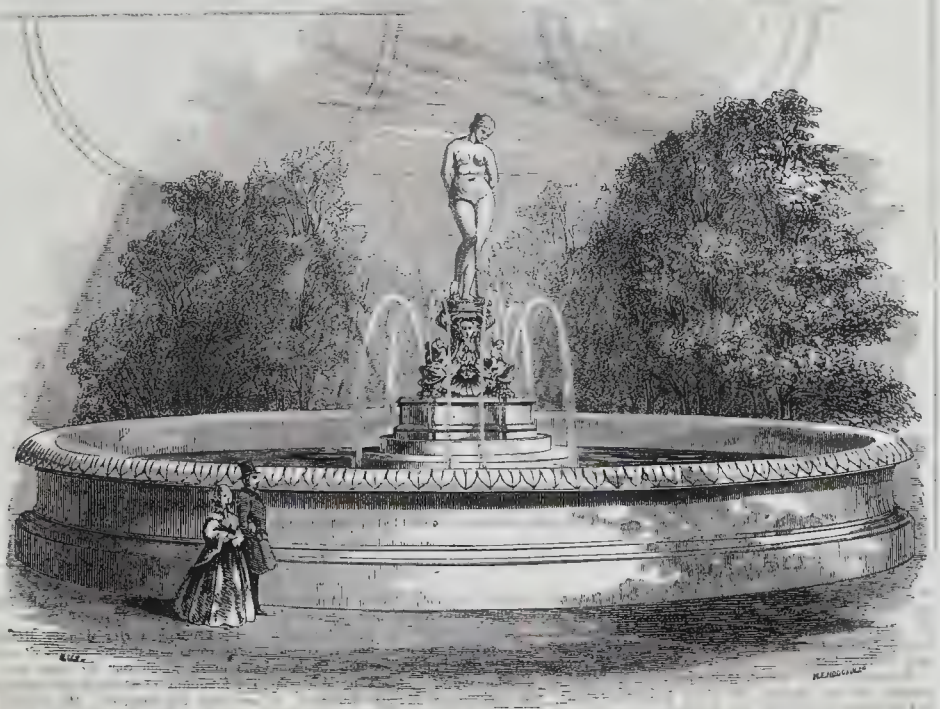
FOUNTAINS AT OSBORNE, ISLE OF WIGHT.

The grounds of Her Majesty' Retreat at Osborne are now assuming an air of completeness and finish which was for some time wanting. The fountains, of which we give representations, are upon the terraces: Mr. Gruner was the designer. The Fountain of Andromeda is 36 feet in diameter, and is 18 feet in height. The base is of red granite, and the statue, by Mr. John Bell, is of bronze. The Fountain of Venus, on the upper terrace, and opposite Her Majesty's chamber, is 20 feet in diameter, and 15 feet in height. The dolphins, stems, and statue are of bronze (the latter copied from the antique), and the work of M. Barbedienne. The two basins are of red polished granite, and were made by Messrs. McDonald and Leslie, of Aberdeen.

Messrs. Orsi and Armani, of Guildhall-chambers, London, have executed the lining of both basins, with their ornamental lava, and, as we understand, with great success. Fig. 1 shows the lava lining in the basin of the Fountain of Andromeda, and fig. 2 the lining in the Venus Fountain: *a* is yellow, *b* blue, *c* grey; each colour in two shades. A and B represent circles of brilliant yellow; C a large stripe of brilliant blue. In fig. 1, A is a Greek band: the first line is bright yellow, the ground a brilliant green, and the Greek pattern red, edged with black and brown umber. B is a brilliant blue, which is carried to the same height as the water; and the side of the basins is covered with lava, of a buff or stone-colour. Looking into the water, it is said to have the effect of an immense basin of porcelain.

The nature of the soil at Osborne made it difficult to obtain good paths: by the use, however, of the metallic lava, the difficulty was overcome. A coat of asphalte one inch thick was first laid down, and was then covered with 1½ inch of lava, in buff-colour, mixed with Ventnor sea-pebbles; and the wear bringing these pebbles to the surface, the floor presents a natural and pleasing appearance. This description of paving for gardens, &c. is very advantageous, as it prevents vegetation, and only requires sweeping to be kept clean. The coloured lavas, too, offer a ready means of decoration.

The fountains are not drawn to the same scale, the size of them being very different; and the representation of the larger fountain is necessarily less than that of the smaller: the accompanying figures, however, serve the mind as a scale to judge by.





FOUNTAINS AT OSBORNE.—Mr. L. Gruner, Architect.

CONGREGATIONAL CHAPELS.

IN March last, a society was formed, entitled "The English Congregational Chapel-Building Society," for the purpose of erecting fifty chapels in various parts of England, in five years. Various architects who had had experience in chapel-building were invited to send in designs for model chapels; and out of about eighteen received, the committee have selected five as most in accordance with their views. The designs selected were by the following architects:—One set of Gothic and one set of classic designs, with several elevations adapted to the same plans, by Mr. Andrew Trimen, of London; one set of Gothic designs, by Messrs. Foster and Wood, of Bristol; one set of Italian designs, by Messrs. Bidlake and Lovatt, of Wolverhampton; and one set of Italian designs, by Mr. T. Oliver, jun. of Sunderland. The committee have also commenced the erection of a chapel in Queen's-square, Brighton, of which Messrs. Joseph James and Raffles Brown are the architects. The whole of the chapels are to be erected by voluntary contributions, and there are several donors of 1,000*l.* each. The treasurers are Messrs. Joshua Wilson, Arthur Morley, and Rice Hopkins; and the secretary is the Rev. J. C. Gallaway, A.M.

A similar society was formed for London, five years ago, and it has aided in providing sixteen chapels in the metropolis. It is now erecting two large chapels, the one at Cravenhill, Bayswater, of which Mr. Trimen is architect; and another at Blackheath.

The Lancashire Congregational Chapel-Building Society is engaged to aid in supplying twenty chapels; and there are several liberal contributors to its funds, including Mr. Hadfield, M.P. 5,000*l.*; Mr. Kershaw, M.P.; Mr. Barnes, M.P.; and other gentlemen 1,000*l.* each.

MODERN ADAPTATION OF ANCIENT ARCHITECTURE.

ARCHITECTURAL INSTITUTE OF SCOTLAND.

AT the opening meeting on the 24th ult. Mr. Alexander Christie, director of the School of Design, read a paper "On the Adaptation of previous Styles to our wants." We were met, he said, at the threshold of the investigation of this subject by the question, Why adopt any previous style whatever—why not invent a new one? The answer to this was,—we did not require any new style of building. Did our necessities call for such a change, depend upon it the circumstances would create it—the demand would infallibly produce the supply. But no style whatever had sprung into life at once. No man was known as the inventor of any style. It was not known who invented Stonehenge, the pyramid, the arch, or the pointed arch. These went by the names of nations, not of individuals. But, after all, the architectural invention of the present time had not been wholly dormant. Out of the three great principles of architectural construction—the beam, the arch, and the principle of tension, we might fairly claim the third. A strong skew arch or two might be found in old Gothic buildings, but it was only when railways required to cross rivers and roads at all angles that its power and convenience caused it to rise into importance. A century ago a suspension-bridge was built at Durham over a chasm of 60 feet; but it was not till the experiments of Telford on the strength of iron, that these bridges called into play the invention of the architect. In these fairy-like structures, Scotland led the way at Galashiels, Peebles, Dryburgh, Kelso, Montrose, and the pier at Newhaven, and so on till we came to the colossal work of Telford at the Menai Straits; which, again, had to bear a rival in the tubular bridge of Fairbairn and Stephenson. The roofs of our numerous railway-stations showed admirable adaptations of this principle to the covering of large spaces, where lightness of construction was required; while the Crystal Palace, transplanted from Hyde-park to Sydenham, and rivalling in extent the mightiest structures, would, he hoped, long endure for the delight and instruction of mankind. A nation and an age which could produce such works as these, could hardly fear the imputation of want of architectural invention. It was, he considered, from no dearth of the power of design that we had no new style, but simply because what we already possessed was amply sufficient for all our requirements. But with all our imitation, our architecture was not without a distinctive character of its own. Future ages would be able to point out the architecture of the first half of this century as readily as we could tell the buildings of the time of Anne from those of the reign of George I. No age, however, could form a correct judgment of its own achievements, and he feared we should be known more from our aiming at what was good than for the value of what we had attained. One thing we might be sure of—our character was as completely stamped, and would be as clearly read by posterity, in our buildings, as we could now read the refinement of Greece in her ruined temples. In examining the different styles, with the view of adapting them to our present wants, we at once rejected the earlier and ruder styles — such as the Assyrian, the Egyptian, the Hindoo, and the Mexican, from their ponderous, and the Chinese from its fantastic, character. We must confine our attention to those styles which had their growth and development in Europe, where their principles had been educed and their details elaborated, and which had sprung from our wants; and these styles, omitting subdivisions, might be classed under three heads — the Greek, the Roman, and the Gothic. In reference to Greek architecture, the late Mr. Pugin had abused the wooden-beam construction of the Greeks, which he called "the most ancient and barbarous that could be imagined;" and the term "barbarous" had since been transferred from the supposed type to the Greek architecture itself. The Greek architecture barbarous! Was the Parthenon, which neither time nor Turks had been able to destroy, to be called barbarous? Was that architecture barbarous whose deliberately-calculated curves had required the utmost skill and scientific resources of the present day to discover and display? Was that architecture barbarous, of which every line was the result of the most fastidious thought, and the object of the most careful study? Was that style barbarous, the ornament of which was so balanced in its details that not a part could be taken away without making a void that was instantly felt; or a piece added or altered in its plan, without marring its proportions? Barbarous! What was the meaning of the word? It was a Greek word. Johnson defined it in English, firstly, as—"stranger to civility—savage—uncivilised." What was to be understood from an architecture being strange to civility or uncivilised, he could not tell. Or was the Greek architecture savage? Stonehenge was savage, if they would; it was the erection of mere physical force, and it told of horrid sacrifices, better left untold. The second meaning given by Johnson was, — "ignorant — unacquainted with the arts." If this were the meaning intended to be applied to Greek architecture, such an assertion was rank absurdity. But there was one more interpretation,—"cruel —inhuman." Now, what cruel or inhuman idea was ever excited in the brain of any man by the contemplation of a Greek building? Well might Hume say, "We are apt to call barbarous, whatever departs widely from our own taste and apprehension." He (Mr. C.) did not envy the mental constitution of that man who could call the Greek architecture barbarous. No; it was not barbarous. It was studied, deeply studied, and refined; it was symmetrical in its proportions; it was adapted to its ends; it was, moreover, consistent, and they would never find, in works devoted to the great gods, anything of the grotesque, which was more than could be said of the Gothic architecture of the Middle Ages. We were only now becoming acquainted with the principles of Greek architecture, as we were, indeed, of the Gothic; but if successful adaptation were to be the criterion, alas! for the Gothic—it would be banished from the land. The great difficulty in regard to the Greek seemed to him to be in the light not admitting of more than two stories, one lighted from the sides, the other from the roof. But be it remembered, that architecture was a fine art, not an exact science. It was perilous to prophesy that anything was impossible. A man of genius arose, and the feat was accomplished. We had more appliances than the Greeks, and an extended science to help us to our ends. Our increased skill in the manufacture of glass, our increased knowledge of the principles of ventilation, and of the management and consumption of smoke, might yet go far to render the Greek forms as plastic in our hands as the Romanesque or the Gothic. Now for the children of the Greeks; for all other styles had sprung from them. The Romans pretended to no art, but they conquered Greek art, and yoked to it the arch, and made it do their bidding; and the gorgeous and magnificent style which we know by the name of Roman was produced. This change was most important, as the starting-point of all other styles. We had in it an element too much neglected in Protestant church-building — the polygonal or circular form, Our religion had ceased to be processional, and the long-drawn aisles, the naves, and transept, were no longer required. We required now a place in which all might see and hear, and might unite in the worship; and he ventured to think that this would be found more readily in the circular or polygonal than in any other forms.

A NUT FOR KING CHOLERA.

In Gloucester-street, Haggerstone (between Hackney-road and the Canal on its north), interment of the dead amongst the living is continued in a churchyard about 20 feet square, which faces boldly on this street, with its earth already *some feet above the level of the road*, and noxious weeds rearing their heads. Close to the ground there are, on the west side, the two gasworks; behind it, a lamp-black factory. On the south, also, a large engine-factory (Gilbert's): on the south-west a new soap-factory is just allowed to rear its pestiferous head—the whole wedged in and hemmed round with rows of private dingy-looking dwellings, and dingy, pale inhabitants. Yet, spite of local government, of imperial *talk*, another gasometer, in the Hackney-road, is rearing its monster body, and no attempt to stop these nuisances is made. The working classes should refuse to occupy such places, and thus secure a remedy, as well as a punishment to careless landowners.

C. NASH.

FOREIGN ARCHITECTURAL AND ART INTELLIGENCE.

Statistics of Cathedrals.—A German magazine makes the following arrangement of the largest edifices in the world. The majestic Cathedral of Speyer is the greatest monument of the Romanesque, or so-called Byzantine style, in Germany—in fine, *the* largest of all completed German churches; larger than the cathedrals of Ulm and Strasburg, and therefore still larger than the buildings of Mayence, and St. Stephen of Vienna; and the cathedral of Speyer is only surpassed by the *Dom* of Cologne. Considering the churches out of Germany, the largest throughout the world, are—St. Peter, at Rome; the *Dom* of Milan; St. Paul's, at Rome; St. Sophia's, at Constantinople; the Cathredal, at Florence; and St. Paul's, in London. All these churches, enumerated here according to their size, are larger than Cologne Cathedral, even in its completion. St. Peter's, at Rome, occupies an area three times that of the Cologne Dom: of similar size with the Speyer Cathedral is that of Anvers, and only next to that is Notre Dame, of Paris.

The Wartburg of Luther Memory.—The Grand Duke of Weimar has commissioned M. von Schober with the fresco ornamentation of that old historical structure. The execution of the works will occupy two or three years, and one of the large halls (*der Landgrafensaal*) will be ornamented with pictures of the history of the dukes of Turingia.

Family Album of the King of Prussia.—The present king is much interested about monuments connected with the *Hohenzollern* family, and possesses a valuable album of drawings of that kind. Relating thereto, some excavations and researches have been made of late, in the old Stifts Kirche, of the Convent of Heilsbronn, which being founded in 1132, contains several highly-interesting monuments of the Markgraves

of Anspach and Burggrafen of Nürenberg, the ancestors of the present monarch of Prussia.

Rome: Cornelius.—News received from Italy bring satisfactory accounts of the health of the great *Meister*. The King of Prussia has commissioned M. de Cornelius with an altar-piece for the new Dom at Berlin, which—a grandiose composition—is now being executed by the painter.

Architecture of Lima, South America.—A correspondent, residing in the country, gives the following account of the buildings of Lima. They are erected in the different styles of the Renaissance; but the original Mauresque style of mediæval Spain is always mixed up with it, and these hybrid structures were yet altered by those vast repairs which followed the great earthquake. The churches have mostly two turrets, united by a façade, and a *fronton* of the form of a segment of a circle adorns the principal entrance. Often, a many-coloured wash of striking hue covers the churches: others have preserved their natural colour. Stone is seldom used, except where absolutely necessary. The ornamentation of the façades is often complicated, as the stucco with which they are covered is more pliable to the fantastic decorations of American artists; and thus mouldings after the antique, guirlands, festoons, little statuettes, are met with in profusion: at other places, the stucco is perforated in the shape of madrepores, and the columns covered with circles and mouldings, which, without being artistically correct, still impart on original aspect to these buildings, seen under the strong glare of a tropical sun.

Charitable Art-Exhibition, Cracow.—Some of the inhabitants of this ancient Polish metropolis have made an art-exhibition, to aid the establishment of a *salle d'asile* for little children. This exhibition is interesting, on account of some pictures of living *Polish* painters, as a portrait by Rodabowski, which won the great prize at Paris; and the taking of Saragossa, under Chlopicki, painted by Suchodolski.

Berlin Academy of Arts.—The *interregnum* of the presidential dignity still continues here, although the affairs of the academy seem to suffer by this headless condition. Of course, where men like Cornelius, Caulbach, Rauch, &c. are at hand, a choice amongst them would not present any difficulty; still it has been rightly objected, that such men are not to be manacled by the drudgery of office. Dr. Olfers, and the art-author, M. Schnaase, are now spoken of as the future directors of the Berlin high-art school.

OUR THOROUGHFARES.

London-bridge.—The want of accommodation for the increased carriage traffic has become a question of great interest, and many schemes of more or less magnitude have appeared, purposing to remedy the evil, of which so many feel the annoyance. Nowhere do we find this want of room more evident than on London-bridge, and I beg to submit the following plan for its amelioration.

I propose to do away with the footpaths on each side of the bridge, and give the entire width to carriages. And for foot-passengers, I purpose to construct, over and above the present bridge, a second platform, constructed of iron and wood, and supported on iron pillars of a height to allow the highest loaded waggons to pass under it. This upper bridge, commencing at where now stands the second lamp, I would ascend to by a long inclined pathway on each side.

J. C.

Ludgate-hill.—I have just seen a letter in your journal suggesting the removal of the south side of Ludgate-hill, and your remarks as to the probable enormous expense. Will you allow me to offer the following suggestion, which I have not yet seen in print?—Continue New Cannon-street along the back of St. Paul's-church-yard, and remove the very inferior property at the immediate back of the existing houses on the south side of Ludgate-hill, flush up with their back premises, reserving only a right of frontage into the new street to be thus formed. The advantage of possessing a *second* front would be appreciated by the proprietors and occupiers of the shops in Ludgate-hill, who would no doubt pay liberally for the privilege of putting shop-fronts in the new street. This plan might be carried out with the houses on the south side of Fleet-street, up to the boundary of the Temple, where, by a short new thoroughfare into Fleet-street, and the removal of Temple-bar, with a short street on the site of Shire-lane, to Carey-street, which I perceive is about to be widened, would offer, I think, a solution of the important and oft-repeated question, "What is to be done with Ludgate-hill?"

Brightoniensis.

*** The question involved has been mooted in the Court of Common Council, and referred, we believe, to the Improvement Committee for a report.

The Bridge-house Estates Committee have been instructed "further to consider and report on the plans and estimates for the erection of a new bridge between Southwark and Blackfriars bridges, and the approaches thereto, in order that the Court may be enabled to form a comparative estimate between the erection of the new bridge and the sum necessary for the purchase of Southwark-bridge."

NOTES AND INQUIRIES.

ARCHITECTURAL AND ARTISTICAL.

Architects' Charges.—Where an employer provides a considerable portion of the materials for building, and employs an architect to prepare plans, &c. and superintend the works, is he entitled to charge his commission on the value of the building, or only on the amount of labour contract?

Sub.

*** On the value of the building.

Symbols of the Evangelists.—Do any of your readers know what authority there is in that word in which the man of God is "thoroughly garnished unto *all good works*," for taking the four living creatures of Ezekiel and the Revelation as symbols of the two apostles, John and Matthew, and of those other two who wrote the things "most surely believed among us, even as they delivered them unto us, which from the beginning were eye witnesses and ministers of the word?"

Quere quare?

THE BRITISH ALMANAC AND COMPANION FOR 1854.*

A decimal coinage, the census, baths and washhouses, administrative and financial improvement, Ireland's prospects, are amongst the subjects treated of in the new "Companion,"—the first very clearly and *advancingly* by Mr. De Morgan. In the section devoted to "Architecture and Public Improvements," the writer has sought "to condense as much information as was consistent with his narrow limits (twenty-eight pages), in connection with the enforcement of general principles of taste rather than the indulgence of individual censure,"—a large amount of the information so condensed being of course furnished by our journal. We quote some of the introductory matter:—

"There are evidences that great changes are in course of realization as to the popular perception and knowledge of the fine arts. It is very gratifying to observe many of these evidences in buildings in progress, or which have lately been completed. Yet there has, during the past year, been too much reason for continuing to believe, that in its several provinces as art, science, and practice, or as the matter of a profession—architecture, as existing, is behind the standard of the age. The professional bearing of the question is important, because whilst the discreditable and unwise proceedings of building committees continue, or whilst in the vast majority of houses, architects are not employed at all, so long do the public deny themselves such advantages as exist, whatever these may be. The profession, however, should maintain its position, and justify such assumption by establishing a system of education in accordance with the great and multifarious demands upon professional knowledge. *Popular* education in science and art—no less required—is being much advanced by the "Department" at Marlborough-house; and some important steps have been taken during the year.

At present, it is to be regretted that the important question of style—here forced upon our notice—is one over which architects have no control. The *choice* in each case is the act of the public, to whom the anomalous discrepancies are due. With trifling exceptions, every successful period of taste in former days left but one style: and to persevere in any *one* now, would be better than the practice in vogue. Even those who are for the general use of Gothic architecture, are not much less in the act of obstructing recognition of correct views, since there are perhaps as great differences between the "Early English" and "Decorated" styles in Gothic, as between the Greek and Italian in classical architecture.

To attain a high position in art, as well as to prevent unmerited depreciation of costly works within a few years of their erection, this question therefore should be settled, as we think it would be if architects were allowed to work it out. It is of far greater importance that the public should possess real love of the *art*, than that they should become able to detect minute differences.

Some of the principal buildings in progress during the year show a disposition to work out the style most accordant with ordinary town-houses—the Italian—and which, from that fact alone, must long prevent the general assumption of any other. But in collegiate institutes, schools, and many other buildings, the late Gothic, Elizabethan, and Jacobean styles are still followed, whilst in Leicester-square, the able architect of the Panopticon Institution has had forced upon him a style of still later reproduction. The very merits of some of these works individually are disadvantages as to the general direction of public taste.

As regards the appropriate character of church architecture, the proposal to erect a great number of new churches—eighty in the diocese of Manchester alone—finds the question still unsettled; and indeed it must remain surrounded with difficulties, so long as the clergy are at variance one with another upon points of doctrine and ritual observance.

With reference to the art in general, and to the practice of building,—the vast growth of suburban London, and, indeed, the extension of some towns, would alone render the question of inadequate demands upon existing knowledge an important one. The manufacturing towns of the North have recently shown an appreciation of the value of the art of architecture, which is a subject for congratulation, considering the great wealth now in the hands of capitalists in those places. In the demand for large buildings—as warehouses—and in the possession of good materials, the architects of Lancashire and Yorkshire have advantages of which they have not failed to avail themselves. In Manchester, especially, we are able to discover a character of street architecture not unworthy to be compared with that of other times and other countries. The several municipalities, with the increased wealth of individuals, become of greater influence, and in some cases we hear of sanitary measures of the greatest importance to the towns, and of new public buildings. In fact, London has not made corresponding advances."

Touching the duty of the architect in regard to church-architecture, which is surrounded with difficulties, he says:—

"To settle what use may be made of accumulated materials for art, it would be necessary clearly to apprehend the nature of the *demand* upon the architect. But it might seem that there should be a wide distinction between the case of church 'restoration,' and that of new buildings. Would it not appear that the artist's mind and hand should eliminate *design* in the latter case; and should not an entirely opposite principle prevail in the other? In that—the former case—should we not indeed recognise the soundness of that opinion which denies the possibility of *restoration?* In such case, strict conservation, and the removal of excrescences would form the whole subject for attention. Yet the power of perception of art may assist the efficacy of even these works, though it might not there be allowed to call into exercise the chief vocation of the artist. Yet the question arises, whether a building is to be left to the natural progress, or whether from time to time, as portions decay, they may be replaced with new? Also whether, in cases of neglect, conjectural restorations are admissible, and whether as regards members which appear to have been originally intended, the attempt may be made to supply them? The documentary value of the example may pass away; but is there any æsthetic quality in the entire building valuable and worth preserving? All these questions become difficult in actual practice. Moreover, the buildings are used for a specific *purpose*, which may require increased size, or other new features. How is this to be effected? As regards new work, it may be asked—to what extent should a certain permanence of character be perceptible in the architecture of religious observances? Supposing these questions settled, and the importance of design in new churches admitted, then comes the universal question of architecture—which style of those now in use are we, in the first instance, to follow? For whilst we disclaim all imputation of slavish use of our materials, we must yet work on the basis of some of these, or abrogate the progress made, and recur to initiatory stages of art

* Charles Knight, 90, Fleet-street.

There are, therefore, not wanting those who argue that we shall sooner arrive at a result by working out the mediæval architecture in all structures. Consistently, however, should not these work on only one of the styles into which the general mediæval architecture is divided? But, whatever the final adjustment of the questions which arise, there have been lately some important new works, in which, beginning on the basis of one or other of well-known general arrangements, the mediæval architecture has been made to produce buildings of considerable effect, and which are after all not deficient in many of the evidences of design."

FREEHOLD LAND SOCIETIES.

I was very much pleased when I read your article on the operations of Freehold Land Societies; yet there is a great evil still existing in these societies, which, if not remedied, may turn out unprofitable to the speculator and ruinous to the builder. A man may purchase a most eligible site for building, and lay out a large sum of money by erecting first-class villas, and then, to his discomfiture, suddenly discover that neither his land nor houses are saleable in the market. To illustrate this, I give you the benefit of my own experience. I purchased a plot of land of one of the London societies, and, on payment of the money, I was requested to sign a printed form (which they call a contract), and the conveyance was to be made out immediately. I receive my conveyance, and circumstances require me to sell it, having to build immediately elsewhere. I offer the lot for sale, but am utterly unable to sell it, as the title is not good, no abstract or deed poll copy being provided; and I find it will cost me *half of the value of the land* to provide me with the necessary documents to sell. I would not desire to particularize any society, but if the purchasers were to object to sign the deed of transfer until the proper documents were forthcoming, viz. abstracts and copies of deed poll, they would not only save themselves expense and trouble, but would create a reform in the legal transactions of these societies, and a benefit to the public at large.

A Little Builder.

ARCHITECTS' AND BUILDERS' ACTIONS.

Johnson and Others *v.* Tyerman.—This was an action in the Brompton County Court to recover 10*l.* and the defence set up was one of interest to surveyors and builders. The plaintiffs are the official assignees of Unwin, a bankrupt and builder. The defendant is an architect and surveyor, and pleaded a set-off to the amount claimed for professional services rendered to the bankrupt prior to his bankruptcy. The assignee's claim was for money lent by Unwin to the defendant. The set-off being first gone into, Mr. Tyerman stated that he, some time since, was employed as architect, where Unwin was engaged as builder. Some difficulties arose between Unwin and Mr. Shaw, whose property they were employed upon, and this made the wind up of the affair somewhat tedious and expensive. It was a common thing for surveyors to owners of buildings to be employed at the wind up, and he was employed between Mr. Shaw and Mr. Unwin to settle the dispute. Unwin, while this wind up was taking place, advanced him (defendant) two 5*l.* for his services.

By plaintiffs' solicitor.—The first 5*l.* he distinctly swears was for services. They were for services not defined. He gave an I O U for the *5l.* Was concerned for Mr. Shaw's premises in Wigmore-street. Shaw still owes witness 19*l.* In case of a difference on a contract, it is usual for a surveyor to be called in as referee. Mr. Unwin employed him as a referee. Had no special engagement for Mr. Shaw. Considered it to be his, defendant's, duty as surveyor under the contract to see to the books. He had a great deal of trouble with Unwin's books, and considers that the 10*l.* Unwin advanced very little remuneration. Cannot tell why he gave an I O U for the money instead of a receipt.

Mr. Frod. Tyerman, architect, son of defendant, deposed to the trouble the defendant had with Unwin's books.

For the plaintiffs, Mr. Unwin was called. He denied what the defendant had stated about his employing him. The defendant was employed by Mr. Shaw, and not at all by witness. There was a 900*l.* contract between witness and Shaw, and in most contracts there were extras. Mr. Shaw objected to these extras, and the defendant had a right, as Shaw's surveyor, to investigate the extras; and he never heard of a contractor having to pay architects for such services. His bill was reduced 40*l.* or 50*l.* through the defendant's investigation. This money was taken off by Mr. Tyerman, as Shaw's surveyor, and not as witness's. It was not at all likely he or any other contractor would employ a surveyor to cut up his bill. With reference to the money, Mr. Tyerman said, "I am rather short of money, will you lend me 5*l.*?" Witness said "Yes," and then Mr. Tyerman said, "Make it 10*l.*;" and he gave it him, and defendant gave him an I O U for it.

By the Judge.—It was some object to me to get my money from Mr. Shaw. Could not have got it so readily without defendant's signing for it. Perhaps not at all without Mr. Tyerman's seeing to it. Was not pressed for money when he lent the defendant 10*l.*: was solvent at the time.

The plaintiff's solicitor contended that the money was lent was apparent from the I O U, or otherwise the defendant would have given a receipt. With respect to the services rendered, it was monstrous to suppose a contractor would pay a surveyor to cut down the contractor's bill, as in this instance was proved to have been done. Besides, it was contrary to all custom for builders to pay surveyors employed by others to look after them.

The Judge (Adolphus) said.—The whole question was, whether the 10*l.* advanced was for a loan or for services. He was inclined to think that the money was given for services, and that there was sufficient consideration.

Verdict for the defendant, with costs.

RATING LONDON CLUB-HOUSES.

At the Middlesex Sessions, the Conservative Club appealed against the amount at which they were rated by the parish of St. James's, Westminster, viz. 2,940*l.* per annum. Mr. Bodkin, on the part of the club, said.—In other cases there was no difficulty in having the rateable value ascertained, but there was in property of this description. In the case of this kind of property there were no rents and no profits, and, therefore, quite an absence of the ordinary *indicia* by which the valuer, for the purposes of assessment, could be guided. To say that you were to be guided by the cost of the property was a proposition so absurd that it could not be entertained for a moment. He should like to know if Waterloo-bridge were assessed on what it cost whether the rate would not absorb all the receipts taken by the unfortunate toll-keeper? Houses of this description were built entirely for the purposes of a club, and if they ceased to be such, what were they worth?

Mr. Edwin Foster, of Pall-mall, was of opinion, founded on experience, that, if empty, the landlord ought not to refuse 2,000*l.* a year for the building. He did not consider the superb decorations added to the letable value, supposing the house was without a tenant. The arrangements for servants there were very bad, which was an important element in looking to the value. The kitchen, too, was not at all what one would expect for the building; and, generally, the magnitude of the offices did not correspond with the magnificence of the rooms occupied by the members.

Ultimately an arrangement was come to, and the net rateable value of the Conservative Club was fixed, by consent, at 2,730*l.*; of the Senior United Service Club, at 2,240*l.*; and of the Athenæum Club, at 1,730*l.*

Notices of Books.

The Globe prepared for Man: a Guide to Geology. Adams, Fleet-street. 1853.

This is a sort of compilation, based on standard works, but simplified and altered so as to suit the capacities of the young and uninitiated in science. It is written in a light, attractive style, but not well suited to strictly accurate scientific teaching. To describe the crust of the globe, both by words and by sketches, for instance, as covering the interior much as the outer and inner rinds of an orange do its interior, may be the easiest way to give a first glimmering idea of the basis of geology; but the idea is a very false one, strictly speaking, even though it were qualified by some notion of the fractures and tiltings of portions of the strata, an immense proportion of which never at any time lay in any such relationship to the interior, but in sections of circles often sweeping the other way, with their convex side towards the centre of the earth, and their concavity towards the heavens, forming basins of vast area rather than rinds concentric with the interior mass. We acknowledge the difficulty of adapting such knowledge to tender minds; but it is a great question whether it were not better to let alone what cannot be communicated easily without falsification; for first impressions are of vital importance, and mould and bias the mind, it may be, for ever. And besides, this *ad captandum* mode of teaching "the young idea how to shoot" leads inadvertently to other inaccuracies not so excusable on the ground of difficulty: for instance, silicon, one of the principal and most abundant elements constituting the crust of the earth, is a ruddy-brown powder, which tends to stick to the fingers or anything else with which it may come in contact, whereas silex, which is an oxide of silicon, is pure white. Now, here we have the idea instilled into the young mind that "silicon" is a "snow-white substance." Better far that nothing had been said as to so recondite an element as silicon at all, which not very many have ever seen.

Inscriptions and Devices in the Beauchamp Tower, Tower of London, with historical sketch. By William Robertson Dick. London: published by P. Ramage, Tower of London.

This is a sadly interesting transcript of the affecting memorials of suffering left by illustrious and unfortunate persons confined of old in the Tower of London. A complete representation is here given of the inscriptions and devices in sculpturing which, on the stones of their dungeon, the poor prisoners whiled away their weary hours, and wrote to posterity "with an iron pen on the rock." Many of these inscriptions and devices, as our readers know, were only recently discovered, during the restoration of the Beauchamp Tower, under Mr. Salvin's superintendence. In thirty-one lithographic plates, this tower and these numerous inscriptions and devices are represented; and to each device is appended a brief record of the author, collected from state papers, and other sources. The work, which is in quarto, also contains a short historical sketch of the building itself, and various lithographic sketches of it, including one of the interior of the state prison-room, such as we ourselves gave in this journal. The possession of so complete a record as this cannot but enhance the interest with which visitors will inspect the tower.

The Poultry Book. By the Rev. W. Wingfield and G. W. Johnson. Orr and Co. Paternoster-row. 1853. Parts VI. and VII.

These are the concluding parts of this highly-illustrated work, of which we have already spoken. The illustrations are done by the chromatic process, from coloured representations of the most celebrated prize birds, drawn from life by Mr. Harrison Weir, and printed in colours under his superintendence. They constitute not the least important feature in the work.

Miscellanea.

Brick, Tile, and Pottery Manufacture from the Mud of the Exe.—Our readers may recollect a proposal in our columns to put the clay deposits of the river Exe (and, indeed, of other rivers as well) to use. In this view the discoverer or suggester, Mr. Phillips, of Honiton's Clist, is said to have been confirmed by the opinions of manufacturers, the agents for the Land-draining Company having gone so far as to say that, had they previously known of the discovery, they would have established themselves in the neighbourhood of the deposits at Topsham. A committee of gentlemen also is said to have ascertained the correctness of the opinion formed of them. Upwards of 200,000 bricks were manufactured; and two casks of deposit were forwarded to Mr. Henry Clayton, to test it in the strictest manner. Mr. Clayton's reply is said to have been satisfactory, and the committee have now proposed the formation of a company.

Islington Infant Poor Establishment.—Having waited patiently ever since last May to know the decision of the committee on the drawings submitted in competition for the above-named works, and after many fruitless attempts to gain any satisfactory information, and not as yet having been able so to do, I have taken the liberty to address you, to ask if you have any farther information than that we last saw in print. It seems strange that a committee should take seven months to decide on a proper set of drawings out of the number that were sent in.

One of the Competitors.

*** In reply to inquiries, we learn that the building committee have not yet come to a decision.

The Turner Gallery.—We have read of a conclave of grave grimalkins appointed by certain dissatisfied little mice, to deal justice amongst them in the matter of a junk of cheese left amongst them as a legacy. The result we need not enlarge on. It is to be hoped that the Turner Gallery that is to be, will be more likely than the cheese to survive the "law and justice" that are hard at work upon it. *In causâ* Trimmer *v.* Danby,—Mr. Swanston, Mr. Chandless, Mr. Follett, Mr. Hallett, Mr. W. Morris, Mr. Wickens, and Mr. W. H. Terrell, all appeared for "parties" interested, at a hearing on the 25th ult. before Vice-chancellor Sir R. T. Kindersley, in respect to the pictures, which, pending this suit, are in the custody of Mrs. Hannah Danby. Shortly before the long vacation, the question of their preservation was discussed by the gentlemen of the long robe; it being feared that from damp and otherwise they would suffer before their destination in the suit could be determined. This question was referred to Mr. Hardwick, Sir Charles Eastlake, and Mr. C. Stanfield, who reported that many of the pictures were damaged from causes existing previously to Mr. Turner's decease; that it would be advisable to keep them free from damp: and that if they could not be properly attended to where they were, they ought to be removed elsewhere. This (his Honour observed) might have been before predicated, and in consequence he had written to them; and their reply was, that, considering the difficulty of finding a fit place for them, and in consequence of the serious illness of Mrs. Danby, they should be placed under the care of some respectable man in the house. The matter, he conceived, had better be considered by the counsel. These gentlemen agreed to consult together on the subject, and here the matter in the mean time rests; but we fear that the "destination" of the pictures is much more likely to be adversely affected by the "otherwise" than by the "damp," and that they are but too likely to meet with the fate of the celebrated *oyster;* in which case, all that will reach the "Gallery" may be the frames.

Secret Transmission by Telegraph.—Occasionally for some years we have heard of modes of secret transmission of messages by electric telegraph, but we are not aware that any of those recorded in our columns have ever been matured or brought into general practice. The *Official Venice Gazette* states that the Olympic Academy of Vicenza, having carefully examined the "discovery" made by their fellow-citizen Tremeschini (mentioned about six months ago) of electric telegraphy by secret transmission, has publicly declared it to be a most successful invention. The commission appointed to test its efficacy was composed of the councillor-delegate of the podesta, the superior commissary, and the academic council. The first experiment consisted in sending and receiving a despatch in the common way, without secrecy. In the second experiment, a despatch was sent secretly, and the answer received in the same manner, by the aid of the new apparatus. In the third, a despatch was sent openly, and the answer received secretly, to show that the secret apparatus might be used or suspended at will. The results of the inquiry are said to show—1st, That the apparatus of Tremeschini may be applied to Morse's telegraph; 2nd, That when the despatch is sent secretly, it can only be received so, any fraud in that respect being subject to immediate detection; 3rd, That secrecy may be suspended or applied at pleasure. This rather obscure account of it seems to savour a little of an *old* mode by means of invisible marks or writing, afterwards brought out by secret chemical re-agents.

Railways in the North: Inverness and Nairn.—There is still a sad want of railway communication in the north of Scotland. Nevertheless, our canny north-countrymen are making sure though somewhat slow progress. Having been bit in the rabid railway mania, they have gone to the other extreme, and leave promising speculations unappropriated. From Aberdeen to Huntly, the main eastern line is now on the way, and another link of the main chain, which will have the double advantage of constituting a portion of the more western route by Perth, as well as of that by way of Aberdeen, has been projected. This is a short line of 15½ miles, from Inverness to Nairn, which will run on a dead level all the way, and with scarcely a brook to cross. The landed proprietors are all of course favourable to the laying down of such a line, and Mr. Brassey, it appears, in conjunction with Mr. Falshaw, has not only offered to contract for the whole at little more than 4,000*l.* a mile for a single line (the rate hitherto of cost on the Scottish lines having averaged some 30,000*l.* a mile,—an immense difference), but has also agreed to take 20,000*l.* of the payment in stock, a pretty sure token that this is one of those lines which are destined to form a portion of the established railway route of the country. We hope, ere very long, to be able to ride by rail from the Land's-end to John o'Groat's House.

The New Cemetery at Finchley for St. Pancras.—The foundation stone of the church of the first extramural cemetery for the metropolis under the new state of things was laid on 24th ult. by the vicar of St. Pancras; and the foundation stone of a Dissenting chapel for the same cemetery will be laid by a Dissenting clergyman, to be appointed by the general body of Dissenting parishioners, in a week or two. The cemetery comprises about 86 acres, heretofore known as the Horseshoe Farm, and is said to be a fine spot, full of gentle undulations, and will be appropriately laid out and planted. The authorities of St. Pancras Cemetery, under the new Interment Acts, have entered into contracts for the erection of both the church and the chapel, which latter will be of equally elegant, though appropriate style. The whole of the buildings, which are from designs furnished by Messrs. Barnett and Birch, architects, will be in the Decorated Gothic style, the Episcopal Chapel (or Church) surmounted by a tower and spire, the whole height being about 100 feet. The Dissenting chapel is a hexagonal building, with an open stone lantern at the top. It is intended that both church and chapel, and a part of the ground, having been consecrated, shall be opened for the purposes of interment in the month of June next. The Vicar, in his address on laying the stone, remarked that one hundred years ago, or little more, St. Pancras was a rural parish. Its entire population at that time did not exceed the average number of the present inmates of the parochial workhouse, about 1,200: it now reaches, at least, 175,000, and is believed to be increasing at the rate of 5,000 annually. The number of deaths registered within the parish during the last year amounted to 3,826; the number of interments in the parochial burying ground 1,230, or nearly one-third, and about the same number must have taken place in certain grounds pertaining to other parishes within the limits of St. Pancras, together with Kensal-green and Highgate Cemeteries. There are six or seven burial grounds in St. Pancras, parochial or nonconforming, from which no such return is made: when, therefore, all these grounds shall be closed, for which, in almost every instance, an order in council has been already issued, it can hardly be reckoned that fewer than 2,000 bodies will be annually deposited in the parochial cemetery.

The Northern Strike and Turn-out.—This most lamentable misunderstanding is not yet at an end. A memorial, adopted at a general meeting of delegates, has been transmitted to Lord Palmerston. The document commences by an acknowledgment that nothing can be more detrimental to the manufacturing and commercial interests than the anxiety, agitation, and confusion which pervade their districts, as they destroy that harmony and equilibrium so necessary for the peaceful progress and development of skill and ingenuity; and that a serious responsibility attaches to those who, by a disregard of reason and justice, have brought about this state of things. At great length it recapitulates the views of the dispute which the operatives have always put forth, commencing with the reduction of wages in 1847, and charging the responsibility of the dispute in a very large measure upon the conduct of the masters, many of whom the memorialists complain had treated their people with contempt and insult. The address then hints at the possibility of disturbance of the peace of the country, and concludes by saying, "We submit, for your consideration, whether your lordship can adopt any measures calculated to lead to an arrangement. We feel that at present the responsibility does not rest with us. If we have been unfortunate and called meetings, and formed organisations, who set us the example? If we have appealed to public opinion, and enlisted its sympathy, who showed us the value of it, when it could be used for their own peculiar purposes? If we have collected amongst ourselves some few hundred pounds in a week, who used to give their thousands? If we were so foolish as to believe trade was good, who told us so? Or if we wished to enjoy its blessings, who told us that we were certain to participate in them? Why, my lord, the very men who are now punishing us for following their example, and placing credit in their honour and their word."

Drainage of Ramsey, Hunts.—On Monday last tenders were delivered for the proposed improvements in the drainage of the town of Ramsey; Mr. George Allen, architect. They were as under, viz.:—

Stredder (Kensington)	£4,198	0	0
Bennett and Son (Whittlesey)	2,998	0	0
Wilkinson and Co. (Grantham)	2,611	5	6
Bateman (Ramsey)	2,490	0	0
Booth and Lunn (Boston)	2,365	10	0
Wright and Co. (Alfreton)	2,140	0	0
Coker and Oakes (Ware)	2,095	10	0
Garrett (Peterborough)	1,950	0	0

It is proposed to commence the works immediately, and thus insure to the town a thorough and effectual drainage.

Macclesfield Health Report.—At the end of their first year of office, the Local Board of Health and Improvement Committee at Macclesfield have issued their report, which does them great credit, and affords an excellent example of the immense amount of good which may be done, with hearty goodwill and activity, though with comparatively small means. The income of the board amounts to little more than 4,000*l.* derived from three rates of 6d. each in the pound, and with this they have already formed and repaired sewers and drains in twelve streets, widened streets in seven different instances, and increased the lighting of them, macadamized roads, removed various nuisances, whitewashed numerous cottages, &c. and regulated all the lodging-houses in the town—itself an Augean labour on a small scale, which, so far as it extends, seems to have equalled the horrors of St. Giles's, or any other of the blackest spots about London. The Board have also exerted their power over house-owners by rejecting plans for twenty-two houses, and approving eighty-seven, laid out apparently under a salutary sense of the veto of the Board. Various other onerous duties have been performed, and the report under notice presents suggestions which it would be well such local Boards as that at Reading, and not a few others we know of, would study.

The Hydraulic Ram.—My attention has been called to an article in your paper of October 1st, on an improvement in the hydraulic ram made by an American, whereby it can be made to throw up different water to that which works the machine. Now, I am not so incredulous a person as not to know that the ingenuity of man may perform wonders in hydraulics, as well as in other sciences; but, having tried experiments with the ram, I may say, when I used vulcanized India-rubber, which I suppose is the article used for the flexible diaphragm mentioned, that though it worked very well for a few hours, on taking the ram to pieces, I found the flexible material all in shreds, and useless. The continual blow of the ram is so great, that when I have to raise the water 100 feet high (which is by no means high for a ram,—I have raised water 300 feet high with it), nothing but strong iron, well proved, and gun-metal, will stand the test; consequently I should never think of using so fragile a substance as leather, rubber, &c.—F. R.

The Stourbridge School of Design.—The anniversary of this school was held on Tuesday in last week. Lord Ward presided, and there was a numerous attendance. A brief, but pertinent address, was given by Mr. J. H. H. Foley, M.P. the patron of the school, who said that, taking into consideration the circumstances connected with the establishment, the exhibition he thought very satisfactory. No one, he observed, could deny that Stourbridge was importantly situated in connection with the trade around it, and more particularly with the glass trade; and it was now also generally admitted that there was a deficiency in England, as compared with other countries, in elegance and correctness of form and shape, which add so much to the beauty and attraction in the productions of other countries; and that the cause of such deficiency arose from the greater facilities given by them for study and education through the means of schools of design. It was, therefore, a wise and prudent act of the Government of this country to endeavour to remedy the defect, which was becoming a subject of national loss and disgrace. This school had only been open for a year, and the exhibition reflected great credit upon the pupils; and, considering their number and the time they had been taught, the drawings would bear a comparison with other schools, and particularly the drawings of the young ladies of the town and neighbourhood. Mr. Foley stated that it was his intention to propose to add all the 100 boys of the Oldswinford Hospital School, after Christmas, to the number of pupils at the School of Design.

The Accident, Walham-green.—The cause of the house falling here appears to be "unequal pressure at the angle, on a sandy foundation saturated with water." I perfectly agree with you in the remarks of the *Builder*, No. 564. I have done all in my power to improve the *morality* of speculative builders, and I have also been to the ground-landlords, who, I have found, seem little inclined to interfere.—A District Surveyor.

Falling Houses: Blame to whom Blame is due.—While the scamping speculating builders are to blame, they are only so in the *second degree:* the *purchasers* of houses are most to blame: they will not give anything like a fair value for house property: consequently, to meet the scandalous offers of capitalists, the builder is obliged to have recourse to scamping or the Bankruptcy Court. In one sense it is no matter how badly houses are built: they are then too good for the prices offered, and which the necessities of the builder but too frequently compel him to accept. For two houses which cost me 1,000*l.* a capitalist had the audacity to offer me 700*l.* and thought it a "very good price!"—A. B. C.

A LABOUR PARLIAMENT.—The leaders of the working classes in the Manchester district, persuaded of the futility of all efforts by isolated bodies of working men to maintain what they consider a just standard of wages, and to emancipate labour from capital, have set on foot, in Manchester, as a centre, a movement to bring about a national organisation of the working classes, to be guided by one directing body, whose object shall be to centralise and confederate their strength. This "new power in the state," as they call it, is not to supersede the trades' unions and combinations, but rather to be representative of them. It is to be composed of delegates elected at public meetings in the various towns, and its comprehensive duties are set forth in resolutions passed at a meeting already held to introduce the project, at the People's Institute, in Heyrod-street, Manchester. The meeting was presided over by Mr. Cropper Clarke, and a committee of twelve working men, with power to add to their number, was appointed to carry out the resolutions. The meeting was addressed at some length by Mr. James Williams, and also by Mr. Ernest Jones, and their chief argument was, that the working classes were entitled to, and will now demand, a share in profits; that they have never yet had their share of profit, because profit is alone that which remains after the payment of all necessary expenses, whereas the wages of the working man have hitherto been no more than barely sufficient to supply him with food, clothing, and the necessaries of life. "As this remuneration has only been enough to keep the human machine in working order," urged the speakers, "it has no more been profit than has the amount of money expended in supplying fuel for the steam-engines been profit to the manufacturer."

THE WORCESTER SCHOOL OF DESIGN.—The second annual meeting of the friends and subscribers to this institution was held on Monday in last week, at the Music-hall, Worcester, when about 800 persons were present. Lord Ward took the chair. The report set forth, that during the past year the institution had continued to make encouraging progress. No fewer than 278 students had received instruction: 239 was the largest number that had attended in any one month; and 192 was the average monthly attendance; being an increase over the first year of forty students in regular attendance. The revenue for the year, including the Government grant of 150*l.* was 720*l.* 6*s.* 7*d.* and the expenditure 570*l.* 2*s.* 10*d.*; balance, 150*l.* 3*s.* 9*d.* Mr. Cole was present, and addressed the meeting. Amongst other probable causes of the success of the Worcester school, he remarked, that he had noticed that in cathedral towns, and other places where a love of art had been engendered by the constant beholding of the works of the middle ages, these schools were generally flourishing. An old grey cathedral, with its beautiful remains of antiquity, had no doubt a very humanizing tendency, and could not be too highly appreciated. It had been a subject of discussion as to the propriety of admitting females to the school. There was hardly a more important object contemplated by the Government Department of Art than that of the education of females. By a kind of barbarity and selfishness among the lords of creation, women had been excluded from a source of profitable employment which ought to have been and might have been most appropriately assigned to them. He alluded to the selfish jealousy which pervaded the Staffordshire Potteries against the introduction of women into the porcelain trade. The opening these schools to all classes willing to receive art-education was advocated. It was not merely the education of the artisan that was required;—the masses of the people must be educated likewise, for thus only were the improved productions of taste and *vertu* likely to be appreciated. The purchaser or consumer stood in need of education as much as the producer; and on this point he read some quotations from the works of Mr. Ruskin. Mr. Redgrave also addressed the meeting.

THE CLERK OF WORKS AT GENERAL POST-OFFICE.—We have to mention the death of Mr. John Fortune, who was clerk of the works at the General Post-office, St. Martin's-le-Grand, at the period of the erection of the present building, and remained there in the same capacity up to the time of his death, acting under Mr. Sydney Smirke. The appointment is with the Commissioners of Woods.

STEAM-HAMMERS.—Messrs. Balmforth, of Clayton, Lancaster, ironmasters, have patented some improvements relating to steam tilt-hammers, and which consist mainly in the employment of an oscillating steam-cylinder, having its piston-rod connected direct to the helve of the hammer-head, and beneath the helve in such a position as to allow clear access to the hammer from all sides. The axes on which the hammer tilts are furnished with screw bearings, to enable one side to be raised more than the other, and thus allow of irregularly-formed masses being forged. A modification of the machine enables it to be used for riveting.

THE ROYAL SOCIETY.—The anniversary of this society was held on the 30th ult. the Earl of Rosse, president, in the chair. His lordship delivered an able address; after which the Copley medal was presented to M. Dove, of Berlin, for his work on the distribution of heat over the surface of the earth; and the Royal medal to Mr. Charles Darwin, the naturalist, for his works on natural history and geology. After the meeting, the Fellows of the Society and their friends dined together at the Freemasons' Tavern, the Earl of Rosse, president, in the chair, when the Lord Chief Baron, Mr. Bell, and others, made pleasant speeches. Mr. Tite is one of the new members of council.

THE TIMBER TRADE IN VAN DIEMEN'S LAND has so rapidly increased, that orders have been sent to England for as many as fifty saw-mills. "The average of the weekly earnings of diggers," says the local *Colonist*, "bears no comparison with an equal number of our Huon sawyers. This is a well-authenticated fact."

RISING TALENT.—The young son of Mr. Peake, of Staffordshire, whose name must be known to most of our readers, exhibited a very creditable copy of "Christ restoring Sight to the Blind," by Caracci, amongst the studies made in the School of Painting, at the British Institution, Pall Mall.

WANT OF DWELLINGS FOR THE WORKING CLASSES.—Dr. Gavin, in one of his reports to the Central Board of Health, says, "In Dundee, as in every place I have officially visited, Newcastle, Gateshead, Walker, Howden, Felling, Houghton, Blyth, Cowpen, Chester-le-Street, Hexham, &c. the greatest want is the want of dwellings. It is difficult to believe the extent to which this want prevails in all quarters. While every branch of remunerative industry seems to be most assiduously pursued, the building of houses for the increased population, brought together by the various industrial pursuits, has been almost, and in many instances, entirely overlooked. Dundee forms a striking example of this. While the houses of the gentry have increased, the increased working population have been crammed into nearly the same number of old and badly-constructed houses as existed before the increase of the population. As a rule, these houses may be said to be undrained, destitute of any accommodation, except that public sort which I have described, without places for the reception of domestic refuse, with unpaved yards, or bouldered pavements in the entries, pends, and closes, and with the surfaces of these yards and of the pathways loaded with the refuse of life, which is frequently moved to and fro by public traffic, but rarely moved away by the scavenger." There is a stir throughout the whole country now in favour of thorough sewerage and drainage, and pure water supply, and we hope that our past and future endeavours to excite a further movement in favour of a complete revolution in the dwellings of the poor and the industrious will be crowned with the like success, of which there are already promising signs. Here builders themselves have a fair field, and a fine one, for profitable speculation, would they but give it a proper trial.

TENDERS

For building twenty cottages at Bromley, for Mr. John Fisher: Mr. A. E. Taylor, surveyor:—

Elston	£3,950	0	0
Richardson	3,950	0	0
Hack and Son	3,860	0	0
Haynes	3,850	0	0
Richelieu and Niblow	3,800	0	0
Blackburn	3,789	0	0
Watts	3,257	0	0

TO CORRESPONDENTS.

"T. L." "E. R." "S. S. T." "O. H." "P. and Son." "C. W." "J. E. G." "F. L." "B and C." "J. T." "A Citizen Subscriber." "Mr. S." "W. B. M. L." (a painted window unquestionably. A reply to the other inquiry would need more words than we can give at the moment). "Messrs. C." "W. L." "W. M. B." "W. N. P." "J. H." "O. H. O." "H. S." "R. R." "H. H." "R. L. S." "A Builder."

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

TO ARCHITECTS, ENGINEERS, SURVEYORS, AND BUILDERS' CLERKS.

THE PROVIDENT SOCIETY of BUILDERS' CLERKS will hold the next GENERAL MEETING at their offices, the London Mechanics' Institution, Southampton-buildings, Chancery-lane, on WEDNESDAY EVENING, DECEMBER 7, 1853, at EIGHT o'clock. The attendance of clerks is earnestly desired. Rules may be had by application (post-paid) as above, to

ALFRED COLVEN, Hon. Sec.

HOTEL at BIRMINGHAM.—The Directors of the London and North-Western Railway Company invite proposals from persons desirous of taking the Hotel at the New-street Station, Birmingham. The plans, as also an authority to inspect the building, &c. may be obtained on application to the Secretary, at Euston Station, London; or to Mr. HENRY MORGAN, New-street Station, Birmingham.—By order,

CHARLES F. STEWART, Secretary.

Euston Station, 29th November, 1853.

MANAGING CLERK WANTED, for the Royal Investment Society, 23, Pall-mall, London. No one need apply who is not familiar with the practical working of building and freehold land societies, and skilled at correspondence. Commencing salary 100*l.* a year.—Applications to be made, by letter only, to WILLIAM BRIDGES, Secretary.

MANAGER WANTED.—A Person competent to take the entire Superintendence of a Timber Business and Preparing Works. He must be a thorough man of business, understand the management of men and accounts, and of good character. The salary will be liberal, and increased according to the energy displayed. A house will be found him, as he will be required to live upon the premises. Security will be required.—Address, by letter only, with real name and reference, to R. S, at Mr. Hills, Stationer, corner of Acton-street, Gray's-inn-road.

MANAGER of a GENERAL ENGINEERING WORKS and FOUNDRY.—WANTED, a first-rate man of business, quite competent to undertake the above situation, to whom a good salary will be given. His testimonials as to ability and character must be undeniable, and his age under forty.—Apply by letter, to B. at Kateseross Iron-works, Reading.

CLERK of WORKS WANTED, well acquainted with Gothic Architecture.—Apply by letter, post paid, to Mr. G. W. HAINES, 38, Moorgate-street.

SAW-MILL FOREMAN WANTED.—Address, stating qualification and wages expected to P. ST. QUINTIN, 2, Charlotte-row, Mansion-house.

TO BUILDERS' FOREMEN.

WANTED, in the Country, a GENERAL FOREMAN; a carpenter and joiner by trade, and one who has been used to a jobbing business would be preferred.—Address, A. B. Post-office, Uxbridge, stating age, salary, and references.

TO BUILDERS, CONTRACTORS, AND OTHERS.

WANTED, by a Carpenter and Joiner (a young man), to take charge of a job. Can make finished and working drawings, take out quantities, and also the usual routine of a Builder's Office.—Address to J. J. A. P. North Star Coffee-house, Gray's-inn-road.

TO ENGINEERING AND ARCHITECTURAL DRAUGHTSMEN.

WANTED, a gentlemanly young MAN in the above capacity. Salary, 10*l.* a month.—Address, ALPHA, care of Mr. Panton, 13, Piccadilly.

WANTED, a handy SMITH, capable of erecting HOT-WATER WORKS. A constant job will be given to a steady man in the above line. No objection to a man from the country.—Apply to ALFRED MAY, No. 50, Devonshire-street, Queen-square, London.

WANTED, in a Builder's Office, a Middle-aged Man as CLERK and good accountant; can make good working drawings, &c.—Apply by letter to W. B. Office of "The Builder," stating salary required, and where last employed.

WANTED, in an Architect's Office in Westminster, an OFFICE LAD, of good character, who can write and spell well. Wages, 5*s.* a week.—Apply in own handwriting, giving reference and stating age, to Mr. Saunders, 2, Poet's-corner, Westminster.

TO BUILDERS' FOREMEN.

WANTED, by a Builder in London, an active, intelligent Man as YARD FOREMAN. He will be required to superintend timber framing and rough carpenters' work.—Address, stating age, particulars, where last employed, and wages, to M. A. Office of "The Builder."

TO PLUMBERS AND BUILDERS.

WANTED, by a Young Man, who thoroughly understands his business, a SITUATION as PLUMBER. Can fill up his time with painting, &c. Reference from his present employer. No objection to the country.—Address, J. BLACK, 3, Cranford-place, Goldbath-square.

WANTED, a SITUATION as NIGHT-WATCHMAN, by a respectable Person, with eleven years' character. No objection to the care of a couple of fire-engines.—Apply to W. H. City Saw-mills, 31, James-street, City-road.

TO ARCHITECTS AND SURVEYORS.

WANTED, an ENGAGEMENT, by a clever and experienced Draughtsman, aged 30, accustomed to fair and working drawings, and the general routine of office work. Address, Y. Z. Mr. Jackson's, Stationer, near the Town Hall, Borough.

WANTED, by a Young Man, a Situation as CLERK, a good arithmetician, well versed in accounts, and thoroughly understands book-keeping. Unexceptionable references can be given, and security if required. No objection to the country.—Address, Z. D. Office of "The Builder."

TO ENGINEERS.

WANTED, a SITUATION, by a Young Man, who has served his time to the practical part of his business and mechanical drawing; he has just completed an engagement in an engineer's office, can make finished and working drawings, would have no objections to make himself useful at the practical part of his business if required. Wages not so much an object as a permanent place. Unquestionable reference given.—Address, A. B. Office of "The Builder."

TO BUILDERS, &c.

WANTED, by the Advertiser, who has had some experience as Time-keeper to a Builder, EMPLOYMENT in the same line, or any other in which he could make himself useful. Can be well recommended. No objection to town or country.—Address, T. W. 46, Orange-street, Bethnal-green-road.

TO GAS ENGINEERS, PLUMBERS, AND BUILDERS.

WANTED, a SITUATION as PLUMBER, GASFITTER, or to take the Management of small Gasworks.—Address, W. J. O. Office of "The Builder."

TO ARCHITECTS AND SURVEYORS.

WANTED, an ENGAGEMENT in either of the above offices, by a Gentleman who has been accustomed to setting out working and detail drawings, specifications, &c. and who also understands land surveying and levelling.—Address W. W. Mrs. Norton's Newspaper-office, 22, Cumberland-market, Regent's-park.

WANTED, by the Advertiser, an ENGAGEMENT in an Architect's, Surveyor's or Builder's Office. He is well acquainted with drawing, and the general routine of office work. Testimonials and references the most satisfactory can be given.—Address, E. J. H. at Mr. Ogg's, Post-office, Gray's-inn-lane.

TO ARCHITECTS, ENGINEERS, &c.

A GENTLEMAN, who is thoroughly acquainted with every branch of drawing required in the above professions, and is himself in practice in one of them, and well versed in the higher mathematics, is willing to FILL up HIS TIME and that of his ASSISTANTS in preparing, at his own offices, detail, perspective, or other drawings; copying specifications and quantities, making mathematical calculations, &c.—Address, F. H. K. Office of "The Builder."

TO ARCHITECTS AND SURVEYORS.

AN Architectural Assistant, of first-rate ability as a draughtsman and designer, and having a thorough practical knowledge of building in all its branches, desires a SITUATION as ASSISTANT, or to take the MANAGEMENT of an OFFICE. Is well acquainted with surveying and levelling. Address, X. X. 1 Villa-row, Walworth-common.

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AN Assistant, as Clerk of the Works, or otherwise, is open to an ENGAGEMENT. He has had six years' practical experience, and has been accustomed to prepare plans, specifications, measurements, &c.—Address, S. W. M. T. Post office, Uxbridge Middlesex

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A DRAUGHTSMAN is desirous of a RE-ENGAGEMENT in a London office. Understands perspective, the getting out of working and finished drawings, &c. and the general routine of an office.—Address, A. B. No. 5, Eliza-street South, Pimlico.

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TO ARCHITECTS, &c.

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A YOUNG MAN, aged 20, wishes for EMPLOYMENT as an IMPROVER, in the Carpentering or Joining trade.—Address, C. B. 23, Kensington-place, Westminster.

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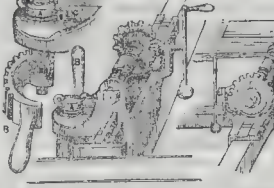
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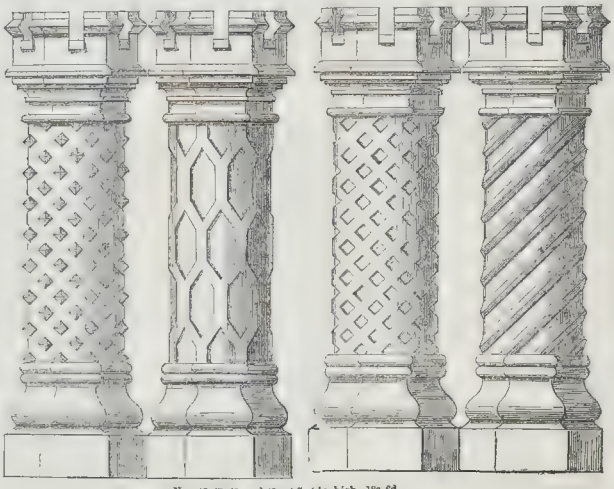
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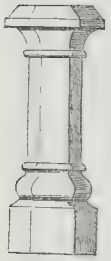
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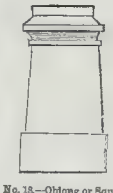
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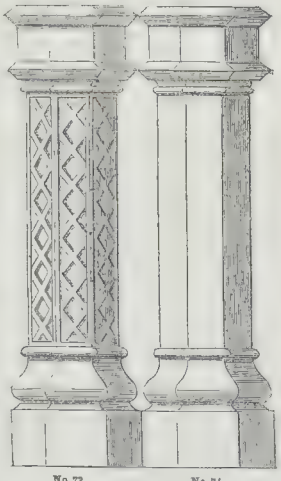
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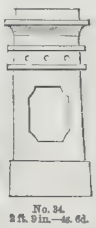
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The Builder.

SATURDAY, DECEMBER 10, 1853.

IN 1849, statistical details, partially ascertained, induced the suspicion that impure water was one of the main sources of the choleraic virus, and it was resolved that should we unhappily be visited with the scourge again, this suspicion should be either verified or disproved by further investigation. In consequence, we find, in a supplement to a recent report from the Registrar-General for the Metropolitan Districts, some important statistics, which go far to show that there *is* a decided connection between the source of water supply and the prevalence of cholera. The subject, however, it must be noted, is mixed up with the ascertained connection of lowness of elevation of site generally with liability to cholera, but even this may resolve itself we had almost said *must* resolve itself—into the twofold source of probable virus, in impregnation both of air and water. The very poison which pervades the water, in all probability also pervades the air; and, according to the density of that virus, the lower the site the more fully impregnated will both the air and the *water supplied from the same level* be; for as respects water, it is clear, for instance, that the lower the Thames water falls, the impurer it becomes; that water falling from any elevated water-shed must be purer the higher its level; and as respects air, if the cholera virus consist in such impurities from decomposing organic matter as those also contained in water, it will clearly, in the first place, be through the lower stratum of the air resting on the earth, that such impurities as decomposing vegetable and animal matter will be absorbed, and we have not faith enough in the law of the mutual diffusion of gases to believe that such matter, even though gaseous, will not *remain in greater quantity* in the low levels of the atmosphere than in the higher. Our impression, on the contrary, is, that they will even sink from higher to lower levels, and intensify there.

That cholera actually prevails more in low atmospheric levels than in high, as well as more in districts supplied with water from lower than from higher sources, will appear from the following table, presented as the first fruits of the investigation, in respect to its connection with impure water, lately published in the supplemental report referred to:—

Water Companies.	Sources of Supply.	Elevations of Districts supplied in Inhabitants feet above High-water Mark.	Deaths to 100,000 Inhabitants in twelve weeks ending Nov. 12.
LONDON		—	27
Hampstead and New River.	Springs at Hampstead and Kenwood, two artesian wells, and New River.	80	4
New River	At Chadwell Springs in Hertfordshire, from river Lee, and four wells in Middlesex and Herts.	76	8
Grand Junction.	The Thames, 360 yards above Kew-bridge.	38	13
Chelsea	The Thames, at Battersea.	7	18
Kent	The Ravensbourne, in Kent.	18	20
West Middlesex.	The Thames, at Barnes.	72	26
East London	The river Lee, at Lee-bridge.	36	29
Lambeth and Southwark.	The Thames, at Thames Ditton and at Battersea.	1	56
Southwark	The Thames, at Battersea.	8	85
Southwark and Kent.	The Thames, at Battersea, the Ravensbourne in Kent, and ditches and wells.	—	101

It is believed, that through almost the whole of this table the impurity of the waters with which the inhabitants of the several districts are supplied is in nearly a direct proportion to the mortality from cholera. The constant association of cholera with water, too, in other aspects,—with the courses of rivers, for instance, up which it creeps from their lowest levels or outlets,—is well known. But here, too, we may trace the same mischief in the atmosphere which fills the valleys of these rivers, if we consider it in the light just presented: in short, the fœtid or other poisonous impregnations arising from decomposing vegetable and animal matter, are soluble both in air and in water, and defile them both; while, indeed, if Schönbein be correct, it is in the atmospheric solution mainly of course that they are ordinarily neutralised by the ozone of the atmosphere, believed to be deficient during the prevalence of cholera.

If ozone, or active or electrified oxygen, be so essential a scavenger of nature as it has been represented to be, might not even water be defecated, or its choleraic virus be destroyed, by the infusion of a little of some powerful and active form of oxygen into the water itself,—such as a few drops of free nitric or sulphuric acid? It is known that sulphurous acid, or the fumes of burning sulphur, constitute an excellent disinfectant in typhus fever; and such "hydras dire" as sulphuretted and phosphuretted hydrogen must be completely neutralizable by these fumes, the oxygen of the one uniting with the hydrogen of the other, and utterly destroying them. For this reason we strongly recommend frequent fumigations of dwellings, areas, court-yards, and gardens, simply with the fumes of burning sulphur, as a very cheap as well as assuredly effectual disinfectant, of all such noxious miasmata, at least, as are likely to infest the precincts of human dwellings. Sulphurous acid fumes will hang in the air for a long time, and meet the enemy there face to face in deadly strife, without anything particularly disagreeable to the nostrils, except when he'd inadvertently above the chafing-dish or other utensil in which the sulphur is burning, and in which, by the way, it may be readily kept burning, even in the coldest weather, by help of a red-hot poker. In cases of typhus fever, Dr. Graham has found such fumes to be more effectual as a disinfectant than anything else. It is a singular circumstance, too, that while sulphuric acid has been quite recently discovered to be actually an important cure for cholera itself, either sulphurous or sulphuric acid will be found to have been highly esteemed by the medical faculty of the last two centuries as a cure for plague! We may also mention the fact, as an interesting one, corroborative of the idea that the fumes of sulphur might be of essential service as a protective against cholera, that although from recent causes greatly intensifying the predisposition to cholera in one particular part of the town of Luton, that town, which is the head quarters or capital of the straw-plait and bonnet trade, in which sulphur must be constantly converted, in most of the private dwellings, into fumes of sulphurous acid, was perfectly free from cholera both in 1832 and again in 1849. Moreover, the fact must be familiar to all who have ever had correspondence transmitted through countries or districts infected with plague (at least it used to be so), that letters, &c. in such cases smelt strongly of sulphur, its fumes, in fact, having long been used as a disinfectant in plague—as, for instance, in our Lazarettes. As for injury to metallic or other articles within a dwelling, sulphurous acid must be much less injurious than chlorine, a very usual disinfectant, and it is much cheaper as well as practically more effectual.

Prevention, however, is better than cure, and with that end in view, our water supply must be searchingly looked into.

THE CITY MEMORIAL OF WELLINGTON.

THE six selected designs for the City of London monument to Wellington, did not gratify us to the extent we anticipated. The names of the artists, Messrs Adams, Behnes, John Bell, Foley, Raymond Smith, and Evan Thomas, would lead to the belief that there must be something good in each; and so there is; but we are nevertheless glad to hear, that no one of them is to be executed, but that the artists thus selected, and to a certain extent paid, are to reconsider their designs, and enter into a fresh competition amongst themselves in March next. The models look very much as if they had been moved from St. Paul's. One "Fame," one "Britannia," one "Peace," "The Duke," and a "Genius of the City," are the materials which have been variously mixed according to the taste of the mixer. Those by Mr. Foley and Mr. Adams made, perhaps, the strongest impression on us, though the falling Spirit of War in the first has a particularly uncomfortable look.

Mr. Bell's arrangement is scarcely worthy of his former works: the Duke stands on a bracket, and figures of the allegory recline below on two French scrolls, forming a broken pediment. Mr. Behnes keeps the whole subsidiary to the figure of the Duke, and doubtless has partisans.

It is to be regretted that the Corporation did not afford facilities for the inspection of all the designs which were submitted to them.

THE MANCHESTER WELLINGTON STATUE.

WE mentioned, a fortnight ago, that the selection in this competition had not given satisfaction; that an equestrian statue was preferred, and that a model, by Mr. John Bell, had been received with favour. This feeling continues to increase. We do not remember a case wherein public opinion has so unmistakeably pronounced in favour of an artist in opposition to the decision of the judges. Of the 23,000 persons who visited the models during the week they were exhibited, it is asserted that 20,000 were of one mind. We say judges: but it appears that the onus rests with the Bishop of Manchester, Lord Ellesmere having been ill. If this be correct, there is the more reason for a reconsideration of the matter. Mr. Bell's model is certainly a very fine one. It represents the warrior in the act of command, as at Waterloo: on the upper pedestal are rilievi, and on elongated projections at the angles of the base are figures, holding up wreaths, emblematic of the scenes of Wellington's victories—India, Spain, Portugal, and Belgium. These, the four rilievi, the decorations above, and the statue of Wellington, are proposed to be in bronze: the masonry is red granite.

Compared with the selected design (Wellington on foot, habited as a civilian, with two seated figures in front, labelled Valour and Wisdom), there cannot be a doubt as to its superiority: and as the committee have money enough for the erection of the equestrian group (7,000*l.*) we sincerely hope that the question will receive further consideration. Apart from comparison, the chosen statue seems to us a mistake. That *Manchester* should erect a monument to Wellington as a *statesman* would be almost absurd, and show the strangest ignoring of principles. It is Wellington the great commander, through whose doings in the field came peace and progress, they would, justly, honour.

SHELL-CAMEO PORTRAITS.

FEW persons who go to Rome return without bringing with them some of the beautiful shell cameos which are produced there, and it has often been asked why it is that artistic talent has not been applied in this direction in England, considering that the shell out of which they are cut is as readily obtainable here as in Italy. "Cameo," we may remind the reader, was originally the designation of a particular sort of onyx, in which figures and representations of landscapes appeared naturally. It has come to be applied to all gems or stones in which the object is worked in rilievo, in opposition to "intaglio," in which the subject is indented. The ancients have left us most marvellous

works of this kind, but the time they occupy, the increased value of artistic labour, and the consequent great cost of what can be appreciated only by a few, have led to the disuse of the art.

The working of *shell* cameos is a very different matter, so far as regards the mechanical portion of it, and might be pursued with success, we should imagine, especially by ladies. The skill possessed by Miss Pistrucci and her sister in the production of true cameos is an instance in point.

We have lately seen with much pleasure some shell-cameo portraits produced at moderate cost by Mr. H. Hayler, of Ampton-street, Regent's-square, a young sculptor who has been applying himself for some time to this branch of art. The likeness is good in some subjects known to us, and they display a considerable amount of artistic ability. It is pleasant to aid in the development of talent, and we shall be glad if this notice of Mr. Hayler's productions should lead to two or three commissions, which may enable him to give time and thought to the production of some really good works.

THE MANSION-HOUSE CHAPEL, CAMBERWELL-GREEN.

Our readers must have observed the efforts which are being made by the Congregationalists throughout the country to provide places of worship; and that they may know the character of the buildings in progress we give a view of the new Mansion-house Chapel, on Camberwell-green, opened last week for the use of the Rev. John Burnet's congregation. The first stone was laid December 10th, 1852. Messrs. Wilson and Fuller are the architects (the design was selected in competition), and Mr. John Glenn, of Islington, is the builder. The length inside is 82 feet 6 inches; the width 50 feet; the height, to ridge of roof, 50 feet. The height of the turrets to top of the pinnacles is 90 feet. It contains on the ground-floor and galleries 950 sittings, in addition to the space reserved for Sunday-schools. It is built of Kentish-rag stone, with Bath-stone dressings. The approach to the galleries is by staircases in the turrets. The roof is open, and boarded upon the backs of the rafters. The large window in the north front is intended to be filled with stained glass. There are schools in the rear of the building, with class-rooms and vestries. The chapel and schools are heated with Cundy's patent stoves, and good ventilation is sought to be obtained by means of a shaft in one of the turrets, in which a gas-stove is kept burning. The cost of the building is nearly 6,000*l.*

CLASSICAL COLUMNAR ARCHITECTURE,

AND THE "STONES OF VENICE."*

So far from this architecture being unfit for sacred purposes, it is, as I apprehend it, more especially fitted for those than for any other,—more ready to form itself into the temple than the palace. The structural art, that is intrinsically the greatest, the most impressive by its inherent qualities, its universal and immutable associations, is what should enshrine the altar of God. This the Classic architecture can be demonstrated to be; and it will require more than the unsupported dictum of any writer to convince men who understand it, that this architecture will not embody all the moral elements or qualities that unbiassed men look for in a Christian temple. Being, as I remarked before, the architecture of proportion, and, in consequence, less dependent upon extraneous decoration, it is most capable of the solemn grandeur and repose befitting a religious edifice, and the expression of great and sublime ideas.

It will be found, moreover, that this character is capable of being combined with more popular qualities, and that a cathedral might be designed in pure Classic architecture, having all the impressiveness and solemnity possible to the style, that would at the same time be as picturesque in general outline as any monument of the Middle Age.

But supposing for a moment that we failed in proving the peculiar expressional fitness of this architecture for the sanctuary, surely it would be easy to show that there is, at least, nothing in Christianity *opposed* to it. It arose in the service of Paganism, it is true, but in integrity of heart, not in the spirit of fraud must its awful expression have been breathed into it,—otherwise no art-work had resulted; and there is here, at least, a phase of the beautiful, an expression of man's soul, no other style could embody. Can anything simply beautiful be irreligious—an object, the destruction of which belongs to the mission of Christianity? Surely Christianity is not averse to *anything* elevating and refining to the soul, or that emanates from the exercise of its higher faculties, though it may not harmonize with Mr. Ruskin's religious feelings, and though it be very different in character from that architecture into which the early Venetian poured his religious spirit. St. Mark's Church and the Byzantine Palaces are, doubtless, monuments of a pious age, which they truly express; but this fact is no condemnation of the Classic architecture as a vehicle of expression, either religious or secular.

Styles of architecture are beautiful in proportion as they truthfully and comprehensively mirrored the infinite nature around them, and were unperverted by the superstitious theories by which genius in most of the architectural styles of the world has been cramped and thwarted; and the greatest styles have been produced under the influence of the highest culture and most comprehensive grasp of nature, combined with the truest notions of religion. The styles in which these conditions have been most abundant, are the Greek, or Greco-Roman, and the Gothic. The latter, formed from the Roman, under the influence of a new view of nature, displayed, it is true, more sympathy with the actual landscape, with herb and tree, and a more direct appropriation of their forms than its original. Gothic edifices generally are strikingly arboraceous in aspect; spires and finials shoot up like plants, and resemble the living organized structures of nature, more than does any feature presented by the architecture of the Greeks, among whom, indeed, the feeling for the beautiful, embodied in natural scenery, was unknown; which is in harmony with the fact that landscape painting, as a distinct branch of art, had no place in Greece.

But it is not in direct resemblance to organic life that the vitality of an architecture consists. If it were, a small temple somewhere in India, the columns of which represent the hind legs of the elephant, would be the most rampant structure in the world. The life of an architecture consists in the embodiment, not of the forms, but of the spirit, of nature, and in the illustration of her laws.

What the Classic architecture wants is the mind that has fully penetrated the Greek spirit, and is capable of informing its work with the sacred fire of art; and it might be supposed unnecessary to tell one who had said so much about the spirituality of art, that, as in literature so in architecture, the merit of a work depends less on the materials the man of genius employs than upon his own mind: has not Mr. Ruskin himself declared in a former work,* "that a man who has the gift will take up any style that is going, the style of his day, and will work in that, and be great in that, and make everything that he does in it look as fresh as if every thought," &c.

To substantiate his allegations against the Greek portico, it is incumbent on him to furnish us with some new definitions of old words; for if the column theory I have advanced be a correct one, it is evident that it may be a useful, a living feature of architecture in any country or age; that so far from its being useless in England, there is no climate where it could be more useful. I believe there is scarcely a building could be erected, from the woodman's hut to the palace of the Sovereign, from the village meeting-house to the metropolitan temple—in which the portico would not be of the greatest use, administering at once to the comfort, convenience, and health of its occupants. It would neither be justifiable nor needful to introduce it for architectural effect only, utility as well as beauty demanding it to all buildings of any pretension, of whatever purpose. What was asserted some time since in a Paper in the *Builder*, that professors do not now gather their disciples under porticoes for instruction, we may readily grant; rheumatism, if nothing else, would put a stop to such a practice; but, formed with due reference to climate, they are otherwise quite as useful here as they were in Greece, if not more so. The Greeks and Romans needed them for shelter from sun only, we require them against both sun and rain: in the south they are but parasols, in the north they are umbrellas also. They add solid comfort to an edifice daily felt and enjoyed, for they exclude both rain and wind, if planned with due respect to the stature of man; *i. e.* of dimensions proportioned to the human height—a very reasonable condition; for we cannot expect a portico, the roof of which is some 60 or 70 feet high in the air, to afford shelter within any reasonable distance from its extremities.* I have called it the Greek portico, but, properly treated, it would be an English portico; and I consider that much of the ridicule thrown on the practice of classic architecture by non-professional men arises from our misnaming it; and that a most beneficial thing would be to do away with all distinctions of Greek, Roman, and Italian, and consider it simply as a compound of columnar and arcuated architecture, the elements of which form one great language handed down for our use. I say a great language; for it is not only the pure architecture of the Greeks, but the Greek architecture enriched by the arch, ennobled by the dome, and by all that modern invention has added to it. This language rightly applied to modern purposes in England, results in what we have a right to term Anglo-classic architecture. When it is so applied, we shall not need to say, in reference to buildings in England and the nineteenth century—"This is Greek;" "that is Roman;" "that Italian." They would naturally assume a Greek or Roman character, according as their purpose might correspond to that of the ancient structures; but truthful architecture erected in England cannot be Greek, or Roman, or Italian, because, if it *is* truthful architecture, it is English, whatever its elemental origin. The names of Greek, Roman, Mediæval, &c. belong to the history of the art, and should not attach to the style of the day, and will not, if we practise faithfully: an architecture that has been remoulded by the nature, life, religion, manners, and other influences around us—in which our own mechanic-skill and sense of beauty has had due influence, must be British architecture. Our architecture, wrought from the same original elements, would, doubtless, naturally resemble contemporary styles of Italy; but the difference in climate and other circumstances would ever prevent an identity of character, and our style would differ from that of Italy, just as the Norman style in England differed from the Romanesque or Lombardic in the same country.

What we have to do in architecture is to address ourselves to the new circumstances of society, and to erect such edifices as the scientific status of the present day and the exigencies of climate may demand at our hands, without violating the immutable laws of art: those sacred principles which guided the Greek and mediævalist, and all true artists, are to be our light in employing our art-elements to express our new ideas,—which elements the new circumstances under which they are used will constantly influence until the language itself becomes in a great measure a new one; for the indivisible mouldings or signs in architecture, though perfected in beauty by the Greeks and Romans, are not to be considered as fixed and rigid characters of expression like the conventional ones of verbal language, but as capable of much and varied modification and great freedom of application to meet particular shades of expression. In this they much resemble the spoken words of a language modified by the inflection of voice of an eloquent speaker, which may give to the words themselves a new significance.

It is thus the classic elements are to be em-

* See p. 722, *ante*.

* "Seven Lamps of Architecture."

* The capacity of the Classic portico for variety of treatment and application has been well set forth in a paper on the subject published in *The Civil Engineers' and Architects' Journal* for June last, by Mr. W. H. Leeds.



MANSION-HOUSE CHAPEL, CAMBERWELL.—Messrs. Wilson and Fuller, Architects.

ployed—fused down into the moulds of thought, and used as symbols to convey our *enlarged* sense to our contemporaries; and thus used—as a foundation for the operations of fancy and imagination, nurtured by history and poetry, and impelled by science, what new visions of architectural glory may again be realized!

There cannot be another Dorus—there is perhaps no great or sublime feature—no new order, or Corinthian capital—no grand arch or majestic dome, to call out of the intellectual chaos; but there is a glorious path, nevertheless, still open to us, which the earnest spirit of the present stands beckoning us to enter. We have ideas to express unknown in ancient Greece and Rome; ideas arising out of new institutions and improved habits, with more correct notions of the laws of health; and we have commensurate means of expression. We have resources opened to us in the remains of antiquity, and of all time greater than ever Greek or Roman knew. These we have to develope. It is ours to study their capabilities, and grasp the true principles of their combination. The spirit of architectural liberty is what a great statesman asserted of political liberty: "It seeks for duration and permanence; it looks before and after; and, building on the experience of ages which are past, it labours diligently for the benefit of ages to come." Fear not that the growing demands of civilization and refinement, and what improvements in constructive science entail, will disenchant our architecture, or exorcise the poetic spirit. Doubt not that the new features required by utility can be brought into the magic orb of the beautiful. I believe our national and peculiar requirements are so many additional means of expression, into which art ever stands ready to pour the leaven of beauty, and take up into her ascending car; so that, instead of a degraded, a higher and nobler series of works,—the product of a progressive art is generated.

But the prejudices of Mr. Ruskin, who has evidently closed his heart to the appeals of classic art, blind him to all this, as well to the inherent beauty and capacity of the style for abstract grandeur, as to its plastic and progressive properties. Of his being prejudiced, the *un*prejudiced reader will call for no argument in proof; for it seems to be a rule with our author,

a rule unlike other rules in being without exception, that whatever was done by the Byzantine and Early Gothic builders of Venice was "lovely," while everything done by modern and classic architects is base: their vices of style were disguised virtues—we have no virtues to disguise: they were right, for being ignorant and barbarous—we are wrong, because scientific and refined; dicta worthy of one who sees in masons' inaccuracies and blunders "an intense perception of harmony in the relation of quantities," or "evidence of the subtlety of Venetian feeling for ratios of magnitude."

Assuredly, however wanting in the Christian virtue of charity Mr. Ruskin's writings are elsewhere, he abounds in that virtue here, in estimating the merits of his favourite architecture. The assertion in describing a capital, that the leaves are drifted round it as by a whirlwind, is meant for praise; for in *his* school of builders defiance of all symmetry is a sign of life, an evidence of sincerity and earnestness of purpose.

And it doubtless *is* such, if savageness is a moral element of Gothic, and a disordered imagination an essential qualification in an architect. If practical defects are theoretical perfections, and unmeaning deviations and differences are to be construed into "singular and minute harmonies of proportion," the "architect's love of harmony and sublety of eye."

But the monotony of praise, if not relieved by occasional blame, is sufficiently so by greater extravagance; and the beauty of these discoveries is eclipsed by that in reference to the triangular ornament round the apse of the Murano Cathedral; wherein Mr. Ruskin's charity is particularly conspicuous, in seeing singular beauty where ordinary men would have seen but barbarism. "The curious zig-zag," he says, "with which the triangles die away against the sides of the arch, exactly as waves break upon the sand, is one of the most curious features of the structure;" as curious a one, it might be added, as a child would make who was for the first time entrusted with a pencil and slate, should he happen to hit upon such a fancy as the said ornament of Murano.

But this would probably be a recommendation to Mr. Ruskin, who delights in everything infantine, and whose faith in the wisdom and art-skill of the Venetian is boundless and untiring. In the most barbarous of his productions he sees nothing but life and truth; and if not beauty, the rich promise of it. Where he cannot trace him he generously trusts him; for when he comes to some piece of system so utterly senseless that even *he* cannot charm it into a beauty, he tells us the key of it is lost.

But there is worse than prejudice and narrowness of view in these volumes. There is uncandid criticism, unfair comparison of works and styles; and this very egotistically and arrogantly expressed. There is also something like claptrap in them: he appeals, in his first volume, from all established authority to the common sense of his non-professional reader, and deals *ad captandum vulgus* in elementary instruction. He has affected mysterious titles. "Stones of Venice," like the "Seven Lamps of Architecture," must have been a good whetstone of curiosity; and who unprepared by these would have rightly construed the sub-title "Sea Stories," or failed to expect from it something in a very different line—that, namely, of Captain Marryatt—a "Pilot" or "Peter Simple?"

Let me not, however, be unjust to Mr. Ruskin. It would be difficult for any man who was in earnest to write on a great subject without stumbling upon some truths; much more for a man of talent and genius like Mr. Ruskin—for such, I need not say, he unquestionably is. While I condemn his general theories, his insane adoration of a favourite style to the repudiation of all others; his confounding of piety and genius, together with his too frequent unaimiable and offensive mode of expressing himself; I yet recognise in his works much that is both wide and deep, and consider him capable of eminent usefulness, if he would take a more rational and sober tone, and withal a mecker one—one more in conformity with the temper of the Religion for which he is so zealous. We are indebted to Mr. Ruskin for awakening us to the absurdity of some of our practices, and perchance for some new facts of art-history, which would atone for much verbiage, and render his works valuable, if passion and prejudice, or something else that is inexplicable, did not lead their author into gross and pernicious extravagancies and errors; errors and extravagancies the more dangerous for being advocated with unusual literary power and sometimes a witching eloquence.

It is to his singular felicity of expression I consider that he is mainly indebted for the importance that has been attached to his opinions. Mr. Ruskin, like all reflecting and susceptible men, has his peculiar likings and dislikings. He loves the Byzantine and Early Gothic architecture; an architecture for many reasons perhaps grateful to his strong religious feelings. Other men have their likings, but not the same literary power and eloquence to defend them. Here I believe is the secret of his strength; and if so, the most important thing in reference to his works, and the one most likely to thwart any injurious influence they may be calculated to exercise, is, while recommending all architects and students to read them, to warn them against the attractions of his style: to remind them that oratory is but dress, the vestment, though a brilliant one, of our thoughts, and may become the garb of falsehood as well as of truth; and thus be useless, and worse than useless, though every muse had lent a grace to its adornment. The most valuable thing in the world, after a true and pure heart, is a solid judgment,—a quality that is not to be judged of by power or beauty of language: for fine writing and sound reasoning are two distinct things. A man may have great literary power and the most enchanting eloquence, and may nevertheless be devoid of sound critical acumen, and incapable of taking a large and comprehensive view either in science or art; or his judgment, not in itself weak, may be blinded by extraordinary strength of passion. The latter I suspect to be the case with Mr. Ruskin, which has led him so dogmatically and oracularly to anathematise the Classic style,—a style which, however deeply he may have drunk into the spirit of the Mediæval, I believe he really does not understand.

Many of his architectural theories it would be unnecessary to reply to, but for the eloquence with which they are advocated or associated, and which has passed with his reviewers generally for wisdom. His notions are for the most part unsupported by any reasoning or reference to principle, and not a few are impracticable. Besides which, much that he has told us has been taught before. He has given his attention too exclusively to detail,—to the minutiæ of design; for an accidence is of little use without the syntax of architecture, which he declines entering into, under the pretence that composition is not to be taught by express rules. In this probably he has acted discreetly, since it might be difficult to reconcile with its most simple and irrefragable laws such abnormities as we meet with in the ducal palace and St. Mark's, at Venice, for the general uncouthness of which edifices the most exquisitely carved capitals cannot atone to the eye of cultivated taste.

He says much, it is true, about proportion; but the proportion in which he delights is an invisible one,—that can only be discovered by measurement; and what he most lauds in the early architecture of Venice is a delicacy of proportion that is microscopic, and altogether unappreciable by the eye. It is true the eye is sometimes influenced by what it cannot detect. It is so influenced by subtle curvature, as in the contour of a column, a spire, or lantern; but it is not influenced by a difference of 2 inches in 90 in the intercolumns of an arcade. Such a difference perspective, if nothing else, would render nugatory. But whether the eye be influenced or not by such differences, we are unbenefitted by these discoveries of Mr. Ruskin, and our knowledge of proportion is unincreased: for variations, to give pleasure, should be made according to some law, which here is not the case; for in the long account he gives us of the subtle differences between the span of certain arches, he alludes to no principle whatever: it is mere irregularity, which he assumes to be perfection,—the result of subtilty of eye, innate love of harmony, and so forth.

I observed above that Mr. Ruskin's prejudices had led him into pernicious errors: such an error, I consider, is involved in his eulogy on the architect of the ducal palace for irregularity in the disposition of the windows; and I notice it, because I think the subject of peculiar importance at the present day. The said architect gains our author's admiration for placing the new windows, in an addition to the façade, on a different level, some feet lower than the old ones; while opportunity is taken of reproaching modern architects with want of courage to perpetrate so daring an achievement,—an achievement nothing less than breaking through all regularity and ignoring what from time immemorial has been recognised as holding a high place among the principles of architecture.

Now uniformity, I believe, is just the quality he had most need to insist upon; for there is no one principle of architectural beauty more violated in the present day—particularly by modern Gothic builders, who too frequently imitate the irregularity that in their models was the effect of time and accident. I believe that uniformity is a law of architecture that must only succumb to the higher law of fitness, and that we should aim at all of this quality that is consistent with the nature of the work; and this in all kinds of buildings. I believe there are none exempt from the obligation to be regular, if possible; and that any building is impertect, however otherwise beautiful in proportion to its deviation from the symmetrical. It is quite right to have irregularity in many cases, particularly in domestic architecture; but it is fitness alone that justifies it. Irregularity, introduced for its own sake, or with an eye to picturesqueness—beyond what attention to the purpose of the building generates—is a defect, and one especially unpleasing in a new building obviously all of one style and date.

But perhaps of all such defects, that which in another place he recommends, at least by implication, viz. variations in the proportions of shafts, would be the most unpardonable; for in these equality is indispensable constructively. Uniformity belongs to the office of columns, which being (in the same colonnade or arcade) of the same height, and having each the same burden to support, it is evident should be of the same diameter. Capitals, I consider, might be varied in detail, just as in the Gothic, with much increase of interest and effect; but this is the utmost variety that could be introduced into a colonnade: variations in the proportions of columns in one colonnade would be a defect in any style.

The fallacy just noticed in reference to the column is perhaps based on, or closely connected with, another; viz. that if of precious stone it (the column) need not be serviceable, but only beautiful. Now, there are some things in nature whose mission it is to be beautiful alone, and there consequently may be in art; but a column is not one of these. I cannot believe that the end of a column is ever to be beautiful alone; however precious its material, we can never forget its office, and exonerate it from the duty of support, or the expression of it, and consider it in the light in which we view jewellery, viz. as designed to give pleasure by its beauty and commercial value only. The beauty of a column lies mainly in its fitness by proportion and shape to support; and if it cannot have this, or if an expression of sacrifice, or display of costliness is sought, I would work the jasper into some other shape. On a very small scale indeed it might be proper, as in tracery; but then it ceases altogether to have the expression of a column; it is a miniature column, and is to be classed with the miniature battlements on window transoms and screens. Of the same nature are the shafts in jamb decorations; they are not properly columns, but a kind of tracery imitated from the column, and a justifiable embellishment. To say that columns may be of variable size, according as the material may be best obtained, is to ignore art altogether, or to yield it a prey to accident and caprice.

There is another fallacy I would notice, but it is more for its exhibition of disingenuousness of comparison, than from any danger to be apprehended from it. Mr. Ruskin admires the law of superimposition adopted by the Romanesque builders, which admits of having the upper shafts in a façade more numerous than the lower; and upbraids the modern

Classic architect for invariably placing shaft over shaft in a totally different architecture, without saying one word about the different circumstances of the case. The Romanesque architects were undoubtedly right when they adopted the principle of irregularity and decrease upwards of intercolumniation; but it is surely evident to all that the Classic architect would have been perpetrating a monstrosity had he done so. In all arcaded façades there is more or less of mural space—of plain wall between each story, however closely they may be united; for the spandrel, if there be nothing else, is but wall, and the orders are consequently distinct and separate. In façades of the Classic style, on the contrary, there is only the entablature, part of the order itself between, and it is consequently but one system, one net of columns and entablatures from top to bottom, excluding all irregularity in the vertical placing of the columns, on every ground both of strength and beauty. In such designs the law is obviously inadmissible. It is a principle of beauty taught by nature in her arboraceous productions that the Byzantine builder did wisely in embodying in his works; but one that evidently cannot in the practice of supercolumniation, be emulated by the Classic architect.

I remarked also that much of what was true in Mr. Ruskin's work was not new. No reader of architectural literature will question this. The truth, for instance, that architecture, if it be good work, is not the production of rules or models, but a "freshly and divinely imagined thing," was not first declared by him. It is not new that great art does not say the same thing over and over again: architects and architectural writers have for years been labouring to teach the public that the merit of architecture consists in its saying new and different things, and that there is something more in architecture than five orders. It has been taught again and again in various architectural works, and by many talented writers in this journal, before Mr. Ruskin was listened to as an architectural writer. That all display of knowledge in a building or picture is ridiculous;—that if a work show not "the vigour, perception, and invention" of its author, and of the whole man, spirit and intellect as well as hand, it is worthless, are surely truths it is ridiculous at the present day to state so oracularly.

It is true, as he asserts, that rules have been laid down by pedantic authors for proportions and combinations of the orders, and that by too many they have been succumbed to and blindly followed; but it is equally true that a host of writers have disclaimed their authority, and that by no architect of any mark are they now considered or used as "recipes for sublimity and beauty."

That one of the chief elements of power in all good architecture is the acceptance of uncultivated and rude energy in the inferior workman, who is to be allowed to design for himself in the lower ornaments of a building is simply an assertion of Mr. Ruskin's, and one not only unsupported by argument, but at variance with the nature of art-work. Nevertheless, though a building as well as a picture must be the design of one man, and cannot be yielded up as a *carte-blanche* to the chisel of the workman, yet I cannot see why the Classic style would not, in the executive department, allow some sufficient scope for interest and feeling in the carver, under guidance of the architect, without any infringement of the unity of the work.

SAMUEL HUGGINS.

ROYAL INSTITUTE OF ARCHITECTS.

PRESERVATION OF STONE.

AT an ordinary meeting of the Institute on the 28th ult. M. Benvignat, of Lille, was elected as honorary and corresponding member, and Mr. Carter, of Sheffield, as associate.

After the presentation of a number of foreign works, a paper was read by Mr. C. Winston, "On the application of Painted Glass to Buildings in various styles of Architecture," which we shall print *in extenso*. The discussion of the paper was deferred to the 12th inst. when the evening will be devoted to it.

Some very elegant carvings in box-wood by Mr. Rogers were exhibited, and some specimens of limestone hardened by the process of M. A. Rochas, were laid on the table by that gentleman.

Mr. Scott suggested that a committee should be appointed by the Institute to consider thoroughly the subject of the prevention of decay in building stone. Architects were obliged to use soft stones, which sometimes proved durable in country places, whereas they decayed rapidly in the metropolis. Caen stone had not been found to stand as it did in former times; and if, as M. Rochas stated, he was able, by a very simple and moderately expensive process, to render it durable, it was certainly a most important discovery. He understood that the process was being used in the works in progress at Notre Dame, in Paris; and if successful, its adoption was more necessary in this country than in France. It was highly important that its value should be tested by the Institute most fully.

Mr. Godwin also urged the importance of the subject, and the propriety of referring it to a committee; but he thought they should also consider Mr. Hutchinson's process for the same purpose, which was in operation at Tonbridge-wells.——Mr. Jennings said he believed Mr. Hutchinson's project had not succeeded. Its object was rather to keep out damp than to preserve the stone.——Mr. C. H. Smith concurred in the importance of the question, and stated that there were now in London many ship-loads of stone which ought never to have been imported, and which had only been brought here from mistaken feelings of economy. There were many plans for arresting decay in stone, and some of them were practicable and desirable upon a small scale; but there was great difficulty in applying them extensively.——Mr. Scott alluded to another process, consisting in the employment of an oleaginous composition, which he had some time ago suggested to the Dean and Chapter of Westminster.——Mr. Burnell observed that the attention of the committee should not be limited to the different processes referred to, but they should ascertain, if possible, the *causes of decay* in stone; inasmuch as the same kind of stone was often employed in different localities with very different results. The cause should be understood before a remedy was attempted.

PRESERVATION OF STONE.

I THINK the publication of the following recipe for preventing frost from acting on newly-used Bath and Caen stone would be of service to the architect, builder, and operative. I have tried it four winters and found it successful:—Take fresh burnt lime and mix it to the consistence of whitewash: to one gallon of this add one pint of common salt and a quarter of a pound of alum. This is to be used similar to whitewash, and is to be put on as soon as the lime is run, while it is yet warm, and is then to be dragged off in the spring. I have found this to answer well on blocks of stone fresh dug, which usually feel the effects of the weather first when they are equally exposed. G. SHARP.

ROT IN THE OLD CHURCH OF ST. PANCRAS.

ABOUT five years since, the ancient church of St. Pancras was altered and enlarged to its present appearance. Since that time, as had been the case formerly, frequent complaints have been made of the damp, and also of the oppressive and bad smell of the interior. This unwholesome condition of things continued to increase until many persons (particularly those with families of children) refused to attend the service. Many who were young, or in delicate health, have, particularly in the evenings, been affected with fainting and sickness. Few escaped without headaches, or that sense of numbness of the feet and legs, and the peculiar prostration of nervous energy, so well known to those who have been obliged to visit the thickly-filled burial vaults of London.

The smell of the interior of this church a short time ago was palpable: in certain conditions of the atmosphere the moisture ran down the walls in streams: fungi, some like rows of onions, and some of a larger size, sprang from the woodwork of the altar, and other parts: the fungus was of a bluish-white colour—very damp, and emitting a most unpleasant scent. The attendant of the church said she had removed several basketfuls, the growth of two days. The flooring in several parts was rotten. In the neighbourhood of the fount, which is placed in a recently-built part of the church, it was difficult for the clergyman to perform the ceremony of baptism, he being in constant danger of falling through. The pews occupied by the families of the clergymen were in like condition, and festooned with fungi.

It is needless to say how improper a state of things this was, and how dangerous it would be to bring into such a place females to be churched, and children to be christened.

The condition of this church is, however, a natural consequence. It is placed in the centre of the several acres of human decomposition contained in the graveyards of Old St. Pancras, and St. Giles-in-the-Fields. The ground around the old church has been raised several feet by this unwholesome accumulation—has in fact become a large, and partly subterranean, chamber. The masses of dead in the graveyard undoubtedly send forth the usual moisture, and poisonous gases, which, diluted by the atmosphere, enter not only the church, but also the surrounding houses.

The interior of the sacred building is, moreover, "laden with heavier airs, from the low vaults, the mansions of the dead;" for, to add to the evil, there are under the flooring many private graves, more or less filled with water. Surrounding the church, and close to the walls, are many brick vaults, some of which, on examination, were found to be completely full of unwholesome liquid. In addition to these unsanitary conditions, the drip from the roof would seem not to have been carefully provided for, and perhaps too few of the windows were made to open. One way and the other, the church was rendered unfit for use, and application was made to the church trustees of St. Pancras for improvement. These gentlemen directed an attempt to be made to render the building comfortable for the winter. In carrying this into effect the flooring in parts has been taken up, and found to be wonderfully rotten, considering the short time the wood-work had been in its place. The beams supporting the floor had become like touchwood; and on looking below the parts which it is determined for the present to spare, masses of the blueish white matter which we have described as squeezing through the crevices could be seen extending in all directions. In the neighbourhood of the font and altar concrete has been laid down and a drain opened from the east end of the church through the centre aisle, passing to the screen. In searching for this drain it was necessary to dig to some depth at the back of the altar, and the flow of water into the trench filled several feet in the course of a few hours. A layer of concrete has also been put round the exterior of the church, which has been lime-washed: this, however, is but a painting of the sepulchre, and will but serve more effectually to show the damp: even before the men have completed their work the stains are coming through, and no doubt the "dry rot," or, as it should in the present instance be called, the "wet rot," will continue to destroy the wood-work. The oak portions have not yet perished much, but all the fir timber seems tainted: the only way, in fact, to save the church would be to dig a deep drain round the building, improve the ventilation, and provide a passage for the roof water to a proper destination.

Notwithstanding the ill effects shown here of intramural interment, the burials in St. Pancras and St. Giles-in-the-fields continue in increased numbers. On Sundays the scene is one of such bustle (if we may use such a word in reference to funerals) as would surprise many; and this has to go on yet in old St. Pancras for about a year longer, and we do not know how long in St. Giles-in-the-fields. It is true that a public notice has lately been served on the authorities of Old St. Pancras forbidding interments in *used ground*; but then the sexton has ingeniously discovered a morsel of "*virgin soil*," which he is proceeding to use up in a scientific manner, that is to say, *pile*

coffin upon coffin, and side by side, until they nearly reach the surface; in fact, to turn the "virgin soil" (if virgin soil it be) into a poisonous mass, such as is the remainder of this graveyard. J.

THE LONG SHIP QUESTION.

INSTITUTION OF CIVIL ENGINEERS.

On the evenings of the 15th, 22nd, and 29th ult. the members of the Institution of Civil Engineers discussed the paper on "Ocean Steamers," read by Mr. Andrew Henderson. After a variety of discursive observations, it was suggested, that the discussion would be more useful if it was, for the present, confined to the consideration of the advantages and disadvantages of the proposed large classes of sailing ships and steamers, with respect to their scientific construction, their capabilities for navigation, and their commercial economy.

The first point then considered, was the effect of heavy seas upon vessels of 400 to 600 feet long. The waves of the Atlantic were stated, by some captains of American "liners," to attain an elevation of about 20 feet, with a length of 160 feet, and a velocity of 25 to 30 miles per hour. Dr. Scoresby, in his paper on "Atlantic Waves," gave about the same mean elevation, for the waves, in rather a hard gale a-head: on one occasion, with a hard gale and heavy squalls, some few waves attained a height of 43 feet, with a length of nearly 600 feet, and a velocity exceeding 30 miles an hour. Other authorities assumed even more than these heights and distances. The amount of strength, to resist the impact of such waves, must vary with the length and size of a ship, and the materials of which it was constructed; and as the experience of the Britannia Bridge showed, that a weight of 460 tons, at a velocity of 30 miles per hour, could be borne by a cellular tube of 460 feet span, it was demonstrated, that by the use of iron, almost any amount of strength could be given to a vessel; and as stability could be imparted by proper proportions, efficient vessels could be built of any dimensions, as had been exemplified by the *Great Britain*, which, after remaining ashore on rocks for several months, had been got off without serious injury. There were, however, objections to the use of iron alone for vessels; therefore many other systems had been essayed, such as all English oak, pine of large scantling, three thicknesses of diagonal planting, and iron framing with stout planking: this last combination, with the addition of fore and aft ties and water-tight bulkheads, was advocated for efficiency and economy.

The proportions of about six breadths for the length were insisted upon, and it was noticed, that these were given as the dimensions of Noah's ark, as recorded in Holy Writ.

The effect of heavy waves upon vessels of great length was discussed, particularly when in the trough of the sea, and without sufficient "way on" to enable the rudder to act: under such circumstances it was suggested, that there might be a bow rudder, and a propeller so placed as to assist the action of the helm, in bringing the vessel round.

The necessity for the formation of capacious docks and harbours expressly for such large vessels, was pointed out, as until that was done, they must load and discharge in the river or roadstead.

The questions of what were, scientifically, the limits of bulk of vessels, and power of engines, and commercially, the most profitable dimensions for carrying cargoes and passengers, bearing in mind the period of inactivity, whilst loading in port, were shown to be the main points for useful consideration, as it was as much the province of the engineer to consider the commercial result, as the details of execution of any proposed construction, or plan of operations.

On the 29th (Mr. James Meadows Rendel, president, in the chair), the discussion being resumed, it was contended that the statement of a supposed wave pressure of 85,000 tons of water, or even of 40,000 tons, to which it had since been reduced, by a modified estimate, was inadmissible: it would be manifestly impossible for any vessel to withstand such impact from a body of water; and if the position was admitted, it must be evident that any of the ordinary coasting steamers would constantly be liable to a pressure of 1,000 to 1,500 tons, which would suffice to utterly destroy them.

It must not be supposed that the meeting received for granted the results of calculations based on such a type as the *Rattler*, nor that the Institution could pretend to do more than offer a field for the investigation of the scientific portion of the magnificent commercial experiments about to be tried, and for the success of which all must unite in offering their best wishes.

A table of the number of days occupied by vessels of different tonnage, despatched from Liverpool to Australia, in the years 1852 and 1853, showed that the large ships had a great advantage; but even with this evidence, it would not be wise to rush to the conclusion, that vessels of enormous size would be applicable in all circumstances; in fact, that which determined the expediency of using a large ship was the coincidence of a great amount of traffic and great length of voyage.

As to the mechanical strength of such vessels, it was said there was no difference of opinion on that point among engineers, provided the structure was of iron. Ships of wood, on the contrary, were limited in size by the nature of the material, which was *grown*, and not *manufactured*, and therefore the produce was of limited size; whereas plates of iron could, on the other hand, be rolled of any required dimensions.

The feasibility of the Britannia-bridge had been quite as much doubted as that of very large iron ships, and yet it had been executed, and the result was before the world. It appeared evident that, in future, engineers must look even further forward than they had done, and in their maritime constructions, must adopt dimensions for their docks and harbours to accommodate the increased sizes of the vessels they were destined to receive, but which some years since would have been deemed visionary.

BRIDGES AND RAILWAYS.

After long apathy on these most important subjects, we seem on the eve of great changes. My fear is lest certain plans, alike partial and expensive, should be carried out to the exclusion of better. A kindred article in your journal of the 5th inst. (one of several), will doubtless have its effect; but the consciousness that now or never we must speak out, impels me to address you.

Had the City authorities any notion of beginning at the right end, they would instantly set about rebuilding Blackfriars-bridge, and come to a good understanding with all the Southern Railway Companies, for carrying their lines over at *that* point. It is a sort of providence, to find so much space, and long left vacant, available for railway purposes, at a spot like Farringdon-street; where indeed, if more be wanted, it may be had, close at hand and cheap enough. Yes, in this age of "iron," win it from the river; build, in short, one very wide bridge at Blackfriars.

I have the more confidence in urging the above, from the fact, denied by none, that the railway termini in Southwark, constitute one cornucopia of traffic for London-bridge; and in grappling with this gigantic evil, I advocate no plan involving gigantic expense for a partial object, like that of "St. Paul's-bridge," with its approaches.

"If one bridge be overcrowded, provide another or two to relieve it." Good general advice no doubt; but consider the circumstances of the case. London-bridge, all admit, is choked by the *railway* traffic: Southwark-bridge, if opened free, is not over and above strong, and has its approaches still incomplete: worst of all, there is no direct one (how can there be?) from the united termini to its Surrey foot: this lacking, vehicles would seek London-bridge as usual, and be spared any circuit to or from the other.

The scheme of general union propounded in your columns is sober and sound, for it springs from a foundation in the shape of existing extensions: it is well said to be but the completion of these. To this wheel all shoulders might be placed, were it not for stupid jealousy and disagreement. "An independent entrance into London" sounds fine. Take one project, the Direct Tunbridge Railway, and what would the "independence" of that portion between St. Paul's and the "Elephant and Castle" cost? No, no,—enough for a fresh southern, if it fall into the general system at Newington, and there take its start from the long-planned line connecting the Kent-road and Waterloo stations,—one not miscalled the *multum in parvo* line; for how much would it effect at a moderate outlay, as its track lies through (not valuable factories and work), but back slums, and "Newington desert,"—a most central, available area.

Though no advocate for amalgamation, I am for agreement, and therefore I advise railway companies, like families in reduced circumstances, not to stand aloof from each other in the airs of "independence," particularly on expensive London soil. Here let them club together, and make their means go as far as possible. Let them join arm-in-arm, reflecting how weakly houses stand long, by simply being united to, and so upholding each other in a row. Naught but strife and division prompt the wish for a stretch of power on the part of our Government (as on the Continent), to arrange at once the railway connection in London, so that the various companies might fall in, to the advantage of themselves and the community at large. On the accomplishment of this depends, in no light measure, the solution of difficulties belonging to the Thames bridges, and sundry new streets; to which fact may our authorities open their eyes "while it is yet day," so will they be less likely to take steps which can be regretted but not retraced.

Trinoda Necessitas.

SCRAPS IN IRELAND.

Athlone.—The town commissioners are about having gas-works erected, and we hear on rather an extensive scale. The additional importance lately acquired by this town in consequence of the construction of the Midland line, the newly erected extensive buildings in connection therewith, and several local improvements, have rendered this step imperative.

Cork.—The new R. C. Church of St. Mary "Star of the Sea," lately consecrated at Goleen-west-Skull, in this county, is in the Gothic style of the fourteenth century, cruciform in plan, 100 feet by 30 feet, with a transept 80 feet in width. A chancel window of stained glass has been fixed over the high altar. The roof is of open timber-work, stained and varnished. The site of the edifice is picturesque, being on the incline of a hill to the south of the village, and built on a rock overhanging the Atlantic. An almost total suspension of works has temporarily taken place in this town and county, owing to the late floods, which have proved most disastrous; and the damages done thereby are severely felt by the inhabitants. However, "out of evil cometh good:" the insecure structures will now be replaced by those of a more substantial nature, and better suited for a similar emergency.

Dublin.—The Board of Ordnance have built a new chapel school (similar in many respects to those formerly described in the *Builder*), in connection with the Royal barracks at Portobello. A new front to the R. C. Church of St. Peter's, Phibsborough, is nearly completed, under the direction of Mr. J. Bourke, architect. The spire is partly constructed, and has yet some height to rise: it will be surmounted by an electro-gilt cross, 7 feet high, of Gothic design. A large stone cross (after the antique, and similar to those noticed by us as being in the central hall of the Dublin Exhibition), is to be placed immediately opposite the front entrance. Generally speaking, building works are dull in the metropolis; but we have every reason to know business will be brisk in spring.

Galway.—New barracks are to be erected at Cromwell's fort, and we hear that an outlay of 75,000*l.* is proposed. The new Augustinian Church (designed by Mr. Lyons, architect), is likely to be commenced about February, as the subscription-list is rapidly increasing. Various works in this town and neighbourhood are projected.

Limerick.—An agricultural college for this



GOTHIC ENTRANCE IN THE NEW-ROAD.

county is to be built at Mungret, and we believe the contract is about 6,000*l*. At Adare and other parts serious damage has been done by the floods; and we hope that the grand jury may remedy the defects in bridge accommodation, which caused so many fatal results.

Wicklow.—A new R. C. church has been built at Ballinderry.

GOTHIC ENTRANCE IN THE NEW ROAD.

On the north side of the New-road, St. Pancras, not far from Trinity Church, Messrs. Gray and Davison have built extensive workshops for the manufacture of organs, and a fine Hall for the exhibition of them. The latter has an open timber roof, and throughout, the Mediæval style of architecture has been approximated to.

The entrance to the establishment from the New-road, represented in our engraving, is from a sketch by Mr. Scott, and is an excellent piece of workmanship. St. Cecilia forms the subject of the central carving.

PROVINCIAL NEWS.

Cambridge.—The building contract for restoration of the Abbey Church of St. Andrew-the-less having been taken by Mr. Rattee, the work was begun on St. Andrew's-day, in presence of the committee of the Cambridge Architectural Society, the architect, Mr. Reynolds Rowe, who gave the plans gratuitously, and various gentlemen connected with the parish. The first work to be completed is the rebuilding of the north wall and vestry, which will cost 300*l.* Further subscriptions are much needed.

Diss.—Various sums of 100*l.* 50*l.* and other smaller amounts have been subscribed towards raising about 700*l.* for the drainage of this place, according to a plan submitted by the local board of health.

Loughborough.—At a meeting of the Local Board of Health, on Friday in last week, the tender of Messrs. Tomlinson, Harpur, and Harpur, of Derby, to complete the drainage-works of the town at the sum of 7,400*l.* was accepted. There were seven tenders.

Watford (Herts).—On Thursday in week before last the foundation stone of the new chapel of ease, dedicated to St. Andrew, was laid by Lord Robert Grosvenor. The edifice is to be in the Gothic style; the walling of flints, the window arches and dressings of Bath stone. It comprises nave, chancel, and north aisle, with south porch, and will accommodate about 400 worshippers. The estimated cost of the building is about 2,700*l.* exclusive of the boundary walling. Mr. Teulon is the architect, and Messrs. Fassnidge and Sons, builders, of Uxbridge, are the contractors.

Windsor.—On Saturday week two separate fires took place in the church here from overheating stoves. Happily both were discovered in time, and not much damage was done. It appears that when the church was built, some thirty years ago, two large stoves were placed in the eastern and western aisles respectively, with brick tunnels to convey the heat around the building. Saturday week was the first night these stoves had been used during the present season, and the first time also that the business of lighting them had been entrusted to the under sexton, who had made too large a fire in each, and the consequence was the ignition of the woodwork in both instances.

Carfax.—According to the *Oxford Journal*, the heat, or rather, we should fear, the carbonic acid vapour, from a stove below the pulpit of Carfax Church, together with that from the lighted gas, caused the preacher to faint on Sunday evening before last. Contingencies such as this should be considered in the construction and arrangements of the pulpits of churches. A preacher may often thus have his energy diminished without knowing very well to what to attribute the deficiency. In so extreme a case as that of coma, the cause of the mischief is more likely to be discovered.

Ramsey.—On Monday in last week tenders were delivered at the office of Mr. Geo. Allen, architect and surveyor, St. Ives, for the proposed improvements in the drainage of this town; they were as under:—Stredder, Kensington, 4,198*l.*; Bennett and Son, Whittlesey, 2,998*l.*; Wilkinson and Beard, Grantham, 2,611*l.* 5s. 6d.; Bateman, Ramsey, 2,490*l.*; Booth and Lunn, Boston, 2,365*l.* 10s.; Wright and Pickersgill, Alfreton, 2,140*l.*; Coker and Oates, Ware, 2,095*l.* 10s.; Garrett Charles, Peterborough, 1,950*l.* It is proposed to commence the works immediately, and thus ensure to the town a thorough and effectual drainage.

Andover.—The new church of Monxton parish was consecrated in week before last. The new edifice, which will accommodate nearly 200 persons, is erected on the site of the old one. The style is Middle Pointed, with nave, chancel, organ chamber, vestry, and porch. The interior has an open-timbered roof and open sittings. The eastern window consists of stained glass, manufactured by Messrs. Powell. The chancel is paved with encaustic tiles. Those engaged in the construction were Mr. H. Woodyear, of Guildford, architect; Mr. James Hillary, of Longparish, builder; Mr. Marsh, of Andover, mason.

Winchester.—It is said to be decided that a new organ is to be forthwith had for the Cathedral, namely, that of Mr. Willis, exhibited at the Great Exhibition, the expense to be 2,500*l.* the old organ being valued at 500*l.* The present instrument was a present to the Cathedral by King Charles I. The sum of 500*l.* towards the expense of the new instrument is said to have been subscribed by the Dean and Chapter, 200*l.* by the Dean, and 100*l.* by the Bishop of the Diocese. It is the opinion of many that the proposed cost of a new organ would have been better employed in restoring the west window.

Harvington.—The parish church of Harvington, near Evesham, has been partly restored. The roof has been raised to its original pitch, and is open in the interior to the joints and rafters. The destroyed tracery of the east window has been restored to its original style, the flamboyant. The seats in the nave are in imitation of the old seats, which had become very dilapidated. The chancel is fitted up with open stalls, ornamented with poppy-heads. The whole of the work has been carried out by Mr. Solomon Hunt, of Evesham, builder. The drawings required were made by Mr. George Hunt, jun. of Bengeworth, under the direction of the rector, who, it is said, intends applying a gift by Mrs. Lydia Ward, in raising a spire on the tower, adding a vestry, providing the tower with a clock, and procuring a more complete peal of bells.

Cardiff.—A contract has just been entered into by Messrs. James and Price, of this town, for the erection of engine and goods sheds for the Monmouthshire Railway and Canal Company, required in consequence of the extension of the Newport and Pontypool Railway to Hereford, which, we understand, will be opened on the 6th December.

Nuneaton.—The parish church has been enlarged, repewed, and extensively repaired, under plans supplied by Mr. Christian, architect. The chancel was taken down and entirely rebuilt, with an addition in length of 20 feet, in the Decorated style, to accord with the old tower; a plaster ceiling which before disfigured it, being replaced by an open-arched timber roof. Here have been placed the many monuments which the church contained, including a full-length figure in alabaster of Sir Marmaduke Constable, restored by Mr. Richardson, at the expense of Lady Strickland: a recess was built on purpose for it in the wall of the chancel. The nave has been also completely restored; and the entrance to the chancel marked by an arch of stone. The stone of the pillars and arches of the nave and clerestory have been restored and cleaned from whitewash; and the carved wood roofs or ceilings over the nave and galleries have been restored, cleaned, and varnished. There has been a rearrangement of the galleries. The old pews have been removed, and the floor laid with concrete and sand, to ensure the new pews against the damp which before rendered the building cold and uncomfortable in wet weather. The pews are low, and of solid oak, carved. The ornamental gaslights were supplied by Messrs. Skidmore, of Coventry. The work was completed by Messrs. Taylor and Padbury, of Coventry, the cost amounting to about 2,200*l.* towards which 2,000*l.* have been subscribed. The church has been heated with gas-stoves.

Newcastle-upon-Tyne.—The plans and surveys of the projected docks have been made by Mr. W. A. Brooks, C.E. and Mr. John Dobson, architect, and deposited agreeably to Standing Orders. A dock of about twenty acres, with suitable basin, tidal basin, and locks, is projected, with a depth of 23 feet at the outer lock sills, and a width of 52 feet in the locks, for the admission of large steamers. By a short locomotive line of railway of about half a mile, a junction may be made with the York, Newcastle, and Berwick Railway, giving a ready communication with all parts of England, Scotland, and Ireland.

Shields.—The local *Gazette* states that Mr. Walker has decided on his plans of sea piers, which, curving from the southern Priory Cliff, and inclosing the Haven on the one side, and stretching from the South Shields workhouse, and inclosing great part of the wheel and the Herd Sand on the other, will terminate beyond the present bar in 15 feet water at low tides, thus enclosing the whole of the dangerous rocks and sands within the present bar. The pier-heads, when finished, are intended to stand parallel to and bear north and south of each other, with a passage of 1,100 feet between them, and a lighthouse placed on the extremity of each. The southern pier is to follow the northern, and the South Shields quay should be ready to receive the southern pier. —— The Duke of Northumberland is about to erect, at his own cost, a sailors' home at North Shields. It will accommodate above 100 seamen, and will contain the usual requisites of library, nautical school, baths and washhouses, savings bank, &c.; and the execution of the plans, as approved of by the duke and Captain Washington, will cost 4,000*l.* The land, also given, is worth 1,000*l.* more. The duke requested of the shipowners of the port that they should raise 2,000*l.* for the endowment: 1,600*l.* have been contributed, and the other 400*l.* guaranteed. His grace has also offered to erect and endow a chapel for the use of seamen.

Jarrow Slake.—The Dean and Chapter of Durham have arranged to give 5,000*l.* out of the purchase-money for their property at Jarrow Slake, required by the York, Newcastle, and Berwick Railway Company for the dock at Jarrow Slake, for the purpose of building and endowing a church, &c. near the intended dock.

Edinburgh.—A movement for the restoration of Trinity College Church is being arranged. The stones of this edifice, it may be remembered, were marked and numbered, and then displaced, in consequence of railway-works being intended to occupy the site. These stones are still preserved, and it is intended to re-erect them in the ancient form on some other site. The movement, according to the *Scotsman*, is based "not on any ecclesiastical ground, or for the sake of gaining a victory in any municipal dispute, but simply for the preservation to the city of a noble specimen of mediæval art. It is not necessary," the writer remarks, "to induce us to concur in this object, that we should follow any paradox-vender who tells us that the Greeks were a parcel of noodles; that classical architecture is all a mockery and a solemn sham; and that the edifices with which the most graceful of living architects has adorned the most beautiful of modern cities, are so much dust—rubbish which should be forthwith swept out of sight, and consigned to chaos. It is enough for us to know, in the mean time, that those artists and critics who love Gothic architecture, and believe that it takes a great rank in high art, hold the Trinity Church to be a valuable specimen of its peculiar style, calculated to be of eminent service as a study for modern artists."

Elgin.—The cathedral ruin is reported to have been secured for half a century, by the liberality of the Board of Works. Mr. Isaac Forsyth is endeavouring to obtain from the same quarter a picturesque lodge for the keeper of the cathedral.

Inverness.—It is in contemplation to raise a fund, by means of subscriptions, for erecting a cathedral in Inverness, as the future seat of the Episcopalian bishops of Moray and Ross. One subscription of 7,000*l.* for this and cognate purposes has been received from a gentleman who signs himself "An Englishman, who desires the prayers of the Scottish Episcopal Church." Other sums and gifts, amounting in value to about 3,000*l.* have been offered.

REGENT'S-PARK DRAINAGE.

As a rustic, for awhile in town, my attention was attracted, on a ramble through Regent's-park in the *last year*, to the drains which were cut, at a great depth and heavy expense, for the purpose of drying the surface, and, as folks say here, "to correct the humid atmosphere of a clay soil."

Again, this year, I observe that Primrose-hill is being carved out after the same fashion; that is, trenches from 3 to 4 feet deep are cut at intervals of about a rod apart, and a 2½ inch *solid* drain-pipe is laid at the bottom, when the same tenacious clay is again filled in! Now, sir, we manage these things, as I think, better in Sussex, where we have a little bit of clay. There we always fill in our drain-trenches with rubble, loose stones, or, more commonly, with bushes: this keeps an open continuous hollow

space, say about 12 inches deep by 6 inches wide, quite sufficient to carry off the stream-water, and, at the same time, to absorb the moisture from the soil within the half-distance of the next parallel drain.

We also cut our drains rather sidelong the hill, but never directly up and down; nor do we think it requisite to lay pottery tubes at the bottom, although that, too, is sometimes done.

The *urban* mode of farming may, however, be more scientific, but seeing that the clay is nearly impermeable, and that 4 inches thick, kneaded in the form of a bowl, will hold the fluid till it evaporates, what is the use of a trench 4 feet deep to draw off the swill from the surface? Are they not playing on the pipes to the tune of "The Piper on the Meadow straying?" HODGE COULTER.

FOREIGN ARCHITECTURAL AND ART INTELLIGENCE.

Paris.—The Emperor is anxious to make the Barrière de l'Etoile the finest entrance to a city which ever existed in ancient and modern times. It is proposed that the space around the Etoile shall be traced in a periphery of 172 *mètres*, and the Avenue de Neuilly (situate before the Etoile) shall receive a breadth of 180 *mètres*, and a length of 180 *mètres*, up to the arch of the Etoile. This immense space, longer than the former *Quarré* in the Champs Elysée, now occupied by the Paris Crystal Palace, is to be devoted to public festivals and military manœuvres. The present barracks of the Ecole Militaire will be enlarged and completed.

Berlin: M. Zwirner.—This architect of Cologne Cathedral has lately arrived in the Prussian capital, where the situation of *Geheim Ober Baurath*, with which is connected a seat in the Council of State, has been offered to him. M. Zwirner makes the continuation of his professional duties at the Cologne building the condition of his acceptance.

Buildings at Munich.—The construction of the winter garden between the royal residence and the great theatre proceeds so rapidly, that the iron building is about to be glazed in. This winter garden is the favourite fancy of the reigning king, and in a short time his valuable exotics will be brought thither. On the Sternberger Sea, above Passenhoffen, and near the isle of Wörth, a new regal villa, with large parks, is also to be executed.

Coreggio's Pay.—According to an agreement yet existing, and bearing date Reggio, 14th October, 1522, entered upon between Alberto Pratonero and Coreggio, the price which the great painter received for his famous picture, "Night" (now one of the jewels of the Dresden gallery), was 208 lire,—equal to about 16*l.* or 17*l.* of our present money!

SIGHTS AND SCENERY.

Adelphi Theatre.—The "Sea of Ice" in "The Thirst of Gold" is a sight in itself. Imagine a mass of icebergs on which four hapless beings are cast without materials for a fire, save by the destruction of their only hope, the boat. See the icebergs fall under the influence of returning spring; the frozen surface split and disappear; three of those who have vainly trusted to it sink, and ultimately the raging sea rise to occupy the whole site, and float off the survivor, a child, into the boundless expanse on a mass of ice. It is an admirably-managed effect, and produces a strong sensation. The scenery generally is very creditable to Messrs. Pitt and Turner. The drama itself is a piece of elaborated French workmanship, and affords excellent parts for Madame Celeste, Mr. Webster, and Mr. Keeley. It will fill the house for many nights.

Mr. Albert Smith's Mont-Blanc.—Half a thousand nights have not staled Mont-Blanc: the whole thing is smarter and fresher than ever, and all those who went before must go again or they will know only half about it. The spectators are seated in a Swiss village, with its balconies, its inn, its shop: Chamouni has supplied the wood-carvings, Paris the imitated heaths, Alpine plants, and little fountains; Bayswater the flowers, Mr. Beverley the views (some of them better than others), and respite and change of air, fresh vivacity to the guide *par excellence*, Albert Smith, — *Prince* Albert in his way. Our own ill-natured observation made long ago on the condition of his atmosphere has not been overlooked, and, as Keeley says in the "Camp at Chobham," you now have "a-ah,—plenty of a-ah." The first and third parts of the entertainment are new; the intermediate part, the graphic and truthful account of the ascent, remains the same, and it is the mixture of fun and fact,—unaffected earnestness and good sense, with witty nonsense and accomplished fooling, that gives the peculiar charm to the entertainment which belongs to it, and has secured a success scarcely paralleled.

The Grand Tour of Europe.—Under this title another Mr. Smith — Mr. J. R. Smith, an American—is exhibiting in Leicester-square certainly one of the best panoramas which have yet been produced. It is extensive, truthful, and artistic, although in some cases coarse. Some of the views, those of Berlin, Hamburg by day and night, the Lago Maggiore, for instance, and the Lake of Geneva, are particularly effective. We cordially recommend it to the attention of our readers.

THE JESSOP MONUMENT.

IT is proposed to erect a monument to the late Mr. W. Jessop, the well-known ironmaster, of the Erewash Valley. The Butterley Company have granted a piece of land: a design has been obtained (how we do not hear), and subscriptions are being solicited.

If the rude lithograph in circulation show the design determined on, the best wish we can give the committee is, that they may not succeed in getting money enough to execute it.

It is a plain column full of loop-holes, with a pedestal, capital, and termination, perfectly non-descript,—the whole 90 feet in height. It is a cross between a lighthouse and a factory chimney,—only *worse*. It is to be hoped that the committee will take proper advice before they waste the subscribers' money.

THE BROCK MONUMENT, TORONTO.

THE monument erected to General Brock, on Queenston Heights, Upper Canada, in 1824, having been destroyed by the act of a political bigot in 1840 (who placed within it a quantity of gunpowder), it was determined to raise a new memorial; and a competition having been invited, a design by Mr. William Thomas, an English architect residing at Toronto, was selected. On the 13th of last October the first stone was laid by Col. Donald Macdonell, when, amongst other interesting incidents, a touching address was read on the part of the Indians, some of whom fought with Brock in the American war, wherein he fell. "Brothers," said they, "pardon this our rude speech: compare it not to your own eloquent address. And let us further add our sincere thanks to our pale-faced friends, who have ever taken such deep interest in our welfare. The Word of God has entered our savage hearts: you taught us to lay aside the tomahawk and cultivate the land for our maintenance: you showed us the way of eternal life. We may now truly expect that the Pale Face and the Red Man will meet together at God's right hand."

The column, which is described as being of the Roman Composite order, with its pedestal, stands on a platform, or sub-basement, of an elevation of 27 feet, at the angles of which are lions rampant, supporting shields, with the armorial bearings of the hero. The sub-basement is placed on a platform slightly elevated within a dwarf enclosure, 77 feet square, with a fosse around the interior: at each angle are placed military trophies in carved stone, 30 feet in height.

The pedestal to the column is 16 feet 9 inches square and 38 feet in height, the die having on its panelled sides appropriate basso-relievos. The column itself is 95 feet in height and 10 feet in diameter, fluted, and having an enriched base of laurel-leaves entwined on the lower torus: the base of the shaft is enriched with palm-leaves, upon which the flutes terminate. The capital of the column is 12 feet 6 inches in height: on each face will be sculptured a figure of Victory, 10 feet 6 inches in height, with extended arms over military shields, as volutes, having on their outward angles lions' heads, helmets, &c.; the spaces between the acanthus being wreathed with palm-leaves. The cippus, supporting the statue, is to be of cast-iron, galvanized, having within it a chamber 6 feet in diameter, for persons to stand in to view the scenery.

The statue is to be executed in stone, 16 feet high. The whole height of the monument, including the statue, is 185 feet.

NOTES AND INQUIRIES.

ARCHITECTURAL AND ARTISTICAL.

Symbols of the Evangelists.—In answer to your correspondent, "Quere Quare," I would refer him, for information as to "the four living creatures" of Ezekiel and of the Apocalypse, to Dr. Hutchinson's work upon "The Cherubim," after perusing which I venture to say he will not look upon their ascription as types of the Gospel historians as likely to be indebted to any more authoritative origin than the ingenious imagination of the Byzantine symbolators. When St. Paul, in the ninth chapter of his "Epistle to the Hebrews," intimated that he could, but not then, "speak more particularly" upon these awful and mysterious forms, he certainly was not thinking of his excellent contemporaries (I speak with all reverence) Matthew, Mark, Luke, and John. F. H.

Edinburgh University.—I have a print of "The Right Hon. Thomas Elder, of Forneth, Lord Provost of the City of Edinburgh," &c. engraved by Earlom, from a painting by Raeburn: he is sitting, and on a table is a plan for the University of Edinburgh. Can your readers inform me whether he was the architect or the projector, as I want to add him to my collection accordingly? P. T.

*** We are not aware that he was either. The external fronts were chiefly planned by Adam, while Elder was Lord Provost. Elder's name is in the inscription on the front, where it stands thus:—

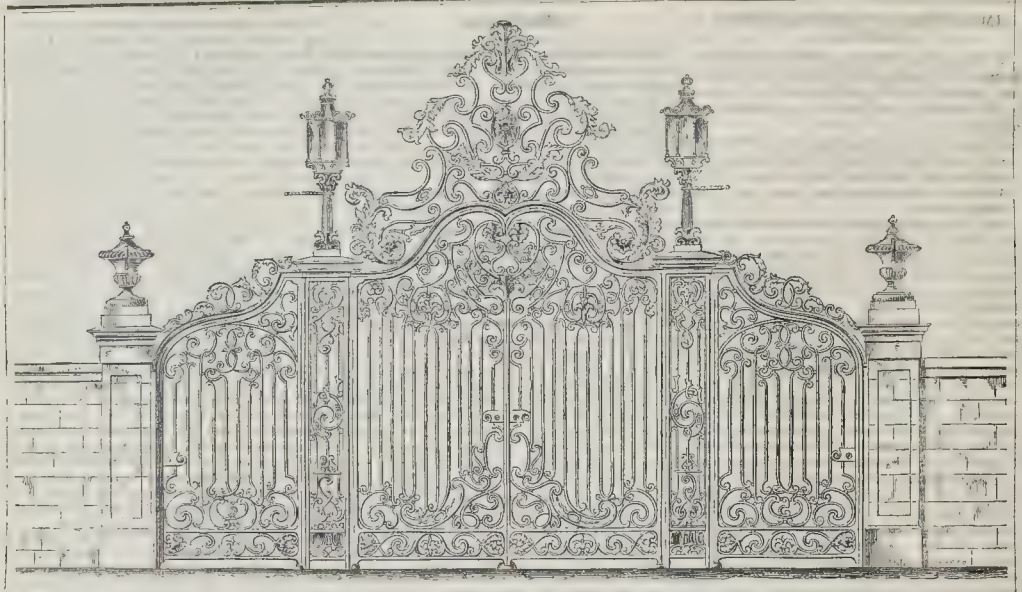
"Urbis Edinensis præfecto Thoma Elder. Academiæ Primario Gulielmo Robertson. Architecto Roberto Adam."

The building was afterwards continued by Mr. Playfair, architect.

INAUGURATION OF THE BURY ATHENÆUM.

THE new building for the Athenæum at Bury, in Lancashire, has been inaugurated by a tea-party and *soirée*, presided over by Lord Stanley, M.P. for Lynn, and attended by several hundred persons, a large proportion of them being ladies, — an interesting feature this is becoming in all meetings and institutions devoted to popular enlightenment, and one that is likely to aid greatly, too, in attracting those for whose behoof they have been more particularly intended. Besides the chairman's, addresses were delivered by the Bishop of Manchester, Mr. Cheetham, M.P. the Rev. Dr. Vaughan, and other gentlemen.

Lord Stanley in his speech, while making allusion to the manner in which the building fund had been realised,—1,200*l.* in twelve single contributions, between 2,000*l.* and 3,000*l.* more of it in subscriptions of 5*l.* each,—remarked, that this was a gratifying proof that an institution founded, indeed, for the benefit of all classes, but founded especially for the benefit of the less wealthy class, had met with the cordial and disinterested support of the more wealthy classes in the community of the town. That was a kind of assistance which any man might be proud of offering, and which no man need be ashamed to receive. It was not eleemosynary, it was not degrading to any one, it could not injure any man's self-reliance, it could not wound any man's just feeling of independence; it was simply a recognition of a solemn duty, the discharge of an obligation by those who, under the laws of this country, had risen, and prospered, and grown wealthy—an obligation which they owed to their country and to those classes of their countrymen by whose labour their wealth had been raised. In the conclusion of his address his lordship remarked, that he



IRON GATES AND PIERS AT WORSLEY HALL.

believed it had occasionally been urged against institutions like the present, that those who promote them attach, in the scheme of life, too great and exorbitant a value to these as compared with other matters. He thought we must all feel that to any man knowledge cannot be everything; that knowledge is power, but that power may be dangerous. Knowledge brings responsibility; and for him who errs with the power conferred by knowledge it had been better that he had remained in ignorance. But these results are not in our hands, and all that we say is this,—that the desire of knowledge is natural to man—that it is one of the strongest instincts implanted in him by the Author of his being; and that, being so, it is an impulse which he is bound to follow, and that we are bound, so far as in our power lies, to aid him in following it. That is the object we propose to ourselves,—to remove out of the path of the student, especially the poor student, all those material obstacles which would encumber and retard his progress.

ORNAMENTAL IRON GATES AND PIERS.

These gates made by Messrs. Cottam and Hallen, of London, are for the Earl of Ellesmere; and are about being erected for his lordship at Worsley Hall, Lancashire.* They are a combination of wrought and cast iron: the frame-work and plain parts are of wrought, and the ornamental portions of cast iron. The width between the piers is 26 feet, and the height to the centre of the fixed portion over the carriage-entrance is 20 feet. The iron piers are square, with moulded caps, upon which are placed standards and lanterns.

THE KILKENNY ARCHÆOLOGICAL SOCIETY.

The November meeting of the Kilkenny and South-east of Ireland Archæological Society was held at the Museum, Kilkenny, on Thursday week, when forty new members were admitted. "The boys of Kilkenny" are indeed "brave dashing blades." Among the forty "boys," too, as befits such blades, we observe there is one of Kilkenny's "pretty maids," namely, the Countess of Shannon, who has just become a member, proposed with various others by Lord James Butler.

The contract for repairing Jerpoint Abbey was announced by the secretary, Mr. Graves, to be near completion. He also intimated a further ruinous fall of the south arcade of Dunbrody Abbey, and the demolition of a fine old aisle window at Thomastown old church "to prevent the urchins of the village from pillaging the nests of birds who built in adjoining parts of the ruin."

The market-cross of Kilkenny formed the subject of a curious and learned paper read by Mr. Prim. This cross no longer exists, having been demolished in 1771, somewhat on the principle of the nest-pillaging nuisance, by an ultra-zealous but unlucky pickle of a mayor, to prevent idle scamps from gambling under its arches, where the worthy functionary had vainly mounted the parish stocks *in terrorem* under the beautiful and sacred symbol of the cross! For publicly whipping one of the said scamps, the same gentleman got himself into the Court of King's Bench, and after he had plunged into this and other messes, the corporation had to "advance and pay" for behoof of "the said Anthony Blount, the younger, esquire," sums amounting, in all, to 500*l.* of the public money "to extricate him out of his difficulties."

The market-cross of Kilkenny was erected in 1335, and under that date there is a graphic note as to it in the annals of John Clynn, a Franciscan friar of Kilkenny, to the effect that "the same year, on Thursday, the morrow of Lucia the Virgin, the great cross was put in the centre of the market-place in Kilkenny, at which time many persons, flying to the cross, were marked on the naked flesh with the sign of the cross, with a red-hot iron, that they might go to the Holy Land." Kilkenny Cross therefore was curiously associated with those crusades, which few we dare say ever dreamt, till lately, of seeing renewed in our own day, even under auspices so changed—so different. Then it was the Western Church which attacked the Turks: now it is the Eastern; and it may yet happen that more than one brave Kilkennyite may go forth to the new crusades in defence of the very infidels against whom so furious an excitement existed amongst them in 1335. *Tempora* certe *mutantur!*

Kilkenny Cross was of marble, erected on a square graduated base, with a vault supported on marble pillars. There were statues of saints at the point where its gablets diverged. This was not the only cross in the city, however: indeed, there were various others: one in particular, near the market-cross, was called Croker's Cross, also of marble, and elevated on a square base of many steps. The remains of the market-cross, and those also of Croker's Cross, were finally cleared away to make room for parish pumps!

THE CITIES OF PAST PEOPLE.

The *San Francisco Herald* gives an interesting account of ruins said to have been seen by Captain Joe Walker, a well-known mountaineer. The writer says that the Captain assures us the country from the Colorado to the Rio Grande, between the Gila and San Juan, is full of ruined habitations and cities, most of which are on the table land. Although he had frequently met with crumbling masses of masonry and numberless specimens of antique pottery, such as have been noticed in the immigrant trail south of the Gila, it was not until his last trip across that he ever saw a structure standing. On that occasion he had penetrated about midway from the Colorado into the wilderness, and had encamped near the Little Red River, with the Sierra Blanca looming up to the south, when he noticed at a little distance an object that induced him to examine further. As he approached, he found it to be a kind of citadel, around which lay the ruins of a city more than a mile in length. It was located on a gentle declivity that sloped towards Red River, and the lines of the streets could be distinctly traced, running regularly at right angles with each other. The houses had all been built of stones, but all had been reduced to ruins by the action of some great heat, which had evidently passed over the whole country. It was not an ordinary conflagration, but must have been some fierce furnace-like blast of fire, similar to that issuing from a volcano, as the stones were all burnt—some of them almost cindered, others glazed, as if melted. This appearance was visible in every ruin he met with. A storm of fire seemed to have swept over the whole face of the country, and the inhabitants must have fallen before it. In the centre of the city we refer to, rose abruptly a rock 20 or 30 feet high, upon the top of which stood a portion of the walls of what had once been an immense building. The outline of the building was still distinct, although only the northern angle, with walls 15 or 18 feet long, and 10 feet high, were standing. These walls were constructed of stone, well quarried, and well built. All the south end of the building seemed to have been burnt to cinders, and to have sunk to a mere pile of rubbish. Even the rock on which it was built appeared to have been partially fused by the heat.

* A View of the Hall has appeared in our pages.

IMPROVERS IN THE SIXTEENTH CENTURY.

I think the following, from a small duodecimo in my possession (by Sir John Harington), printed in 1596, may be worthy of a place in the *Builder*, and interest us sanitary reformers:—

A Letter written by a Gentleman of good Worth to the Author of this Book (' A New Discourse of a stale Subject, called the Metamorphosis of Ajax. Written by Misacmos to his Friend and Cosin Philostilpnos').

Sir,—I have heard much of your house (*at Kelston, near Bath, he resided*), of your pictures, of your walks, of your ponds, and of your two boats, that name, one by land and the other by sea, fro' London-bridge, and met both at Bath-bridge; all which, God willing (if I live another summer), I will come of purpose to see; as also a swimming place, where, if one may believe your brother Fraunces, Diana dyd bath her and Acteo' see her without hornes. But to deale plainly with you, there be three special things that I have heard much boasted of, and therefore would willinglyest see; the one a fountain standing on pillers, like that in Ariosto, under which you may dine and suppe; the second, a shooting-close, with a xii score marke to every point of the card, in which I heare you have hit a mark that many shoot at, viz. to make a barren stony land fruitfull with a little cost: the third is a thing that I cannot name well without, save reverence, and yet it sounds not unlike the shooting-place, but it is in playne English a s—— place. Though if it be so sweet and so cleanely as I heare, it is a wrong to it to use save reverence, for one told me it is as sweet as my parlor, and I would thinke discortesie, one should say, save reverence, to my parlor. But if I might entreat you (as you partly promist me at your last being here) to set down the maner of it in writing, so plaine as our grosse witts here may understand, or to cause your man, M. Combe (who I understand can paynt pretily), make a draught or plot thereof to be well conceauved, you should make many of your friends much beholding to you, and perhaps you might cause reformation in manie houses that you wish well unto, that will thinke no scorne to followe your good example. Nay, to tell you my opinion seriouslye, if you have so easie, so cheape, and so infallible a way for avoyding such annoyances in great houses, you may not onely pleasure many great persons, but do her Majesty good service in her Palace of Greenwitch, and other stately houses, that are oft annoyed with such savoures, as where many mouthes bee fed can hardly be avoided. Also you might be a great benefactor to the Citie of London, and all other populous towns, who stand in need of such convayances. But all my feare is, that your pen having been inured to so high discourse,—

> 'Of dames, of knights, of armes, of love's delight,
> Will now disdayne to take so base a subject,
> Of vaults, of sinkes, privies, and draughts to write.'

But herein let a publick benefit expell a private bashfulness, and if you must now and the' breake the rules, with soe of these homely words, you see, I have broken the ice to you, and you know the old saying, 'Peus may blot, but they cannot blush,' and as olde Tarlton (court jester) was wont to saie, this same excellent worde, save reverence, makes it all manerlie. Once thys I dare assure you, if you can but tell a homelie tale of thys in prose, as cleanlie as you have tolde in verse a baudie tale or two in 'Orlando' (Sir J. Harington translated 'Orlando Furioso' from Italian into English verse) mannerlie, it may passe among the sourest censurers verie currentlye; and thus expecting your answer hereto at your convenient leysure, I commit you to God this —— of ——, 1596.

Your loving cosin."

Sir John Harington was one of Elizabeth's favourites: she was godmother to his son. He was for the period a remarkable youth, and died at the age of twenty-two; he was companion to Henry, the eldest son of James I. who it was supposed received foul play from his younger brother Charles, afterwards Charles I.

P. T.

Temple Bar.—Temple Bar seems more than usually in the way just now. There is no doubt that the Bar is a great hindrance to the traffic; but by moving it a short distance, all its traditions may be kept in mind, and it may stand where it would be in the way of none of our wayfarers. By taking it down from its present position, and erecting it on the Wych-street side of St. Clement's Church, where there is comparatively no traffic, Wren's work would be preserved, the City boundary could be marked on it and maintained, and the Queen could honour the old custom of applying for admission by going round the other side of the church.—A Citizen.

Miscellanea.

Pentonville-hill.—There is no better piece of road in London than that part of the New-road between the Angel at Islington and Claremont-square. It has stood the test of a heavy traffic for years. It is obvious that the same plan would be admirable for Pentonville-hill. Any one who has seen a loaded omnibus toiling up the ascent can imagine the relief that would be afforded by a 7 feet width of pavement on the *near* side. It is suggested that this, by doing a third of the length yearly, would be no great burden on the funds appropriated for repairs; and at the end of six years, if *both* sides were done, every one would be grateful for a great public benefit.—B.

Body-Culture. — We have often urged the want of athletic exercises for all classes. In a new programme of Captain Chiosso's Gymnastic Academy, the question is treated more learnedly than is usual in such documents. The writer says,—"If we consider the life of our middle and humble classes, it is one of great effeminacy and perversion. The wealthier go from their desk or counter to their dining-room, or tea-table, or fireside, day by day, year after year. If we consider the humbler classes, it will be said, that *they* surely have plenty of muscular exercise. Some surely have, and those we find amongst the farmers and farm-labourers, the woodmen and foresters, the fishermen and mariners, the sawyers, butchers, &c. the healthiest men of the land. It is this class of people which constantly revivifies and restores our large towns, and supplies them with sturdy and vigorous men and women, to perform the work of the enervated townspeople. But many other trades afford no general exercise and usage of the muscular system, and in many cases add to this the working in confined, overheated, and damp localities. Shoemakers, tailors, sempstresses, and all sedentary trades, are those where muscular power is either absolutely kept in abeyance, or where only a few and a restricted number of muscles are used. The ailments and mortality amongst these classes of society are appalling. Hospitals, infirmaries, dispensaries, asylums, &c. are certainly very fine specimens of the philanthropy of present mankind; but their excessive number—the many cases beyond remedy—prove, that a move in another, an *hygieistic* direction, is also necessary."

The Belfast School of Art.—The annual *soirée* of the students in the Government School of Arts at Belfast, was given, on Friday week, in the Academical Institution there. The meeting was largely attended by the friends of the pupils, the pupils themselves, and those interested in the cultivation of artistic design. Mr. Davison, M.P. was called to the chair, and addressed the pupils. While alluding to the late Earl of Belfast, and the statue of McDowel, who is a native of that city, to be erected as a memorial of the late Earl, the chairman narrated as an anecdote of the sculptor, that his first efforts in drawing were made on the backs of common delf plates, on which he designed all manner of curious figures, and the only paint within his reach with which he coloured his drawings was brick-dust. He then took to pencil, and Newman's paints. His next step was moulding figures in bread-paste or dough, and by progressive stages he advanced till he has become one of the first of living artists. From this example, added the chairman, learn what some of you may accomplish, if you but walk in his footsteps. The chairman congratulated the friends of the Institution on the satisfactory progress it was making under Mr. Nursey's tuition.

Round India-rubber Thread.—Relative to a paragraph on spinning caoutchouc thread, by a French manufacturer, which appeared in our journal, we are told that a round thread, the manufacture of MM. Gerard and Aubert, was introduced to a well-known English firm in November, 1851, who agreed to take a large quantity, and did so; but it was found, from the fact that the caoutchouc is reduced to a pulp by the admixture of a small portion of solvent, and then forced through a sort of cullender into a drying box, so as to produce a round thread, the caoutchouc has not its full power, and time causes microscopic holes in the thread, whereby it is in parts brittle and unsafe to use. In the midland counties this is so well known, that no one will buy a web in which round thread is used.

Fire at a Lecture on Architecture. — At the Lymington Literary Institution, on Tuesday in last week, a lecture on Grecian architecture was in course of delivery by Mr. George Banks, when it was brought to a premature conclusion by an alarm of fire in the lecture-room. Owing, it was said, to a glaring defect in the construction of the edifice, the timber in the immediate proximity of the fireplace had ignited. The audience having been dismissed, means were at once adopted which proved effectual in subduing the cause of alarm. Had it escaped observation until a few hours later, the building and library, it is believed, would have been wholly consumed.

Liverpool Architectural Society.—A numerously attended meeting of this society was held in the Royal Institution, Colquitt-street, on Wednesday evening in last week, Mr. Verelst in the chair, when Mr. Ayre exhibited some newly-constructed door hinges; and the Chairman called attention to specimens of coloured decorations for ceilings, the work of a gentleman artist, stating that he had long entertained the opinion that a country like this, with a cold sky, required rich decorations, even more than the clear sky of Italy,—an opinion entertained also by their ancestors. Mr. Picton considered that the absence of such decorations showed the bad effects that often resulted unexpectedly from mistaken fiscal regulations. Most of the respectable houses a century and a half ago had such ceilings; and he held that whitewashed ceilings resulted solely from the imposition of the window-tax, which rendered it necessary to have as much reflected light as possible. The Chairman then introduced Mr. Cooper, of Manchester, who explained the *modus operandi* and capabilities of a newly-invented method of coating malleable and in some cases cast iron with flint glass. A pretty general opinion was expressed that the invention would prove very serviceable in domestic architecture, for roofing and heating purposes, but especially as a substitute for leaden water-pipes and cistern-linings. The next matter brought under notice was the proposed formation of a *Place* before St. George's Hall, a model of which, accompanied by a drawing and plan, were exhibited by the projector, Mr. Sumner, who read a paper on the subject, the substance of which is reported in the local *Journal* of Saturday last.

Ecclesiological Society.—Committee meetings of this society were held on October 5th and October 26th. Amongst the designs considered by the committee were those for S. John the Evangelist, Bovey Tracey, and for the proposed rebuilding of the nave of S. Mary, New Shoreham, by Mr. Carpenter; for parsonages at Halstead, Essex, and Milton, near Sittingbourne, Kent, by Mr. White; a design for a stained-glass window in Eastnor Church, by Mr. Oliphant; for rebuilding the church of St. Audrie, Somersetshire, by Mr. Norton; and a design intended for the rebuilding of Christ Church, Blackfriars-road, by Mr. Teulon, in which he proposed to adapt an idea taken from the Dominican church at Ghent, and to obtain an unusually broad nave and apse, while the side chapels of his typal church would be developed into a narrow ambulatory, rather than aisle, on each side, with a gallery above; the main roof, in fact, being supported by huge buttresses, which would be pierced by these ambulatories and galleries, and so not project at all beyond the area of the building. This proposal gave rise to a discussion. Various announcements were made; and it was agreed that the society should pay the expenses of a member of the committee visiting Liverpool for the sake of criticizing for the *Ecclesiologist* the new churches lately built in that town. It is to be hoped the gentleman selected will take with him, besides knowledge, a certain quantity of the milk of human kindness.

Monument to the late Sir Charles Napier.—The *Scindian* reports that at the Kurachee General Library, on 13th of October last, it was proposed by Major General Sir H. Somerset, K.C.B. seconded by Capt. Hill, Engineers, and resolved—"1st. That a tablet in the church now in course of building at Kurachee be erected to the memory of the late Lieutenant General Sir Charles James Napier, G.C.B. former governor and commander of the forces in Scinde; and with this view that subscriptions be raised. 2nd. That a portion of any funds which may remain after providing for the erection of a monument as suggested in the first resolution be devoted to the foundation of a school or the promotion of education by prizes or scholarships in such manner as the committee may determine." The noble old soldier of the eagle eye and visage—second only to Wellington himself, according to something more than a mere tablet as a memorial of his brilliant achievements. We believe the British public would willingly accord him a statue.

Oxford Architectural Society.—A meeting of this Society was held on the 23rd ult. when various presents were received and articles of interest exhibited. The Rev. E. Miller, New College, then read a paper "On the Connection between Church Architecture and Church Music." Mr. Miller was of opinion that the choirs should be in the chancel, which should be well adapted for musical sound, and considered as a vast musical instrument in which the harmonies of the organ and choirs are conceutrated, and from which they will roll out to the congregation in the nave through the chancel arches, which would be as the mouths of the instrument. Organs, he thought, should be placed behind the choirs as near as possible to the altar, that the music might be subordinate to the sense. At a meeting held on Wednesday in last week, office-bearers and members were elected.

State of St. James's-square.—Away with the black bushes, says a correspondent of the *Morning Post*, make green the sooty, dug, benighted earth. Let us see the scythe, and hear its sound, and smell the cut grass, the sweetest scent on a summer's morning. Why is there a pool, and such a pool, in St. James's-square? Do its waters reflect the sunbeam, or merely aggravate the surrounding fog? Why is that wretched statue stuck in the middle of the pool? Let it fall into its peculiar pond, and who would help to pull it out? He sighs for a few fine trees, a broad walk, the utmost possible expanse of grass and daisies, an open view instead of a scrubby wilderness, some ornamental vases in the centre perhaps, and if possible some flowers. The sooty horrors of St. James's-square, and its paving-stone cornices, he thinks, may have led, by contrast, to the great improvements that are being carried out by its quondam resident, now Emperor of France.

Surveyors, &c. to Local Boards of Health.—A correspondent, Mr. Edward Ryde, calls our attention to an advertisement in the *Times*, from the "March Local Board of Health," for a "resident surveyor, inspector of nuisances, and superintendent of highways for their district." The "town portion comprises about 500 acres and 850 houses, and the highways *extend about thirteen miles beyond*." He must have "*a knowledge of engineering generally, of levelling, the making and management of roads, streets, and pavements, and be competent to produce all the working drawings, and prepare the specifications and estimates* necessary for carrying out a system of drainage and water supply for the district." His salary will be "140*l.* per annum for the first two years (when it is anticipated the system of works will be complete), and after that period will not exceed 80*l.* per annum." He must "devote the whole of his time to the duties of the office, and give security for their performance, himself in 200*l.* and two sureties in 100*l.* each." A tempting offer, truly, and a rising prospect! He had better set about learning his business at once, if he has any money to spare for premiums or education. That some one may cram for the nonce is very likely; but how the March Local Board of Health can anticipate that any actual "surveyor" not in the downhill of his energies, his character, and his prospects, will ever accept of an office which, small to begin with, becomes smaller by degrees and more lamentably less, we cannot imagine. In such a Board we perceive the march of expectation, with but little of the march of intellect, liberality, or reason.

Put on the Drag:—In a tour I made of the United States, I observed the great advantage arising from their use of the drag on the hind wheels, in descending hills. The principle is common in England, but here the lever is placed by the side of the box, so that the coachman's hand must be free to apply the power on the wheels. This I think is an objectionable, not to say clumsy arrangement, as he must disengage the hand at the very moment when greater hold is required on his horses. The American plan is different, and is simply placing the lever on a level with the foot-board, so that by a slight alteration in the position of his foot, the desired object can be effected. It has this great advantage also, that he can graduate the pressure on the wheels; and is therefore applied to slight inclines, where the hand-lever would be thought unnecessary. My object in describing this arrangement is to call the attention of omnibus proprietors to the great saving they would effect by relieving their horses where they most require it, viz. in the short stoppages to take up and set down passengers, and also in descending inclines, where great stress is laid on the horses, and great difficulty in pulling up sharp to avoid collisions.—A Time-saver.

New Ironworks in Liverpool.—There is now in course of erection in Harrington-street Potteries, an extensive iron-manufactory, in connection with the Mersey Steel and Iron Company's Works, Sefton-street, known as the Forge. It is stated that this new establishment, which will be principally set apart for rolling iron, will afford employment for nearly 300 men. The works are to supersede those now in operation in Mersey View-street, where all the heavy portions of machinery are produced, such as shafting for large marine engines. Some idea of the extent of the business done at this establishment may be gathered from the fact, that eight large engines are, day and night, with the exception of Sunday, continually at work. The works are the property of Messrs. Horsfall, brothers to the member for Liverpool.

City Improvements.—The plans and sections of the new street proposed to be formed by the Metropolitan Improvement Commissioners from Carey-street to Fetter-lane, have been deposited at the office of the Clerk of the Peace, Sessions House, Clerkenwell. The street will be in a straight line, and it is stated that it is intended to extend it to Farringdon-street on the east, and to Long-acre on the west, passing through Clare-market.

The Iron Trade.—No sooner has there been an announcement made of a reduction in duties on iron to be imported into France, and hence of an opening made for the introduction of British iron there, than the iron masters here, desirous, one would almost think, of checking such a prospect of advantage to the British iron trade, and rendering it null and void, have at once announced a rise of price to the extent of 20s. a ton at one single step, and are even talking already of the probability "that before March next prices will touch the highest point they have yet reached," the wish being father to the infatuated prognostication. The nominal price,—that is a price always beyond the mark,—is now declared to be, for bars, 10*l.*; hoops, 11*l.*; sheets, 12*l.* This nominal advance is not confined to Staffordshire iron. Low Moor bars, which were lately quoted at 15*l.* are now quoted at 16*l.*; and plates of same make, previously 19*l.* are now 20*l.* In allusion to the late mania, from which we imagined that the trade was really recovering, and to its present result, the *Wolverhampton Chronicle* says—"These high prices were the result of enormous speculations carried on at the time by parties who have since become victims of their own rash proceedings. During the short time these extravagantly high prices were in existence, the rate of wages also advanced to a higher point than was ever paid before; but when the reaction took place, and the price of iron receded 2*l.* per ton, the rate of wages and the high price of coal and ironstone (enhanced from the same cause) still kept up, and it is stated that, in consequence of these and other causes of increased cost in the manufacture of iron, those parties who are compelled to purchase all their materials found themselves in a much worse position than they have been in for several years." And will they be any better when, by *repeating the process*, they induce a new demand for rise in wages, the fear of which alone had lately the practical and sobering effect of keeping down that perpetual tendency to speculate with rise of prices, which has already played so much mischief in this gambling trade? Having now declared a rise once more, the masters must of course look out for what they dreaded. It would be well, were the Home Secretary, while actively putting down all forms of lottery and gambling as he is now doing, to look closely into the workings of this trade. The knowledge of enormous fortunes won and lost in it has whetted the already keen appetite of the iron trading gamblers, till it has become not only ravenous but diseased, and will ultimately destroy altogether the trade it feeds on.

Dover: Drainage Excavations and Cliff-blasting.—Excavations are being made for the purpose of laying down drainage pipes, under the Health of Towns' Act, on the grounds formerly belonging to the ancient Priory of St. Martin, now occupied by Saxon-street, and in course of which some relics have been found, such as coins, and a skull of some good old friar, "of extraordinary thickness."——It is calculated that nearly 200,000 tons of chalk will be removed from the overhanging summit of cliff beyond Athol-terrace which is shortly to be blasted. The excavation is to extend to a distance of 65 feet within the solid body of the cliff, and to consist of three cavities, each of which will be charged with powder. The subterranean passage thus excavated is about 100 feet from the summit of the cliff. A carriage-road up the face of the cliff is spoken of.

The Iron Foundry Trade of Glasgow.—There are at present in Glasgow and the neighbourhood the large number of ninety-four iron foundries, all of them in full operation, and quite unable to meet the immense and increasing demand for castings of all kinds, particularly for gas, water, and railway companies. Two of these foundries turn out socket-pipes by a process patented by Mr. D. Y. Stewart and Mr. W. G. Wilson. In addition to the above, there are at present five entirely new iron foundries building in Glasgow, viz. one by Messrs. Thomas Edington and Sons, to turn out socket-pipes, &c. by an entirely new process, recently patented by Messrs. Law and Ingles; one by Messrs. John Downie and Co. which is to be erected on a new plan; one by Mr. David Ritchie; one by Messrs. J. and A. Law; and one by Messrs. James Grandison and Son. The local consumption of pig-iron will therefore be very much increased next year if the iron trade continues good.

Fatal Accident.—Mr. Louis Waller, a master builder, of White Hart-court, Drury-lane, was lately engaged in repairing the roof of a house in Vere-street, Clare-market, when he lost his equilibrium, and fell head foremost to the ground. Life was found to be quite extinct.

Substitute for Gutta Percha.—A block of the juice of the ak, or muddar plant of India, was exhibited last week at the Society of Arts, according to their *Journal*, together with specimens of the raw fibre of the muddar plant, with raw and bleached thread, twisted and coarse twine, and cord and rope, manufactured from this fibre.

Our Cathedrals.—The writer of the "Review of Architecture as a Fine Art," in the *Critic*, says.—"We have recently returned from a very extended 'steeple-chase;' in other words, we have visited every cathedral in England, excepting only those of Chichester and Ripon. The first fact calling for especial observation is, that almost all of them are rather to be regarded as *Gothic miscellanies* than as cathedral models. Each is, more or less, a 'history in stone' of the progress of Gothic design from the Norman to the Tudor period; nor is it merely a compendium of records referring to successive passages of time, but of records distinctively written in the differing languages of their date. It is as if the history of English architecture, from the time of William the Conqueror to that of Henry VII. were a book of books, not written by one author or printed by one printer, but formed of the original manuscripts or printings, collectively stitched up into one volume, with all their differences of tongues, characters, and orthography. Only in what may be termed the binding, or general outward form, do our cathedrals, for the most part, present a consistent and fixed shape. The plan, and the block substance at large, are of perfected and uniform character; but the filling in is transitional and medley. Each building is an established model, so far as relates to its cruciform plan, its nave, choir, transepts, aisles, &c.; but, in many examples, each of these distinct parts is as self-peculiar as if it were a separate structure. The only one of our cathedrals which can be admitted as a self-consistent whole, and therefore as a model, is that of *Salisbury*, which is described by Mr. Britton 'as being the most uniform, regular, and systematic in its arrangement and architecture of any ancient cathedral in England; for whilst all others consist of dissimilar, and often heterogeneous, parts and styles, that of Salisbury is almost wholly of one species, and of one era of execution. It appears not only to have been constructed from one original design, but to have remained to the present day nearly in the same state it was left by its builders. Hence consistency and harmony are its characteristics; and from this cause the architectural antiquary must view it with admiration, and investigate its execution with satisfaction, and even with pleasure.' However, therefore, the distinct parts of Salisbury Cathedral may be rivalled, or more than rivalled, by corresponding but separated parts, selected from our other great churches, it must, as a whole, take precedence as the model metropolitan of all England; and we need not say that, in respect to its famed steeple, it *towers* far above all competition."

Hydraulic Power: "Steam superseded."—Mr. George Goodlet, postmaster, Leith, says the *Scotsman*, has secured a patent to work an engine by an effective impulse from the pressure of a column of water, say 33 feet in height, which, combined with the natural pressure of the atmosphere, will be equal to 30 lb. on the square inch. The slide of the ordinary steam-engine-valve is cut at both ends, to admit of a more constant entrance and exit of the motive agents, and with the aid of another valve for cutting off the fluid after the piston has received the blow, on the principle of the air-gun, a more powerful effect is produced on the piston than has hitherto been accomplished by the methods at present in use. To prevent a vacuum being formed on the induction-side of the piston, and to balance the opposing atmospheric pressure at the exit, Mr. Goodlet places a self-acting atmospheric vacuum-valve at each end of the cylinder-cover The admission of air, adds the writer, into the cylinder in the manner described, on the return of the piston, will give elasticity to the water, and thus facilitate its escape.

Improvements by the Manchester Corporation.—We have often drawn attention to the power which the profits of the Corporation Gas-works, amongst other sources of income, gave to the Manchester corporation in carrying out extensive improvements, useful to the whole community. Testimony to the value of these improvements has been of late publicly given by Lord Shaftesbury, who, through the columns of the daily metropolitan press, calls the public attention, and especially the attention of all municipal and corporate authorities, to the example that is set to them at the present time by the corporation of Manchester. His Lordship had just returned from a short visit to their town, where, he says, "I heard and saw the many improvements that have been instituted by that public-spirited body. Vast thoroughfares are opened in many parts; the streets, courts, and alleys are regularly cleansed; pavements are almost everywhere laid down; the smoke nuisance is in rapid course of abatement; public drains and sewers are constructed; the cesspools that remain will, I hope, be speedily removed; and an abundant supply of good and soft water is so admirably distributed, that in a short time the smallest tenement will enjoy an unlimited quantity at an almost nominal price. The benefits to the mass of the people are quite incalculable."

The Builder.

SATURDAY, DECEMBER 17, 1853.

PADDINGTON, numbering at the last census 46,345 inhabitants, has at length built itself a vestry-hall, wherein to transact the important business of this parish, in comparison with which two or three very respectable provincial cities with noble town halls may be found whose combined business would prove to be less. Some idea of the increase of parochial business here which every year brings with it may be gathered from the fact, that upwards of 400 new houses are taken into rating annually. This prodigious increase is not a new feature in the parish, for during the last sixteen or eighteen years its meadows have been undergoing the brick and mortar transformation to such an extent that the turf-cutter has had to bustle in his work to get out of the way of the carpet-planner. Squares, streets, and crescents have sprung up as if by magic. Nevertheless, the business of the vestry-clerk and his assistants has hitherto been painfully toiled through in a smoky, close, unhealthy room, scarcely more than 12 feet square: once, indeed, before a slip was added to it, that was its exact size, and underneath it at that time was the parish dead-house! The vestry-room was just as insufficient and unwholesome, and one little vestibule for the equal standing accommodation of either barons or beadles who might be forced to wait, completed the unique arrangement. The approach was from a narrow street leading down to the dust-wharfs, and any cabbed or curricled visitor who might make the passage was inevitably drawn down to the salubrious watering-place, and taken all round by the canal beach till he could gain the high road somewhere near Paddington-green. The reason of this airing was, that no vehicle, once drawn up at the vestry-door, could turn round and escape from the street the same way by which it entered without the risk of being upset. As for foot-passengers, the police-station adjoining would frequently form such an attraction to King Mob and Dusty Bob (when, for instance, any esteemed friends were expected out on their way to the police office), that an entrance could only be effected to the vestry premises by dint of a tearing and wearing elbowing through the unsavoury fry.

All this inconvenience had been long felt by some members of the vestry, many of them men accustomed to so much better usage in their respective spheres, that their self-denying labours for the parish deserve praise; and it is to the efforts of these gentlemen, through six or seven years' opposition from those who were satisfied with things as they were, that the erection of the present edifice is to be attributed. We have already illustrated the vestry-halls which have been erected in some of the other metropolitan parishes: so on the next leaf we now give a view and plan of the new building which has been completed for Paddington, and we will add a few particulars for those who like facts. It has been erected from the designs of Mr. Lockyer. The south front, or that next the Harrow-road, has two projecting pedimented wings, connected by a Tuscan colonnade, forming an ample porch, through which an entrance is afforded to a vestibule, 46 feet 6 inches by 24 feet 6 inches. Behind this is the vestry-hall, a handsome wainscotted apartment, 46 feet 6 inches long, 26 feet 6 inches wide, and 27 feet high, extending through the two stories of the building, and having a coved ceiling.

The other apartments on the ground story consist of a committee-room, waiting-room, private room, an excellent fire-proof muniment-room, with offices for the vestry-clerk and his assistants. The upper story, a portion of which is appropriated to the occupation of the resident office-keeper, has been so arranged as to be capable of conversion, at any future period, into increased accommodation, as necessity may arise.

The edifice has been constructed throughout in a substantial and satisfactory manner, by the builder, Mr. Wilkinson, of Horseferry-road, Westminster, who has completed the whole at the amount of the original contract (5,300*l.*). The fronts are faced with white Suffolk brick, and the colonnade is of Portland stone. The cornices and dressings ought to have been of stone also, especially the coins, but are only of Portland cement. The building is situated at the south-west corner of Paddington-green; and being detached, the architect has been enabled to preserve the same character in the four elevations.

Well then, you see, Paddington has built itself a hall,—very creditable to all the parties concerned (barring the cement coin-*stones*), and sufficient for its purposes; and yet we are impelled to ask, why was it not something more than "sufficient?" What is there to care for about the building, to induce an inquiry, or to originate a thought? It is a very convenient building, with a most respectable outside; but we would have had a wealthy community like that of Paddington put up a structure representing them, as it does, in their corporate capacity, which should tell a story to the passer-by, and be deemed by posterity worthy of protection. Remember what the middle classes of the middle ages did in this respect: look all through Belgium, for example, and select, if you like, Louvain, where the population is exactly half that of Paddington. This was restored not long ago, and last year the inhabitants determined to fill the empty niches in its fronts, and ordered two hundred and fifty statues for that purpose! We would not be understood as finding fault: we are simply expressing an opinion and a regret, in the hope that these may weigh with the parish who next erect a vestry-hall.

The village of Paddington, which was once given to Westminster Abbey, and afterwards by Edward VI. to the Bishop of London and his successors, is now one of the most remarkable portions of London. The story of its growth sounds like a fable. In 1801 it contained 357 houses, and a population of 1,881 persons. In 1851 there were 6,519 houses, with 222 in progress, and a population of 46,306 persons. The rates were levied in that year on an annual rental of 390,732*l.*; and in 1852 this had been increased to 410,617*l.* As Mr. Robins remarks, in a recently-published account of Paddington,—

"A city of palaces has sprung up on a bishop's estate within twenty years: a road of iron, with steeds of steam, brings into the centre of this city, and takes from it in one year, a greater number of living beings than could be found in all England a few years ago. The electric telegraph is at work by the side of this iron road. And by means of conveyances, open to all who have any small change, from sixpence to a penny, the whole of London can be traversed in half the time it took to reach Holborn-bar at the beginning of this century, when the road was in the hands of Mr. Miles, his pair-horse coach, and his redoubtable Boy. This coach and these celebrated characters were for a long time the only appointed agents of communication between Paddington and the City. The journey to the City was performed by them in something more than three hours; the charge for each outside passenger being 2s. the "insides" being expected to pay 3s. The delivery of parcels on the line of road added very materially to Mr. Miles's occupation and profit; and I am informed that Miles's Boy not only told tales, to the great amusement of his master's customers, but gave them some equally amusing variations on an old fiddle, which was his constant travelling companion, and which he carefully removed from the green-baize covering to beguile the time at every resting-place on the road."*

The Ty-bourn and the West-bourne (different names for the same brook, probably) have merged into a sewer, but have left their name upon the locality. Nor are other memorials of by-gone times wanting to reward the search of the inquiring student. In the churchyard on the green lie buried, Bushnell, the sculptor of the figures on Temple-bar; the elder Barrett, the painter; Banks, the sculptor; Nollekens; Mrs. Siddons; W. Collins, the landscape painter; and Benjamin Haydon.

If we could, Asmodeus-like, peep into the piles of houses forming Hyde-park-gardens, Hyde-park-square, Gloucester-square, Cambridge and Oxford squares, Gloucester-gardens, Norfolk-crescent, Southwick-crescent, Sussex-square, and Westbourne-terrace, we should find a startling amount of accumulated wealth, and a satisfactory exhibition of elegance and refinement. We should be contented with the impression that would be given, if two or three houses here, with the interior of which we happen to be tolerably well acquainted, were sealed up with lava by a neighbouring Vesuvius for the examination of the antiquaries from New Zealand or elsewhere, who may be seeking in a distant age to know something of the homes and inner life of the English in the nineteenth century. The account, however, would not be worth much, if they drew from these any general inference.

We have said enough to show that the "pretty little rural village of Paddington" is now a very important part of the "great metropolis."

NOTES ON THE HISTORY AND CONDITION OF THE BUILDING TRADES.

MASONS.†

THE Roman masonry was not materially different from that we have already described. We have, first, the *emplecton* masonry, derived from the Etruscans. We have next a method described by Vitruvius, in which the builder was in the habit of running up the external facings of the walls, and then filling up the middle space with loose rubbish—a method to which Pliny gives the name *diamicton* (from a Greek word signifying to mingle together), and which is not unknown among the builders of our day. And lastly, we have the *lapidæ quadrati* (ashlar wall), or walls in which stones were used, cut and squared by the chisel. The great walls of Rome were built of gigantic masses of hewn stones, quadrangular, but without cement; and from this the progress was gradual to the polished ashler and cemented walls. The class of masonry termed rustic-work must be of Roman origin. In the temple of Vesta we have an early example of mason-work, in which the stones are bevelled and squared at the joints, but are left rough on the rest of the surface. This style originated, it has been said, in the mere desire to save trouble in smoothing the whole surface; but we need be at no loss to see that the intention was, by the imitation of natural rock, to give an appearance of great strength and durability to the structure. Examples are found in the Roman wall fortifications yet existing in Germany which go to prove that such was the intention

These descriptions of masonry lead us by degrees to the period when the art reached its climax. In the long walls of Athens the Cyclopean works were combined with perfect regularity of construction. The stones now were

* "Paddington, Past and Present." By William Robins. Hall, Cambridge-terrace, Camden-town.

† See p. 709, *ante*.

so large that each of them formed a cart-load, and were accurately fitted to one another, and held together, not by mortar or cement, but by metal clamps, which were firmly batted into the stone by sockets of lead to which they were soldered. Sometimes wood plugs were used for this purpose in place of metal joints. Such was the method of construction in the walls of the Parthenon and other noble structures of the age of Pericles. The singular nicety of the jointing must not be left unnoticed. So perfect was the workmanship of the mason, that his joints often appeared like a thread; and Pliny mentions a temple in the interior of which fine threads of gold were actually retained by the close joints of the stones. The most common mode employed for ordinary buildings was that which we term rubble work. And the usual method of building rubble was, that each course should be laid alternately along and across. This last method was especially adopted when it was intended to face the walls with slabs of marble, or polished ashlar. This constitutes the next great improvement in wall building, and was particularly general in the palaces of the Roman proconsuls. Augustus boasted he found Rome in bricks, but left it in marble; and it was by such a method as this the change was effected.

The stones used by the Greeks were derived from the quarries of compact limestone which cover the greater portion of the surface of the Peloponnesus and the Grecian Archipelago. This limestone is of a white or rather a bluish-grey colour, so soft as to approach sometimes to the nature of chalk. It is rich in organic remains, and contains large nodules of flint, which the Greeks made use of in their walls. The hills of Attica consist generally of primitive limestone, and the Acropolis of Athens consists of irregular beds of a calcareous conglomerate. The marble of which the Parthenon was constructed, was derived from the quarries of Mount Pantelicus, in Attica (hence *pentelican*, marble). It was preferred to the beautiful Parian marble, on account of its being whiter, and also on account of its vicinity to Athens. In Rome the most ancient buildings were of a variety of limestone from the quarries on the Albun Hills (termed *peperine* by the ancient, and *travertine* by the modern, Italians). The front columns of the Pantheon were of grey marble; the inner ones of red oriental granite, and the capitals and bases were of white marble, out of which material were constructed also the lower seats of the Coliseum, and which was derived from the marble quarries of the Apennines.

The mortar and cements employed were of various kinds. The walls of the temples we have seen, and the best classes of masonry required no mortar. But the rubble walls we have mentioned and those of brick were bound together with a cement composed of lime, mixed with sand, and different kinds of volcanic earths, some of which combinations had the property of hardening rapidly under water, and was much used in the construction of cisterns and fountains. The excellence to which the Romans attained in the use of cements, enabled them to construct walls of very small stones, and to render their colossal aqueducts perfectly water-tight, and capable of sustaining pressure. Pliny mentions a Roman law regarding mortar which enjoined, that after mixing the materials with a small quantity of water they were to be kept for years in a covered pit. The proportions, according to the same authority, were, of river sand three parts to one part of lime, and of pit sand four parts to one part of lime; and it was then thoroughly understood that a burning sun or a severe frost were alike injurious in their effects on the combination.

Respecting the tools of the Greek mason, we know that, like the Egyptians, the Etruscans, and the Romans, they were originally formed of bronze. But the steel chisel, the saw, and the hatchet with the chisel at the back, are the commonest tools of the age of Pericles. The use of the saw was necessary for cutting the softer blocks of limestone. And the saw without teeth was applied, as it still is, in the marble quarries of Carrara, to the cutting of marble slabs. Compasses and calipers were likewise in common use; and from a representation on a tomb found at Rome, we see the rule, the plummet, and triangular frame; the wooden mallet, like that of a modern tinsmith; the square; the chisel, like a joiner's mortice chisel; and the calipers, like the most approved fashion of the modern engineer. The square was used in making the semi-circular flutes of the Ionic columns, a method founded on the proposition in Euclid, that the angle contained in a semi-circle is a right angle. The lines were drawn on the rules with ruddle or red ochre. The shovel was a hatchet-shaped implement, formed either of one broad plate, or of two iron prongs, and was used originally in husbandry for clearing fields of weeds. Their trowel bore no resemblance to ours; it consisted of a large and flat spoon, or ladle pierced with holes, which was applied to the various purposes of a strainer, in lifting vegetables from water, a skimmer, to clear liquids from froth, as a screen for putting bees into hives, as a riddle for sand or mortar, and as an instrument to plaster walls. It is scarcely necessary to add, that the screw in all its modifications was one of the most valuable mechanical agents of the Greeks and Romans.*

We have thus, as far as our limits will permit, and the materials will enable us, given a cursory glance at the early history of mason-work. In looking at its progress as a whole, we should say that the Romans, if we consider their cements and their scientific methods of constructing aqueducts and sewers, were the best *builders;* that the Greeks, if we look at their exquisite workmanship, were the best *hewers;* that the Egyptians, when we regard their colossal obelisks and their methods of transport, were the best *quarrymen;* and that in point of patient application of limited resources, the aboriginal races surpassed them all. We have dwelt long, longer than we had intended, on these periods of history; but it is a subject to which we would direct the attention of the artisan in our day. It is, indeed, a subject possessed of a strange fascination for the artistic mind, to turn from a contemplation of the history of mason-work in the classical periods of Grecian history, to the contemplation of its ruined monuments in the British Museum. As we enter the hall in which are displayed those noble relics, we see the Parthenon in the days of its stately grandeur almost present to our mind's eye. There are the columns over which Ictinus expended his artistic genius. There are the images which Pericles looked upon, which Plato loved to contemplate. There are the sculptured friezes in that Pentelican marble on which more than 2,000 years have scarcely laid their hands, with its lines as sharp, its curves as perfect, its squares and angles as true, as when the Romans invaded its sacred precincts; as when the Christians converted it into a temple; and the Turks into a mosque. And although ruined and desolate, its influence still remains, to enlighten and instruct the minds of all succeeding generations.

It would greatly exceed our limits to enter on the progress of mason work during the time which elapsed between the decline of the Roman empire and the general establishment of Christianity throughout Europe. And yet there are no more interesting periods in the history of architecture or of the world. We should see a religion professed by a sect of Jews, poor fishermen, carpenters, net-makers, and publicans, gradually spread its beneficent influences throughout the classical regions of Corinth and Thessalonica, of Macedonia, and of Rome itself, where it uprooted at once and for ever the old mythology and the polytheism of Egypt and of Greece. We should see this religion, after being opposed to the death by successive governments, at length professed by a prince of the imperial purple. And then we should see rise up from among its lowly adherents a *Church* at once so powerful and so great, that all history can produce no other instance of similar power and equal greatness. We could speak of the progress of building in Byzantium, where the arts found refuge from the flood of barbarism which now surrounded Rome; depict the elegant construction of the Basilicæ, the palaces, the mosques of Constantinople; regret the melancholy spectacle of the palaces of the Cæsars being delivered up to the plunder of Vandals and of Goths; and, finally, look with feelings of pride to see emerge from the universal havoc a class of structures which, leaving the old civilization far behind, have carried our progress down to the present age; and which so beautiful in their construction, so noble in their design, seemed alone destined to be the monuments of the Christian faith. We are not expected to speak of those moral influences, however, which led to the spread of Christianity; and we shall say but a very few words on the characteristic style of the Christian churches, and of the masons who reared them.*

The principal feature of the Christian style of building is the *Arch*. A true arch is composed of wedge-shaped stones [*voussoirs*], or bricks, which support each other by their lateral pressure. It must be supposed that this species of arch, so extensively used by the Romans, was not known to the Greeks, at least in the early periods of their history; otherwise their copious language would not have been destitute of a proper name for it. Yet Mr. Wilkinson† has shown that the Egyptians were perfectly well acquainted with its principles and methods of construction; and in the woodcut annexed to his description, he furnishes us with a specimen, which he thinks must have been built 1500 years before Christ. The Romans were well acquainted with the arch from the earliest periods of their history. It was the form of construction in their celebrated *cloaca maxima* [large drain], the construction of which is ascribed to Tarquinius, and which were formed of three concentred arches, one within the other. The arch, indeed, forms the most striking difference between Greek and Roman architecture. The Roman arches, it is proper to add, were of the semi-circular form, which characterises the triumphal arches of Titus and Constantine, and the arches of the Coliseum. From that shape its gradual change to the Byzantine form is very perceptible; but we are more at a loss to understand its conversion to the pointed arch of the Gothic period.

The pointed arch came hand-in-hand with the magnificent structures of that period, and no writer has been able to trace with accuracy its previous origin. It has been fancifully attributed to the holy groves of the Celt. It has been supposed to be a copy from the huts made with trees; from the forming of timber buildings; and from the lofty and aspiring lines of the pyramids of Egypt; and that it originated from the method of interlacing semi-circular arches, so common during the Norman period of architecture. Sir Christopher Wren, Horace Walpole, Lord Aberdeen, Britton, and a whole host of "critical inquirers," have entered with infinite gusto into the merits of this vexed question; and, perhaps, the greatest weight of evidence is in favour of the belief, that it was brought from the East by the Crusaders. But, whatever its origin, its effect was sublime. No temples of the earlier nations can compare with the temples of the Christian in point of religious character, those noble and exquisite structures, whose feathery spires, slender, yet graceful columns, the reticulated arches, the traceried roofs, the groined vault, the glass windows of delicate blue and ruby tints, seemed like unto the jewel-built heaven of the Revelation to the Christian in his dreams.

It will be easily understood that the vocation of the builder was then pre-eminently an honourable one. There were amateur architects, as the Bishop of Ely; and amateur masons, as the Benedictine monks. The master of works at Henry VII.'s Chapel was the prior of St. Bartholomew's, whom Stowe calls a great builder; and Abbot Islip was another of the numerous band of churchmen who aided in the erection of numerous structures. We can select no better example of the fruits of the spirit which then animated society than the foundation of Westminster Abbey. It was once, in the touching language of Clifford, "a little monasteric builded to the honour of God and St. Peter, with a few Benedict monks in it

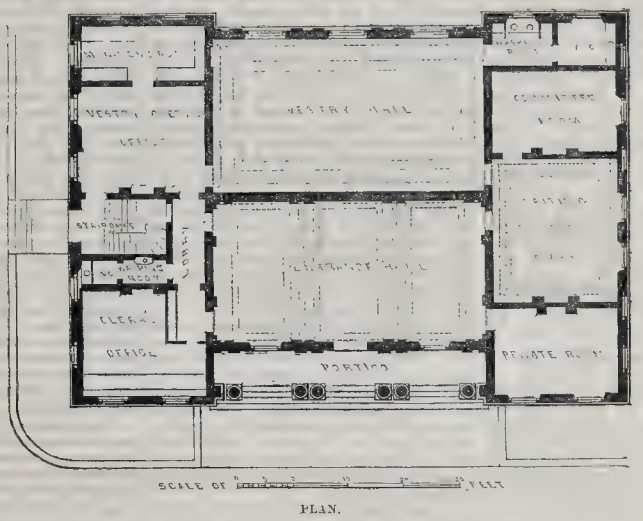
* On these subjects we refer the reader to the excellent contributions of Mr. P. Smith, in the "Dictionary of Classical Antiquities."

* The "Letters to a Lady," in Vol. X. of the *Builder*, may be referred to

† Ancient Egyptians, Vol. III. p. 331.

PADDINGTON VESTRY-HALL.—MR. JAMES LOCKYER, ARCHITECT.





PLAN.

[See page 753, *ante*.

under an abbot serving Christ; on a site overgrown with thorns, and environed with water." How this lovely chapel came to be the Chapel Royal of England, and the tomb of England's kings, was a curious episode in the history of our country. Edward the Confessor was unable to fulfil a vow he made to undertake a pilgrimage to Rome. The Pope granted absolution, on condition that the King should rear a monastery to St. Peter. It is then recorded that St. Peter appeared in a vision to an aged and a pious monk, named Wulsinius, to whom he gave directions concerning its foundation. "There is," said the Apostle, "a place of mine in the west part of London, in which I choose to dwell; which I have consecrated with my own hands, honoured with my presence, and made illustrious by miracles. This let the King, by my command, restore, and make a dwelling of monks, and stately build, and amply endow, until it shall be likened unto the house of God, and to the gates of heaven."* But there was yet another influence we must rapidly glance at, which conspired to render the mediæval masonwork a proper explication of mediæval architecture.

It was during the dark periods of the middle ages that the singular brotherhood known as Freemasons emerged from their mystical obscurity, and rose to the zenith of their splendour. Their principles of association were of great antiquity. It was said by the most enthusiastic neophytes that they could trace their lineage to the flood. Undoubtedly there was in Egypt a secret association to which was confined all abstract knowledge relating to science and art; and the Eleusinian mysteries of Greece derived their origin from the land of the Pharaohs. Still later we see that the disciples of the Dionysian mysteries possessed the exclusive privilege of erecting temples and theatres in Asia Minor; that they used symbols in their intercommunication known only to themselves; that they met at stated periods for convivial purposes; and that they were, according to some accounts, divided into lodges governed by a chief. In the declining periods of the Roman empire, the artificers were bound together in a somewhat similar manner; for they possessed colleges or lodges, where they held their meetings, and studied the principles and practice of architecture. We are uncertain, however, whether these colleges were part and parcel of a general body who acknowledged one supreme head; and accordingly it is rather to the members of the schools for the study of architecture which Constantine established after the removal of the capital to Byzantium that we may look for the parent stock of the Freemasons of the middle ages.

The Church of Rome saw the importance of the growing taste for stately buildings which characterised the body. She conferred upon the builders of the Italian churches comprehensive privileges and immunities. She gave them a right to govern themselves by means of their own peculiar laws and ceremonies. Such proceedings soon produced the desired effect.

* Neale's "Westminster Abbey."

Greek, Italian, Flemish, and German artists hastened to join the great society, and to become initiated into its mysteries. And, it has been conjectured, that from their privileges, their immunities, their exemption from local authority, and, above all, from their roaming disposition, they at length acquired the time-honoured appellation of the *Freemasons*.

Italy was not large enough for this strange confederacy. When the land was studded with those noble churches of which the cathedral at Pisa is a type, they were then forced, or rather enjoined to emigrate to other countries. It has been stated that wherever a missionary of the Church of Rome was seen to raise the cross, there were to be seen also a master mason and his apprentices measuring and planning, cutting and carving, holding lodges, founding abbeys. They were to be seen at work all up the course of the Rhine, in Lorraine and Franche Comté, in Burgundy and Normandy; on the banks of the Thames, on the valleys of the Tweed; within the precincts of the ancient city of York, in the sequestered village of Kilwinning; in the solitudes of Roslin; under the shadow of Arthur's seat. The monuments of their artistic genius and mechanical skill, which have survived the ravages of time and the havoc of revolutions, are the noblest monuments mankind ever reared to the Deity. And although we are accustomed to regard their descendants in the light of a merely convivial or charitable association, we must not forget their original position and purpose. We must never forget that their lodges were the repositories of art and science at a period when Europe was plunged in barbarism; when kings were unable to read; when men of learning were regarded as astrologers. Scarcely a vestige now remains of their magnificent designs. These, by a law of their order, were concealed rather than made public; suppressed and destroyed rather than be exposed to the eyes of the uninitiated. Our only proofs, besides their monuments, of the deep science, profound foresight, and complicated calculations which distinguished the craftsmen, are derived from some solitary parchments dug from the archives of the German monasteries. Yet, although their designs are lost to us, a few of their manners and customs still linger among their descendants. The masons who cut the stones of the palace of Westminster still use the devices of the masons who cut the tracery of the Abbey; and the Scotch hewers at the National Gallery still drop their "mell" at the singular "*chap*" [*Anglice*, knock] which awakened the echoes of the ancient chapel of the Holy Rood.*

We will pass without any description the periods of the Reformation and of the Revolution. A population fired with zeal was let loose upon the carvings and painted glass of the old churches. And a fearful havoc they made, with a cry of purification, and sanctification, and justification, and what not. There was then "a pulling down of strongholds," "a cleansing of the sanctuary," "a destruction of the idols of Baal." Verily, the Puritans were good men most of them, and sincere even in their bigotry; but they did incalculable and irreparable damage to the most exquisite mason-work—of the most noble and graceful structures our country has ever seen. The remnant of this spirit prevented the decoration of St. Paul's, and had previously hampered Wren in his great design.

After the Restoration came what we may denominate the modern school of building. We select in this instance for our illustrations the work on St. Paul's Cathedral.

Early in the year 1674 the workmen began to clear away the ruins of the ancient cathedral, preparatory to laying the new foundations. The pulling down of the old walls, which were in many places 80 feet high and 5 feet in thickness, was an arduous undertaking. At first the men stood above, working them down with pickaxes; while labourers below cleared away the rubbish, part of which was applied to the paving of the streets, and part to the building of the parish churches. The work proceeded in this fashion until the workmen came to the middle tower, which formerly carried the lofty spire; but they quailed before the dangerous task of mounting 200 feet to cast down this ruin. The inventive genius of Wren immediately conceived the idea of attaining the end by means of gunpowder, which was done accordingly with the desired effect. From an accident which happened at a subsequent blast, the architect was prevented from employing gunpowder; and his next great device consisted of the ancient battering-ram. This machine he suspended from a triangle, and kept thirty men constantly beating with it on one part of a wall for a whole day,—an operation which seemed to the workmen marvellously like an utter waste of time. But the great architect knew better. He knew the effect of concussion; he encouraged them to persevere; and at length, on the second day, the wall began to tremble at the top, and fell in a few hours. The first stone of the new cathedral was laid on the 21st June, 1675; it was October, 1694, before the masonry of the choir was finished; it was December, 1697, before divine service was performed in the cathedral for the first time since the fire; and it was not until the year 1710, when Wren had attained the seventy-eighth year of his age, that he laid the highest stone of the lantern on the cupola, attended by his son and the venerable Mr. Strong, the master-mason, who had attended, during the long period of thirty-five years, to the fulfilment of the designs of his great master.

The architect was deceived by the false promises of the king; hampered for want of funds, restricted in his designs by the king's brother, the Duke of York, who, it was whispered, already meditated converting the Protestant into a Roman Catholic cathedral. The workmen, too, gave some annoyance to the architect, from their ignorance and their dissipation. We remember reading in one of the comic dramas of the Restoration, a passage which, although to some extent a satire and an exaggeration, seemed, nevertheless, too circumstantial and minute not to be true-founded. The author, in passing through St. Paul's Churchyard during the progress of the works, observed a parcel of sawyers and stonecutters so hard at work, that, notwithstanding the heat of the weather and the hard work, they were actually blowing their nails; and that ten men were actually about two men's work. The reason assigned for this laxity was profoundly philosophical. This building, it was said, is a work carried on at the national expense, and should on no consideration be hurried; for its reputation will depend ultimately not on the architecture, not on the masonwork, but on the number of years it occupied in its erection!

In our next article we shall have to speak less of masonwork than of the masons themselves.

* See for a sketch of the history of Freemasons in the *Builder*, Vol. ix. No. 411.

ON THE APPLICATION OF PAINTED GLASS TO BUILDINGS IN VARIOUS STYLES

In composing this paper on painted glass with reference to its employment in buildings in various styles of architecture, I have endeavoured as much as possible to keep in mind practical objects. Many matters, therefore, of interest to the antiquary, will be passed unnoticed, or with a brief allusion to them—my object being, as far as I am able, to supply an answer to the question, what is the kind of painted glass best suited to a building of a given character?

On a question so wide and complicated, it is not only natural that very different opinions should exist, but extremely difficult to ascertain which is the most correct. The inadequacy of language to express ideas so subtle as those of which questions of taste are composed, must ever be an insuperable obstacle to bringing questions of taste to a certain determination by argument; a consideration which is condemnatory of the modern vice of dogmatizing upon such subjects. And the nature of the only remaining tribunal—the concurrent opinion of men of taste—that is of men who have given their attention to such matters, and whose views are respected by others engaged in the same pursuits—of itself sanctions a great latitude of sentiment; the feelings and habits, the education and temperament of individuals, even their natural appreciation of form or colour, all insensibly influencing their opinions on a subject respecting which there exists no definite standard. I am therefore very far from claiming any sort of infallibility for the views I am about to submit to your consideration—views which I shall attempt to support rather by calling your attention to objects with which you are already familiar, than by elaborate argument.

The variety of buildings which may require to be decorated with painted glass is great. Some are in the Greek, or Palladian styles of architecture, others are in the Gothic styles; and each building may be more or less grave or solemn in its aspect than others of its class. Such differences in the buildings demand, of course, corresponding differences in their painted windows. But before entering upon this topic, it will be convenient to declare what I believe to be the best subjects for glass painting, and the best mode of executing them. With regard to the mode of executing glass paintings, I will recall your attention to a paper which I read at this Institute about a year ago, on the methods of painting upon glass;* in which, after stating that there were three distinct modes of executing glass paintings, viz. by the mosaic method, in which the local colouring of the picture is produced by means of glass coloured in its manufacture, the shadows and outlines only being executed with an enamel colour; by the enamel method, in which the colouring of the design is effected by using enamel colours; and by the mosaic enamel method, by which the colouring of the picture is produced by a combination of the two former methods,—I concluded that the mosaic method was the best; because it was, from the nature of the thing, more favourable than either of the others to a display of the translucent quality of glass, and consequently of its brilliant and powerful colours; whilst, at the same time, it afforded the means of executing works as highly pictorial as the windows of the transepts and north chapel of Brussels Cathedral, —works which maintain their superiority in point of effect, when compared with a series of later examples, including some of the most beautiful specimens that modern continental art can boast. This conclusion—for the soundness of which I must refer you to the paper I have named, and to the works of art therein mentioned—will confine our inquiry to what are the subjects best adapted for representation in glass paintings, executed according to the mosaic method.

These subjects may be divided into the following classes:—Patterns, similar to those used throughout the Mediæval period, and which usually consist of ornamental work in white glass, but sometimes of scrolls of foliage, either white or coloured, on a coloured ground. Pictures, where the objects are represented as seen in one plane, as in a bas-relief—such as we see in the painted windows of the twelfth and thirteenth centures; and pictures, where the objects are represented as occupying several planes, as in nature—such as we meet with in the painted windows of the first half of the sixteenth century, and, of course, compositions consisting entirely of such patterns or pictures, or partly of patterns and partly of pictures. To avoid any possible misconception, I should perhaps here state, that any reference to Mediæval examples in this paper, is made only for the purpose of illustration, and not with any intention of conveying an impression that they are fit objects of imitation. Most valuable hints are doubtless to be obtained from an enlightened examination of such examples; but before we think of copying them, we ought to be quite sure that they are worth copying; and I will undertake to say that not one ancient example of painted glass, except, perhaps, those consisting of pattern work, can be considered as a perfect model for imitation. All, with the trifling exceptions I have named, of whatever date, are defective in one way or another, either in composition, drawing, or general effect. Even the finest Cinque-cento examples, which, taken collectively, are perhaps of all ancient examples the least open to criticism, were done at a time when the human figure was but imperfectly understood by the glass-painters. And with regard to the often-expressed notion, that it is better to submit to copies of Mediæval examples than trust to modern invention, permit me to

* "On the Methods of Painting upon Glass." See p. 259, *ante*.

say that a more unjust imputation against the taste and skill of the nineteenth century never was made, or a more complete apology conceived for indolence and incapacity. Whose fault is it, I would ask, that low art, at least in regard to glass-painting, should seem to be almost inseparably associated with what are called Church principles of architecture? Are not the patrons of the art to blame for indolently acquiescing in and sanctioning a mere system of copying, because they have not sufficient energy to study glass-painting thoroughly, and make themselves acquainted with its principles? We may depend on it, if glass-painting, or I may say art in general, had a practical bearing on the affairs of life, instead of only furnishing a means of amusement, we should no more hear of currency being given to such doctrines respecting it, than we now hear engineers advocating our going back to the single-condensing steam-engine, or travellers by railway yearning for a return to the old horse-tracks.

The patterns to which I have alluded do obviously comply with the conditions of the mosaic method in the fullest and simplest manner; for the brilliancy of the glass is altogether unsubdued in these works, and the mechanical construction of the window is in harmony with their design,—the leadwork connecting the pieces of glass either forming an integral part of the pattern or else actually constituting the pattern itself. I may illustrate my meaning by a reference to familiar examples, such as the Five Sisters, at York, and the geometrical pattern works, executed in white glass, so common in the seventeenth century, particularly on the continent, of which engravings have occasionally appeared in the *Builder*.

Turning from these, the works which next appear the most completely and simply to comply with the conditions of the mosaic method, are the pictures of the twelfth and thirteenth centuries; for, of all pictures, these admit of the employment of glass of the most powerful hue, and the least diminish its brilliancy. Here also the lead-work is made conducive to the effect of the design. It is true that in the Cinque-cento style we meet with pictures in which, as in a bas-relief, all objects are represented as occupying one plane as effectively as in a picture of the earlier period; but in no glass paintings is the bas-relief principle of representation effectively carried out with so much *simplicity* as in the pictures of the twelfth and thirteenth centuries. This, I apprehend, is owing no less to the nature of the glass of which these works are formed, than to the composition of the picture. This glass, when compared with the glass used in later times, is remarkable for its apparent solidity—a quality which, without sensibly detracting from the brilliancy of the glass, imparts great depth and richness to its hues. Hence the artists of that early period were able to leave large breadths of glass in their pictures unincumbered with any enamel colour—with which, in the mosaic style, as I have already informed you, the painting of the picture is performed—without incurring the risk of producing a weak or flimsy effect. We all are aware of the fact, that the shields of arms and the panel grounds, which in later years were so profusely adorned with diaper patterns, executed with the enamel brown paint, are in the works of this period usually left quite plain—the artists appearing to rely for effect on the tone and richness of the material itself. So we perceive, on examining a figure in any one of these early pictures, that whilst the deepest shadows are represented in the simplest manner by opaque lines, and the shadows in half-tint by a slight wash of enamel brown, the proportion of the glass left quite clear for the high lights, is much larger than in later glass paintings. That such a simple mode of execution, if applied to a more pellucid and watery material, must necessarily produce only a poor and flimsy effect, may be learnt from the modern copies of thirteenth century glass. But without dwelling on this point, I will call your attention to the composition of a twelfth or thirteenth century picture, as of itself insuring distinctness without the aid of any great breadth of shadow. This is simple enough: it consists in arranging the figures in one line, usually on a bar crossing the picture; in keeping the action of the figures as much as possible in the direction of the plane of the picture, and in insulating and separating the figures by the ground of the picture—a treatment, as you perceive, corresponding with that of an antique bas-relief. And since this treatment is in general more intelligibly carried out in the earlier examples, I think we may venture to ascribe it to the fuller influence of classical art at an early period of glass painting. In addition to this, as a general rule, the colouring of the figures is kept lighter than that of the ground of the panel. Of course these remarks are derived from an examination of a great many examples. I mention this, because I could easily contradict almost every one of them by a reference to particular works. It is from a majority of specimens only that a general principle is to be collected. The subjects to which I have just alluded are necessarily characterised by a certain archaic formality, arising from the stiffness of the colouring, and the simplicity of the design and execution. I have now to direct your attention to subjects of another class, as remarkable for their pictorial effect. I mean the picture glass paintings of the first half, or more correctly, of the second quarter of the sixteenth century. These works are in many respects the very opposites to those just described. Their colouring is harmonious rather than deep, and they are highly finished—peculiarities which I could show to be connected with the nature of the glass employed in these works, which, without being as flimsy and pellucid as ordinary modern glass, is yet very inferior in depth and richness to that of the twelfth and thirteenth centuries. Still these works will be found to comply with the conditions of the mosaic method, after making allowance for their different nature, equally with the works of the twelfth and thirteenth centuries; and I hope I shall be able to prove that they are entitled to equal estimation. Their composition is various, consisting sometimes, as in the pictures of the twelfth and thirteenth centuries, only of a line of figures occupying a single plane; but more commonly of a group—of *foreground* figures, it is true, but which in parts recedes from the eye, the figures not unfrequently occupying in plan the arc of a semicircle, as in some of Raffaelle's designs; and beyond the figures some distant object is usually represented, such as the sky, or a landscape. The picture, therefore, is designed on the principle of representing depth, and, in the best examples, is executed in such a manner as to produce the effect of depth. The means resorted to for this purpose are very simple. First may be noticed, the choice of such subjects as are capable, without a violation of probability, of being represented in a somewhat severe, if not harsh manner: thus a landscape, or a sea-piece, a full idea of which cannot be conveyed without representing the graduated tints and soft outlines of nature, was never, at this period, selected as the *principal* subject of a glass painting. On the contrary, when a landscape background is adopted, it is used merely as an accessory, to set off and relieve a group of foreground figures, in which all the interest of the composition centres. And, secondly, we may remark, that all the objects in the picture are represented as if they were seen under the influence of broad sunshine—a mode of treatment the most favourable, not only to a display of bright lights and sharp decided shadows, but to the general transparency of the picture, it being possible by this means to separate the various objects from each other without having recourse to extensive masses of shadow or concentration of light, the use of which, however effective in the works of Rembrandt and other oil painters, is wholly unsuited to the conditions of glass painting, on account of its very limited scale of transparent shade. The heaviness resulting from the adoption of the opposite principle, of concentrating the light in the middle of the picture, and keeping the rest in comparative obscurity, is shown in the upper subject of the west window of New College Chapel, Oxford; in the west window of Magdalen College Chapel, and in a variety of modern works; and the superiority of the sunshine principle becomes apparent on comparing these works with others in which it is adopted, as the windows of the North Chapel of Brussels Cathedral, those of St. Jacques Church, Liege, or the windows of Lichfield Cathedral.

A glance at the glass at Brussels and Lichfield will explain my meaning better than any words I can employ. We there see that the figures are cut out from the background, and the architecture from the sky or landscape, as much by the opposition of light and shade, as by the local colours: and thus the crispness and clearness of a sunshine effect is not only highly conducive to the brilliancy of the window, but is most favourable to the concealment of the leads, which form part of and are wholly lost in the sharply-defined shadows with which the foreground objects are bounded, and even in the background are on a close view not unfrequently absorbed in the colouring, but at all events pass unobserved in the general crispness of the picture, when it is viewed from the proper distance. Of course I am not speaking of the broad modern lead, used in repairs of old glass, but of the ancient leads themselves, which never until almost the beginning of the seventeenth century exceeded $\frac{1}{8}$ of an inch in width. In Cinque-cento glass paintings, therefore, the lead-work forms an integral part of the design, equally as in a twelfth or thirteenth century picture. And these works also evince a thorough compliance with the mosaic system in preserving the translucent qualities of glass. A Cinque-cento glass picture, notwithstanding the power of its shadows and high finish, which entirely save it from the charge of weakness or poverty, is still a brilliant and diaphanous glass picture, owing partly to the crisp treatment alluded to, partly to the care taken to leave considerable portions of the glass, though not such relatively large portions as may be seen in the works of the twelfth and thirteenth centuries, unincumbered with enamel brown. But without going further into the minutiæ of the subject, I will ask any one accustomed to compare glass paintings of different dates, whether in any so high a pictorial effect has been produced with so little diminution of brilliancy, as in the works of the third quarter of the sixteenth century.

It will be perceived, that from this summary I have omitted all notice of glass paintings of the fourteenth and fifteenth centuries. I have done so from a conviction that the nearest approach to an artistically flat style of representation is to be found in the works of the twelfth and thirteenth centuries; and that the nearest approach to an artistically rotund style of representation is to be found in the works of the second quarter of the sixteenth century: and that there is nothing to choose between a really flat and a really rotund style. At first sight there is, I admit, but little difference between a thirteenth century and a fourteenth century picture, in point of composition; but a closer examination generally brings to light various minute differences, tending to show, either that the artists of the fourteenth century were already contemplating a change from flatness to rotundity of representation, or that they did not strictly adhere to their predecessors' rules for insuring distinctness in a flat style. The inconsistency not unfrequently seen in works of the thirteenth century, of representing the figure in relief, but omitting to indicate the recess of the niche in which the figure is supposed to stand—a mistake which perhaps arose from imitating in glass too literally the designs of ancient goldsmiths' work, where, as everybody knows, embossed figures are often stuck on a flat ground, having architectural forms drawn in outline upon it,—is repeated and exaggerated in pictures of the fourteenth century. Indeed, most of the fourteenth century groups that, according to the usual fashion of the day, are surmounted with shrine work, look just like groups painted on flat panels, fringed by way of ornament with spires and crockets; so completely does the apparent flatness of the canopy—rendered no doubt more conspicuous by the increased elaboration of its details—correspond with the flatness of an ordinary panel. And the figures themselves, owing partly to the increased breadth of their draperies, inattention to the principle of insulating them by means of the ground colour of the panel, and a bad selection of the colours of the drapery, certainly do not in general appear at a distance so distinct as the figures in a thirteenth century picture. I there

fore cannot but regard the fourteenth century style of glass painting as inferior to the thirteenth, and the fifteenth century style as inferior to that of the fourteenth. The fifteenth century was evidently passed in the effort to get out of a flat style of representation into a round one. It is true that all the pictures of this period appear to be flat, but they are flat in effect only, and not on principle: their flatness is the result of imbecility, not of design. They are designed as much on the principle of depth as a Cinque-cento glass painting, but they do not, like it, produce the effect of depth, because their designers were ignorant of the means of attaining the desired result. As in a Cinque-cento glass painting, so in one of the fifteenth century, the figures are not unfrequently arranged on the arc of a semi-circle, and are not cut out or separated from each other by stiff colour. And that the intention was to represent depth is plain from the representation of distant objects, of sky and landscape, coloured with considerable regard to the hues of nature; but, contrary to the practice of the Cinque-cento artists, the shadows are sometimes misplaced, and are always too weak; and the gradations of colouring, though such gradations might have been as easily made as in Cinque-cento work—the nature of the material being the same in both cases—are not sufficiently attended to. Hence the glass pictures of the fifteenth century, beautiful as they sometimes are in detail, remind one in general of an assemblage of court cards. They frequently produce no other effect, even at a moderate distance, than that of a mosaic composed of strangely-shaped pieces of glass of various colours. I think, therefore, that we may leave the works of the fourteenth and fifteenth centuries as objects chiefly interesting to the antiquary.

Having thus indicated, as briefly as I could, the sort of subjects which appear to be most suited for glass paintings, I will endeavour to show what sort of glass paintings are best suited for particular buildings. And here the real difficulty of the subject may be said to commence; for since no example of contemporary glazing is to be found in any building earlier than the Middle Ages, it is only by analogy that we can arrive at the fitness of painted glass for classical buildings, if we rely on experience as a guide; and in a matter of this sort, I fear there is no guide so trustworthy as experience. It will be admitted, I apprehend, that the earlier Gothic styles are more severe in their architectural character than the later ones; and I think that you will likewise admit, on reflection, that the glass most in harmony with Gothic buildings in the Norman or Early English styles, is that of the twelfth and thirteenth centuries. I have tried for a long time past to discover the reason of this conformity, and have arrived at the conclusion that the harmony between the painted windows and the architecture depends far more on the colouring of the windows than on their design. I have often contemplated the general effect of thirteenth century, of fifteenth century, and even of sixteenth century painted glass, in the windows of a Norman or Early English building, from a distance too great for admitting of my making out the design with any degree of distinctness, and have invariably observed that the colouring of the earlier glass most accorded with the character of the architecture, and that the harmony was the same, whether the windows were almost entirely formed of white glass, like the Five Sisters at York, or were richly coloured, as at Bourges or Canterbury. As might have been expected, I have not met with the same opportunities of contrasting the effect of the thirteenth century painted glass with that of the fifteenth or sixteenth century in reference to its harmony with the architecture of the sixteenth century, but such experiments as I have been able to make have tended to create an impression on my mind, that the glass paintings of the fifteenth and sixteenth centuries do harmonise more completely with the character of the architecture of the fifteenth century than the glass paintings of the thirteenth. However, without pressing the last point, I will venture to express a firm belief that the colouring of a sixteenth century glass painting does harmonize better with the character of a building in the Renaissance style, than that of a thirteenth century glass painting.

In these conclusions I would observe, that I have been influenced by the general effect of the glass painting rather than by its force, because I have remarked that good Cinque-cento glass paintings, which are hardly, if at all, inferior in power to Early English ones, do not in general harmonise with thirteenth century buildings so completely as the windows of the thirteenth century. The inference I draw from these experiments is, that there is an analogy between the colouring of twelfth and thirteenth century windows, and buildings remarkable for the gravity and solemnity of their appearance. And this, when the nature of the colouring of these windows is analysed, will, I think, be found to accord with Sir Joshua Reynolds's views. He says, in his fourth discourse, "With respect to colouring, though it may appear at first a part of painting merely mechanical, yet it still has its rules, and those grounded on that presiding principle, which regulates both the great and the little in the study of the painter. By this the first effect of the picture is produced, and as this is performed, the spectator, as he walks the gallery, will stop or pass along. To give a general air of grandeur at first view, all trifling or artful play of little lights, or an attention to a variety of tints, is to be avoided. A quietness and simplicity must reign over the whole work, to which a breadth of uniform and simple colour will very much contribute. Grandeur of effect is produced by two different ways, which seem entirely opposed to each other. One is by reducing the colours to little more than *chiaro oscuro*, which was the practice of the Bolognian schools, and the other by making the colours very distinct and forcible, such as we see in those of Rome and Florence. But still the presiding principle of both these manners is simplicity. Certainly nothing can be more simple than monotony: and the distinct blue, red, and yellow colours, which we see in the draperies of the Roman and Florentine schools, though they have not that kind of harmony which is produced by a variety of broken and transparent colours, have that effect of grandeur which was intended. Perhaps these distinct colours strike the mind more forcibly, from there not being any great union between them: as martial music, which is intended to rouse the nobler passions, has its effect from the sudden and strongly-marked transitions from one note to another, which that style of music requires; whilst in that which is intended to move the softer passions, the notes imperceptibly melt into one another." Now, if we compare the colouring of a thirteenth century glass painting with that of a Cinque-cento one, we perceive that the colouring of the former consists of an assemblage of powerful, distinct, positive tints, skilfully arranged, but more on the simple principle of a mosaic, than on the more blended principle of a painting; whilst the tints of the latter are less forcible, less decided, and more blended together. I have seen some Cinque-cento glass pictures in which there is no red, and but little positive blue, the colouring being almost entirely composed of secondary tints, and in which the transition from one tint to another is scarcely more marked or sudden than is the case in some of Titian's pictures. These considerations may, perhaps, be sufficient of themselves to justify the opinion that the colouring of an Early English glass painting is more calculated to produce a grave and solemn effect than that of a Cinque-cento one; but in acceding to this opinion we ought not to overlook the fact, that the tone of colour of an Early English glass painting is cool, and that the tone of colour of a Cinque-cento glass painting is warm, and that a cool tone of colour of itself has a tendency to produce a grave effect, and a warm tone to produce a gay effect. If these views are correct, it follows that we ought not only to continue to employ for the windows of twelfth and thirteenth century buildings, glass paintings similar to those of the twelfth and thirteenth centuries, as regards the tone and principle of the colouring, but that we ought to glaze in a similar manner the windows of all other buildings which can be said to possess an air of gravity and solemnity equal to that of a twelfth or thirteenth century building; using, of course, weaker colours, warmer tones, and a more elaborate mode of execution for the windows of buildings in a less severe style. Some people are of opinion, that in no style but the Gothic can so solemn an effect be produced; but it seems to me that the solemn character of a building depends rather on its plan and arrangement than on the style of its details. A Norman cathedral is as solemn as a Gothic one, and parts of the Coliseum at Rome are, I am told, as gloomy and solemn as the aisles of a Norman building. The rule, therefore, might well apply to certain ecclesiastical buildings in the Roman style of architecture, and I see no reason why it should not equally apply to certain ecclesiastical buildings in the Greek style: certainly these buildings, owing to the simplicity of their plan, do not possess the gloomy effect of a Gothic cathedral, but the extreme severity of the architecture imparts to them an air of gravity and solemnity which, I apprehend, is rarely equalled by a twelfth or thirteenth century building of corresponding dimensions.* C. W.

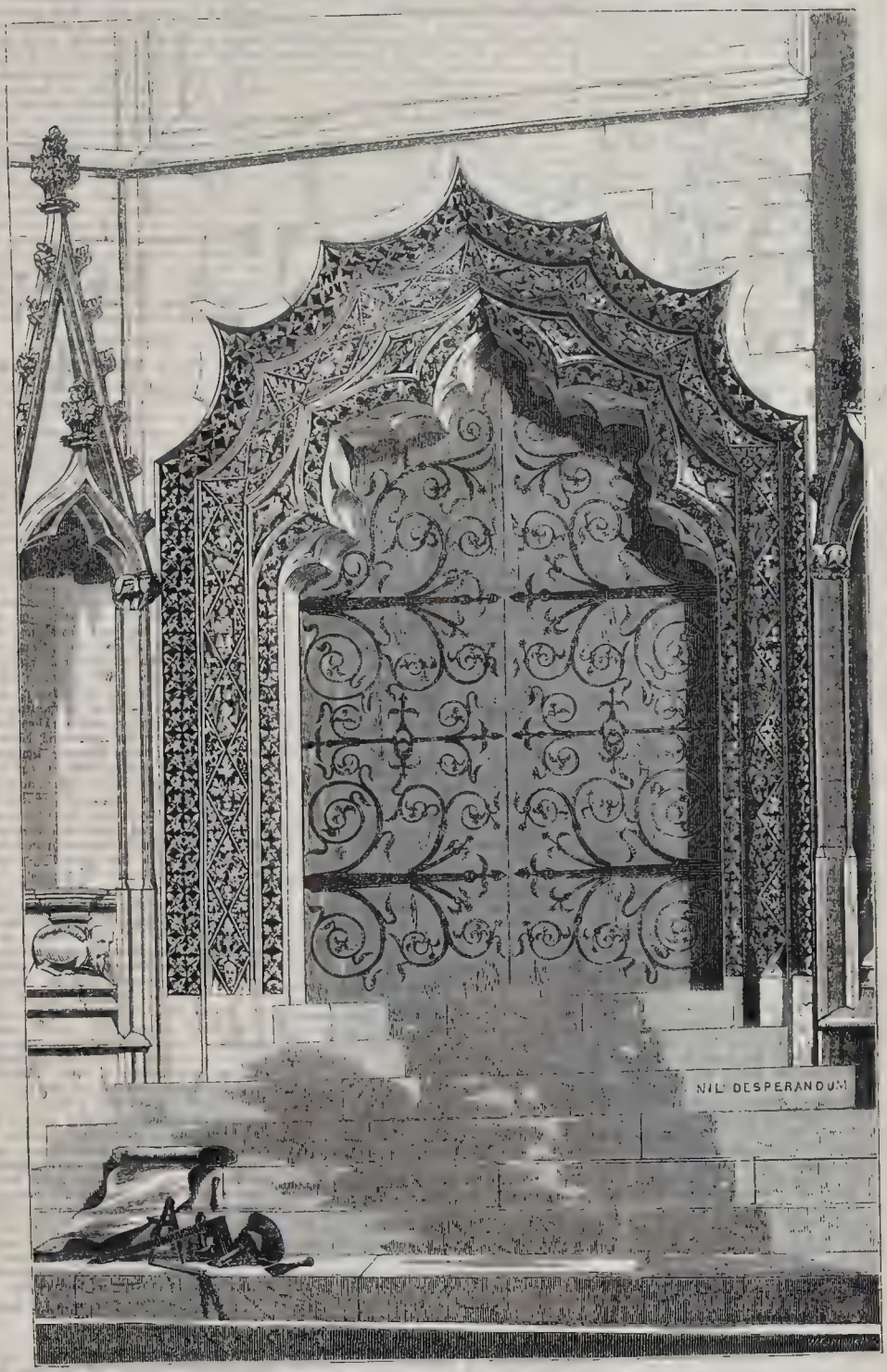
WHAT BINDS THE WORKING MAN?

I am inclined to think that your able correspondent, "C. N." is hardly acquainted with the many tyrannies which forbid the working man's refusal of such quarters as he condemns. They are the mightiest which ever held poor suffering humanity in chains. They are these:—first, want of time; second, want of knowledge; third, want of energy; fourth, want of means; fifth, want of choice; sixth, want of the natural instincts afforded by the organs of sense; seventh, want of help and appeal. What hidden and Herculean source of action does he suppose in a poor working man which is to combat these? Let us take such an one, startled may be into an unwonted sense of danger by the minatory rebukes of death, by the warnings of the *Builder*, or by his own awakened reflections. He has decided on closing behind him the door which has shut in so many hours of sorrow. Can he spare more than a half-day's labour for time to look about him? Can he overpass the short tether of his morning's hurried, his evening's weary walk? Does he know the habitat of every foul nuisance? Has he at his fingers' ends, every approved sanitary formula? I assert boldly, that of our fellow-citizens, three-fourths are deficient in an astounding degree of the ordinary faculty of *smell*. Has he the energy to object to or remedy any source of disquietude he may detect with these blunted organs in the subject of his overhurried choice? Has he the means? Has he a law to compel the man, whose profit-maker he becomes, to give him more than the six superficies of building materials which shelter him? Does he not see all around him living and dying under the same condition? Will "C. N."—honour to him, nevertheless—come forward and do anything for him? Has he anything to appeal to within the four corners of Heaven but the everlasting "law of supply and demand," the law of his last enemy—Death?—a somewhat inverted law in his instance, since supply dictates terms to demand. Nay, let us act upon your correspondent's suggestion; let all the aggrieved and perishing householders of this "Babylon of Fog," march out once and for ever from these dens of death. Have they a Mount Aventine, on which to encamp while they come to terms with their whilom destroyers? Royalty, Parliament, the Executive, Philanthropy, united, vigilant, and determined religious organizations, awakened to the necessity of moral law and order as the basis of dogmatic and evangelistic edifying; education, cheap, free, and universal;—all these will find the evil which they *must*, first or last, and better first than last, *must*,—*must* encounter,—a redoubtable enemy to overcome; and the prisoners that lie bound in his dungeons will require an army to strike off their chains.

The Night is at Hand.

The Marylebone Free Library, at 27, Gloucester-place, New-road, will be opened to the public, we are informed, in January 1854. Its doors will be open gratuitously from 10 a.m. till 10 p.m.

* To be continued.



THE NORTH DOORWAY, ST. MARY REDCLIFF, AS RESTORED.—Mr. George Godwin, Architect.

ST. MARY REDCLIFF, BRISTOL.

THE NORTH DOORWAY.

IT has been determined to clear away the whole of the high ugly pews which disfigure the interior of St. Mary Redcliff, and which are so ill-arranged that they accommodate but few persons, and to put up oak sittings throughout the church, with pulpit, reading-desk, font, and screens of appropriate design, under the direction of Mr. Godwin. The altar will be brought one bay westward, as anciently it was, and an ambulatory, connecting the chancel aisles, formed by a screen of oak and glass, to give admission to the Lady Chapel. The font is to stand on the south side of the nave at the west end, and is to be formed of stone and alabaster, with a lofty cover of oak.

Tenders of two kinds were sought,—first for completing the sittings, &c. with comparatively thin bench ends, carved to a certain extent, and buttressed; and, secondly, for plain solid 3-inch ends, left for carving, to be executed afterwards as money could be obtained. The last course was ultimately determined on. The tenders for the works in that way, exclusive of the pulpit, reading-desk, and the stone-work required in the formation of the ambulatory between the altar-screen and the Lady Chapel, were as follow :—

Maggs, Bristol (including sum for contingencies provided for in other tenders)	£1,629	15	0
Hughes, Bristol	1,617	6	6
Bennett, Portishead	1,427	19	2
Ringham, Ipswich (using Memel oak)	1,409	0	0

Mr. Bennett's tender, which provided, according to the specification, for English oak, was accepted, and the works are now being proceeded with.

The funds are to be obtained by subscription. The Vestry voted a small sum, and in half an hour afterwards the individual members of it, including the vicar, Canon Madan, who gave a handsome donation, raised the amount to a thousand pounds. This is the more noticeable and praiseworthy as the majority of them have already subscribed considerable sums towards the external repairs and restorations.

These latter proceed steadily but very slowly. Although they have been long about, and much talked of, comparatively little has yet been done, only a few hundreds a year being obtained for the purpose, and the structure being very large. The south end of the south transept, with its singularly fine pinnacles, is now nearly completed, and looks exceedingly well. The old stone, where sound, has been refaced, and the decayed and removed portions have been reinstated with stone from Dundry, whence the stone was originally obtained for the erection of the church.

For the large three-storied window in this transept, funds for a stained glass window have been raised by the exertions of some ladies of the parish. A design has been made for it, but it is not yet decided on.

Other portions of the church are in a miserable, and even dangerous condition. The tower is gradually going to decay, and the turrets at the foot of it are sadly disrupted. The flying buttresses over the south aisle of nave are in a very dangerous state, especially three of them, which cannot possibly stand as they are much longer; and the three clerestory windows on the south side of nave, west of transept, are also in a bad state. The parapet on the south side of nave is in ruins.

The north porch, for which funds have been provided by the unknown benefactor signing himself "*Nil Desperandum*," is now very nearly completed, and we give in our present number a view of the north doorway, a very elaborate piece of carving. The north porch is full of work, as may be imagined, when we mention that it includes 55 niches; 2,320 crockets, from 4½ inches to 12 inches in height; 311 finials, ranging from 12 inches to 2 feet 6 inches high; and 178 grotesque heads, crouched figures, and enriched corbels; to say nothing of the masses of carving round and over the three doorways.

It will be seen in our view of one of these, the principal, that birds and grotesques are interspersed throughout the foliage: the sitting figures in the lozenges represent the Virgin Mary, Elizabeth, Joseph, the Evangelists, &c. The carving, as we have previously mentioned, has been executed by Mr. Rice, and is a good specimen of work

The wooden doors and iron hinges shown in the engraving are not yet made.

PROVINCIAL NEWS.

Sandhurst, Berks.—The works at the church of St. Michael are rapidly approaching completion. A new aisle, tower, and spire have been added; and the whole of the building has been thoroughly restored, from the designs of Mr. Street, architect. The old fabric, which was of the Early Transitional period, consisted simply of a nave, chancel, vestry, south porch, and bell turret. A new chancel arch has now been built, and the chancel lengthened, thus giving room for four stalls on each side. The west window is composed of four lights, in two couplets, and a circle (octo-foiled) at the head of the arch. The accommodation will be greatly increased, and the church is estimated to hold 217 persons. The works have been executed in a good manner by Mr. G. Wyatt, builder, of Oxford.

Winchester.—The *Hampshire Advertiser* states that the font in the new district church for the parishes of St. Maurice, St. Mary Kalendar, and St. Peter Colebrook was carved by Miss Hornidge, but was the gift of another lady, sister to the Rector of St. Maurice; that the font at St. Thomas's Church, which it had mentioned as her work, was carved by the Rev. A. O. Hodgson, a minor canon of Winchester Cathedral; and that the font in Easton Church was made and presented more than three years since.

Amesbury.—The Church of St. Mary has been restored, principally at the cost of Sir E. Antrobus and his wife, and under the superintendence of Mr. W. Butterfield, architect. Nearly every part of the old church, except the original plan and tower, has been remodelled. The east and west ends are quite new, as is also the end of the south transept. The chancel has been reroofed. The church has been repewed and re-opened. A new font, the gift of a lady, has been added. The woodwork was done by Mr. Fisher, and the pavement by Mr. Osmond, both of Salisbury. The edifice was re-opened on 8th inst.

Malvern.—The church tower being in an unsafe condition, and repeated advertisements having failed to induce builders to tender for its repair, the architect, Mr. Scott, recommended Mr. M'Cann, of Amesbury, to be called upon for a tender, which he lodged. The architect's estimate had been 1,200*l.*; that of Mr. M'Cann was 1,430*l.* the difference being attributed to increased cost of material and labour. The churchwardens at a vestry stated these circumstances, and proposed to obtain a loan from the commissioners under the Public Works Loan Act, to be repayable by small instalments extending over twenty years, and so to arrange that only an increase of a single penny in the pound should be added to the present rate. The vestry, however, after authorising the expense of architect's plans, consultations, &c. rejected the proposition by a majority of four in favour of a twelvemonth's delay. A poll has been demanded. In order to effect some repairs in the exterior and more ornamental portions of the tower at same time, Lady Emily Foley and Lady Lambert had offered to subscribe 300*l.* and various other sums were promised on condition that the parishioners did their duty in the matter.

Wednesfield.—The old church here had a narrow escape from destruction by fire on Sunday before last. In consequence of some piping of a stove having been conveyed into a flue which was supposed to be that of the vestry, but opened beneath the roof, several of the rafters were destroyed, and adjoining beams smouldered by fire. We shall hear more of such accidents with church stoves, we fear, before the winter is over.

Bushbury.—The church here has also been restored. The body of the edifice is entirely new, excepting the chapel on the north side, which has been taken down and rebuilt a little further northwards, to allow of a north aisle, but in other respects as it was originally. The nave and north and south aisles are in the geometrical style, having large windows, open timber roofs, and the interior pillars, arches, jambs, and other dressings and projections of stone. The chancel has been restored, and has been decorated in the interior by Mr. Chittenden, the master of the Wolverhampton School of Practical Art. The tower has also been restored. There is an increase of accommodation both in pews and free sittings. The whole of the works have been carried out from the designs and under the superintendence of Mr. Edward Banks, architect, and the several building works have been executed by Mr. Wullon. The church has also been decorated by the insertion of some new painted windows, and the restoration of some old ones. The west window, which is a new one, in the style of the early part of the sixteenth century, has been presented by the Misses Forster, of Ford Cottage. It contains representations of the four Evangelists. The design was gratuitously supplied by Mr. Charles Winston, of the Temple. The tracery lights are to be replaced. The east window, together with four of the chancel windows and three in the north chantry, have been presented by Miss Hincks. The design for the east window was also furnished by Mr. Winston, aided by suggestions from the Rev. J. L. Petit, and the Rev. H. Moore. The subjects, in six panels, are the "Humiliation" and "The Triumph;" below, centre, "The Crucifixion." On the left, "The Agony in the Garden;" on the right, "Christ bearing the Cross," above in the centre, "The Ascension;" on the left, "The Transfiguration;" on the right, "The Resurrection." The other two new windows in the chancel have been presented by the relations of the late Mr. John Pountney, of Low Hill, and their style is in keeping with the other windows of the chancel: they are illustrative of the two sacraments. A window at the north-east of the church has been presented by Mr. E. Banks. The remaining windows of the chancel, as also those of the north chantry, are restorations in ornamental patterns. The windows were all painted and restored by Messrs. Ward and Hughes, of London. Interest attaches to these windows in consequence of their having been composed of, or restored with, the glass made by Messrs. Powell from analyses of ancient glass, furnished them by Messrs. Charles Winston, and C. H. Clark, and made either by these gentlemen or Mr. Medlock, late principal assistant at the Royal College of Chemistry. An old monumental figure of Hugh de Bushbury, in the church-yard, has been restored and placed in a niche in the chancel, of which he was the founder. The cost of the restoration of the church, exclusive of the stained windows and decorations, will be from 2,400*l.* to 2,500*l.* The work was originated by a resident parishioner, who offered 1,000*l.* towards the expenditure.

Liverpool.—The chancel window of St. Peter's church, Sackville-street, Everton, has been filled with stained glass. The window is about 25 feet in height, by 12 feet in width, and is divided into five bays or lights, united at the top by tracery. The centre light is filled in with a figure of St. Peter, the four evangelists occupying two of the lights at each side. The tracery is filled in with the conventional symbols of the Holy Trinity, and with angels, seraphim and cherubim. The architects, Messrs. Hay, have, we understand, contributed towards the cost of this window. The artist was Mr. John Cairney, of Glasgow. A reredos has been fixed up to the eastern wall of the church. The inscriptions are in gold letters, in the Old English character, on a vermillion ground, upon polished plate glass, as suggested by the architects. Two of the plates were completely destroyed in course of transit from Glasgow.

Rothwell.—The *Leeds Intelligence* states that a mural monument has just been put up in Rothwell Church. It is of the Corinthian order, with pilasters and enriched capitals supporting the pediment, on which arms and crest are sculptured, and is of white statuary marble, upwards of 8 feet high. It was executed at the marble works of Mr. Dennis Lee, of Leeds.

York.—The partial rebuilding and restoration of Askrigg Church (Mr. Dickons, of Durham,

architect) has been entrusted, by the building committee, to Mr. John Holmes, of Bramham, who is also the contractor for the building of the new union workhouse at Sedbergh, in the same neighbourhood.

FINE ARTS IN DUBLIN.

We find that a new "Art-union," with many influential promoters, has been set on foot. As a distinguishing characteristic from its contemporary, the "Royal Irish," and its defunct predecessor, the "National," it has been resolved by the committee not to issue any engravings whatever, but to offer, as prizes, a collection of pictures selected from the Fine Arts Court of the Great Exhibition, and Royal Hibernian Academy.

The project of a National Gallery for Ireland is meeting with the warm co-operation of numbers who have liberally come forward with donations. At present, an exhibition of pictures, chiefly collected from Belgium, and including Slingeneyer's celebrated work, "*The Death of Nelson*," measuring 23 feet by 17 feet, is being held at the Royal Irish Institution, College-street. Many eminent foreign artists have contributed works, and it is to be hoped that the receipts will recompense the projectors.

A FEW NUTS FOR A POPULAR AUTHOR TO CRACK.

1. The anathemas of a single individual cannot balance the admiration of myriads, nor pollute that which has been consecrated by the genius of ages.

2. As "a tree is known by its fruits," so the character of a people is expressed by its visible actions. If Grecian architecture is only "*rotten rags*," what were the Greeks?

3. Invective is not argument. Many a good and noble object has been denunciated and treated with contumely.

4. Eloquence is not invariably the garment of truth. Many a base and utterly worthless object has found a right eloquent advocate.

5. Sound religious faith is no sure index of sound art-appreciation, for a man may have a very good creed and a very bad taste, while, on the other hand, he may possess a very correct taste and a very incorrect creed.

6. Religious zeal is not necessarily promotive of fine-art excellence, for though several really fine art-works have owed their production to zeal in religion, not a few have found in religious zealots their most bitter enemies and most ruthless destroyers.

7. Ornamentative detail, be it ever so beautiful, is not architecture, any more than a ray of light is the sun, or a leaf a landscape.

An Artist.

THE TENTH OF DECEMBER AT THE ROYAL ACADEMY.

The presentation of medals to the successful students in various branches of the Arts took place on Saturday evening last in the Lecture-room, and it being a gold medal year, there was a goodly muster. The president, Sir Charles Lock Eastlake, after a few words to the students, proceeded to say, that many of the works showed much talent. The gold medal for historical painting—the subject "Orestes pursued by the Furies," was awarded to Mr. Charles Rholt; that for historical sculpture, to Mr. Edgar George Papworth; that for architectural design—subject, "A Design for a Wellington College, combining a Military Academy with an Asylum for Veterans"—to Mr. Richard N. Shaw. The silver medals were awarded as follows:—For the best painting from life, to Mr. Joseph Powell; for the best painting from the living draped figure, to the same; and for the best drawing from life, to the same; for the second best drawing from life, to Mr. David N. Fisher; for the third best drawing, to Mr. Henry Garland; for the best model from life, to Mr. E. G. Papworth; for architecture—subject, "The Basement and First Columnar Order of the West Front of St. Paul's Cathedral, to the one candidate, Mr. Charles Arthur Legg; for the best drawing from the antique, to Mr. James Waight; for the second best, to Mr. John H. Banks; for the third best, to Mr. Henry Gale; for the best model from the antique, to Mr. John Adams; for the second best, to Mr. Edward Mitchell; for specimen of sciography, the science of shadows for architectural drawings, to Mr. John Chas. L. Sparks.

After a short address from the president on some of the principal features of the ancient masters in regard to the treatment of the extremities of figures, the meeting separated.

A MOVE IN DUDLEY.

Will you believe it? Dudley! black, sooty, pestiferous Dudley—Dudley, whose bills of mortality exceed those of every other pest-hole in the kingdom (not excepting its good neighbour Bilston, of "cholera" notoriety)—Dudley is at last rousing itself, and beginning to join the move "onward." Political feelings were never less bitter than now: a complete lull has taken the place of those angry dissensions formerly so rife: even the "labour" question has not raised its ugly head in these purlieus; and this has been the time chosen for endeavouring to improve the physical condition of our *iron bound* ones. It has been determined to erect some three or four model lodging-houses; and to do this, they have called in the aid of the "Metropolitan Association for improving the Dwellings of the Industrious Classes," under whose valuable supplemental charter, they have formed a branch association, in whose committee may be found the names of no less than six of the greatest iron and coal masters of the district. Surely this is the dawn of a brighter day!

It is intended to commence with one lodging-house for 65 of the industrious classes, giving them perfect privacy, and all the means of cleanliness possible, with some slight portion of food for their intellectual faculties. All this is to be done for a return of 2s. 6d. per week, and to produce at that rental, a per centage of "six pounds to the hundred."

The site has been partially fixed upon, but more the "little bird" would not tell us.

While they are adopting measures for the relief of operative masons and others, those masons who are called the *free*, in imitation of their glorious progenitors who have dotted the country with its noblest monumental and ecclesiastical remains, have formed a company for the erection of a hall, wherein to celebrate their rites, and have opened their arms widely to shelter and succour other wanderers, namely, the "Post-office," the "Mechanics' Institute," the "Government School of Design" (which, by the bye, really has something of a roof over its head—thanks to influence), the "Museum," the "Board of Guardians," and other public bodies. One out of its three lodges has subscribed 1,000*l.* and the others have put forth their hands also. Lord Ward also takes shares to a like amount, and other miscellaneous sources have borne assistance upon their tributary streams. Still much more is wanted, and it is to be earnestly hoped that all those who have the good of the town at heart, will lend their mites until the topstone is reared in joy.

Q.

INVENTIONS AT THE SOCIETY OF ARTS.

It becomes us to draw more than passing attention to the collection of articles of general utility invented, registered, or patented during the preceding twelve months, now exhibited in the rooms of this society. It will be remembered that by the provisions of the Patent Law Amendment Act copies of specifications under that Act are to be printed, and furnished to the public at cost price, and to scientific institutions, we believe, gratuitously. This is, of itself, of essential service to the would-be patentee,—or, as we should more properly say, *it will be*; for, though the Act became law some fifteen months since, there has been no issue yet in any shape. No arrangement either has been made for any exhibition of the articles themselves. Pending this, a more extended use should be made of the opportunity afforded by this society in their annual gatherings. Thus much cost, both mental and pecuniary, might be spared inventors in obtaining patents for schemes which had been before tried and found wanting. As an instance of this, we think we can give no better illustration than one furnished in the present collection: it is described in the catalogue as "Working of Railways," by G. Stewart, in which it is proposed to have a fixed rack-rail, a corresponding wheel on the engine working into it,—an application suggested while railways were yet in their infancy, by one Blenkinsop, of Newcastle; and as early abandoned from its excess of friction.

In the present exhibition, various means for the prevention of accidents on railways are set forth; amongst them, the "Spondyloid Life Train," by Garvey; the intention being to render the superficies of both ends of the carriages buffers, by the application of air-tight compartments with flexible sides.

There is a brickmaking machine by which, it is said, the clay is tempered and the brick moulded at one operation,—with a result of from 18,000 to 20,000 bricks per diem of ten hours, with a single horse power: it is the invention of Messrs. Sands and Cumming, of Massachusetts. There are, besides, various specimens of patent dove-tailed and hollow bricks, siliceous stone, tiles, and pottery, exhibited by Messrs. Austin, Ransome, and Elliott. Pottery pipes with metal bands, and roads formed of block granite in cast-iron frames; locks, on the permutation and other systems, in some of which it is needful to go through a long course of mental arithmetic before you can arrive at the contents of your strong box; various examples of the application of gas to domestic purposes, drawing-stoves, &c.; Boilesve's calorifere; portable furniture; a registered Devonport, by Allen; and a new application of glass in the shape of cistern-floats, patented by P. Palmer, superseding metal balls, as being more cleanly and economical.*

THE ALBERT-PARK MOVEMENT.

It would appear that the Government have at length manifested a disposition to give a due consideration to this long mooted project, and that there is reason to believe it will, upon certain conditions, be undertaken by the Woods and Forests. Lord Robert Grosvenor had an interview recently with Lords Aberdeen and Palmerston and the Chancellor of the Exchequer, and an official proposition has been submitted, we understand, which assumes a more definite shape than has hitherto been exhibited. The basis of it is, that, in the event of the Government proposing a grant for the formation of the park, the borough of Finsbury would be also required to contribute largely in furnishing the funds, though in a way which would scarcely be felt in comparison to the benefits to be derived. It is rumoured that the Government are not indisposed to grant 50,000*l.* towards the estimate of the cost of the park, viz. 250,000*l.* leaving the balance to be supplied by the borough in the shape of an improvement rate, extending over a lengthened period, which, as the money will not all be required instanter, will not be over-burthensome to the ratepayers.

The land to be purchased and taken, according to the Parliamentary notice, is in the parishes of St. Mary, Islington, Hornsey, and Stoke Newington, in all about 409 acres, comprised within a line commencing at the south-west corner of the bridge over the New River in the Green Lanes, near Northumberland House, and thence westward for a distance of 250 yards along the south bank of the river; and from thence south-west, by a footpath leading from the Green Lanes into Hornsey-wood-lane; thence westwards to the bridge over the Great Northern Railway in Hornsey-wood-lane; thence southwards from this bridge by the embankment of the railway, to a viaduct over the road called Stroud-green-lane; thence south-east by the Stroud-green-lane to the junction of the said road with the Seven Sisters'-road; thence eastwards for a distance of 25 yards along the Seven Sisters'-road; thence crossing that road southwards by Blackstock-lane and Highbury-vale; thence eastwards on the south, by property lately belonging to the late R. Percival, and by Newington-lane, or footway, in the parish of St. Mary, Islington; thence eastwards across the Green Lanes, and along the northern side of Paradise-row and Church-street, to the south-western angle of the churchyard of St. Mary, Newington; thence on the western or northern sides of the churchyard to Meadows-street; thence

* The Council have determined to hold, during the Christmas recess, an Exhibition of recent specimens of chromo-lithography and colour printing, when it is intended to show, for the first time in public, the specimens of "Naturselbstdruck," which have been received from Vienna. The Exhibition will be opened on Thursday, the 29th inst and will remain open about a fortnight.

along the street to its junction with Queen Elizabeth's-walk; thence northwards along such walk for the distance of 130 yards; thence crossing the said walk, and eastwards to Lordship-road, and along the said road northwards to the point where the New River is crossed by the Lordship-road; thence westward, bounded on the north by the New River for a distance of 400 yards; thence crossing the said river to the Green-Lanes-road; thence northward along the western side of the said road to, and terminating at, the said south-west corner of the said bridge over the New River in the Green Lanes, near Northumberland House.

The plans will be deposited for public inspection with the parish clerks of St. Mary, Islington, Hornsey, and Stoke Newington, on the 31st of December.

FALLING HOUSES.

A CORRESPONDENT wishes to direct attention to the way in which some houses are being erected in Paddington, especially on the estate known as Westbourne-grove North. He says,—"Last week a house, or rather carcase, in Talbot-road, being a centre one of a block of houses, fell, having been constructed of what is called bricks manufactured on the estate, of the earth procured out of the foundations, and laid in the sweepings of Macadamized roads: the whole block has been shored up as each story was carried up, as also an adjoining one." He complains, too, of "the scandalous state of the roads."——At Liverpool, on Monday in last week, a slight wall in South John-street, against which a considerable weight of corrugated iron used for emigrants' houses appears to have been absurdly supported, fell and killed three persons who happened to be passing.——At Glasgow, in St. George's-road, another wall fell on Saturday week while in course of erection to form the back wall of a building four stories in height: the fourth story was all but completed. The workmen had just left work, and were waiting to receive their wages at a safe distance and so escaped. The foundation is said to have been on a rock, but the wall itself seems to have been built of little better than sand, being composed, it appears, of soft surface sand-stone.——Some weeks since, at East Malling, Kent, great portion of a new church in course of erection there, we are told, fell to the ground. The exact cause our informant had not ascertained. The workmen were ready for the roof, or nearly so, and the centres of the arches had been struck.

THE DRAINAGE OF LONDON SOUTH OF THE THAMES.

INSTITUTION OF CIVIL ENGINEERS.

On the 6th inst. a paper was read "On the Drainage of the District South of the Thames," by Mr. J. T. Harrison. The district was described, as extending between Battersea and Greenwich, over an area of upwards of 9 miles in length, with widths varying from ½ mile to 2½ miles, bounded by the river Thames, on the north, east, and west sides, and by the rising ground on the south. Its chief peculiarities were, that the surface was almost entirely below the level of high water mark,—that it was, to a considerable extent formed of alluvial deposit, permeable to, and surcharged with water, and it was, moreover, subject to frequent flooding from the adjoining high land. The present system of drainage was shown to be very defective, but the author expressed his conviction of the possibility of remedying the existing defects, and of taking advantage of the assistance of the rise and fall of the tide, and of other local circumstances, for thoroughly effecting both the cleansing of the sewers and the drainage of the district, by means, inexpensive in themselves, and independent of the casualties of steam-pumping machinery, or of the caprice of ratepayers. The interception of the up-land water, by catch-water drains, was insisted on, and the necessity for it pointed out. The rain water was proposed to be conveyed away by the existing sewers, which would require some addition. The conveyance of the sewage matter from the houses of the district was discussed. This was divided into two stages—the first, from the houses to the public streets, and the second, from the streets to its destination. The means of obtaining the first point were simple, and the stoneware pipes were recommended, as sufficiently good, if of large diameter, and laid properly on a system of separate, rather than of combined drainage. For the second point, Greenwich Marshes being fixed upon, for the temporary reservoirs or recipients of the sewage matter, and the Thames as the ultimate distributor of it, it was proposed to take advantage of the fall of the Thames between Battersea and the Greenwich Marshes, which was stated to be 8 feet at the lowest neaps, 5 feet 6 inches as a mean, and 7 feet 6 inches at the highest spring tides, and by a copious use of Thames water to flush out the main sewer daily. This was to be accomplished, by forming a main sewer 8 feet in diameter, from Battersea to Greenwich Marsh, having the same fall as the Thames at low water neap tides; its invert being one foot below low water, and having a communication with the Thames at each end, so that water from the river might flow through at low water, forming, also, reservoirs for arresting and collecting the sewage, and a canal for receiving the liquid after the filtration or precipitation of the solid matter. This canal, excavated 6 feet below low water spring tides, extending across the marsh, and being connected with the Thames, at each end, with proper gates, &c. so that water, from the river, might flow through it, towards and at low water, leaving it full of pure water, when the gates were shut, on the rising of the tide. The overflow, from the reservoir into the canal, might be 2 feet above the highest low water mark, so as under the most unfavourable circumstances to give that depth for the filtered sewage water and that used for flushing, to accumulate during high water. The question of the applicability of the existing sewers was then examined, and from data afforded by Captain Vetch's sections, it was considered, that they might be made available. The large proportion of 41 miles of open ditches (in 1848) to 30 miles of closed sewers, was urged as a strong argument, for the introduction of an entirely new system.

Notices of Books.

Orr's Circle of the Sciences. W. S. Orr and Co. London. 1853-4.

THE idea of this intended series of little treatises is good, and the form attractive. A preliminary essay, on the nature, connections, and uses of the great departments of human knowledge, is well written. The object is, in twopenny treatises, to bring before the public, slight, yet able and accurate sketches of the whole circle of the sciences; in which object the publishers are to be aided by such writers as Professor Owen, Sir William Jardine, Professors Ansted and Tennant, and other men of note. The old treatises of Lord Brougham's "Society for the Diffusion of Useful Knowledge" were a sort of antetype of the present series, which, however, is of a still lighter, cheaper, and more popular description.

The Chemistry of Common Life. By James F. W. Johnston, M.A. No 1. The Air we breathe the Water we drink. Blackwood and Sons' Edinburgh and London. 1853.

IN a series of sixpenny treatises the chemistry of common life, a subject which teems with interest and utility to every human being, is here to be discussed by a man of science, versant with his subject, under attractive titles, such as, —The Bread we eat and the Beef we cook,—the Beverages we prepare and the Liquors we consume,—the Narcotics we indulge in (treated of, of late, in *Blackwood's Magazine*), the Odours we enjoy and the Smells we dislike,—and so on. In the number now issued there is both strictly accurate science and popular and simple treatment; and, moreover, there is the freshest information, and the fruits of some original reflection and research. The work is dedicated to Sir David Brewster, as a friend of the author.

The Human Hair; popularly and physiologically considered. By Alexander Rowland. With Illustrations. London: Piper, Brothers, and Co. 1853.

CONSIDERING the recent starting and successful progress of "the Moustache Movement," which it incidentally advocates, this is a well-timed and a really interesting and curious production. It is the fruit of more than fifty years' *devotion*, shall we call it, to the human hair,—a devotion well rewarded, we should think, in a pecuniary sense, as it now seems to have been in a sense of somewhat higher significance. "Rowland" is already a "household word"—unctuously and cosmetically speaking,—and he is now likely to be so more than ever. One of his chapters comprises "A Plea for the Beard and Moustache," illustrated by a series of portraits, in which the nobility and dignity of aspect displayed in the birsute adornments of the heads of Leonardo da Vinci, Godefroid Duc de Bouillon the Crusader, and the Lord Seymour of Sudeley in 1549, contrast strikingly with the scraped-pig-looking chins of more modern notables.

Considering the hand we had in starting "the Moustache Movement," we really deserved some little better treatment than we receive in this special chapter; in which, while every publication that *followed* in our footsteps is quoted and named, our own early remarks are appropriated, *verbatim et literatim*, without either quotation or acknowledgment. So it is, however, in many instances, with the *Builder*. As a pioneer to improvements and movements of various descriptions, it is often *so far a-head* of its compatriots that it gets *out of sight altogether*, or "looks small in the distance," as Coleridge says of men a-head of the multitude; while its followers march up *into sight* from behind in imposing numbers. The very name by which the present movement is known, viz. "the Moustache Movement," was stamped upon it in the outset, after due consideration, by ourselves, as one which, though not *fully* indicative of our aim and object, was much more likely to obtain for the movement a favourable consideration with the public, in the outset, than such a one as "the Beard Movement," which would have been more strictly correct.

There are fallacious arguments against wearing the beard and moustache which ought at once to be noticed and put down. Some point to the beautiful and rounded smoothness of the female chin as a sufficient contradiction to the assertion that nature intended the beard of the masculine gender as a protection against exposure. Now, on the contrary, we think the beard affords the strongest possible evidence that nature deliberately intended the *man* to submit to *all* the exposure incidental to human life, while the unprotected face and bosom of the woman speak in the plainest possible way, in the language of her Creator and of her husband's, —deal gently with her—shield and protect her: whilst you must brave the elements in her behalf, the penetralia of the temple of domestic felicity, —the "inner choir" of the "angels," as good old Jacob Behme, now rising into note in fashionable circles, would have said,—or, to come down to more matter-of-fact ideas of every-day life,—the sheltered roof of home made comfortable for her by you her sturdier and more protected companion, is her special dominion. This language of nature we would particularly desire to bring before the "strong-minded" and occasionally, too (as in this case is fitting), the strong-bearded, women of America or any where else.

Miscellanea.

TELEGRAPHIC PROGRESS, MAGNETIC AND ELECTRIC.—The extensive line of magnetic telegraph, designed to bring Cork and Queenstown into instantaneous communication with Dublin, Belfast, Liverpool, and London, has now approached completion, the only work of any consequence yet unfinished being a small portion of the line between Port Patrick and Dumfries, on the Scottish side. The line is quite complete from Cork to Dublin, and messages have been transmitted. Owing to the variation of time, messages from London will arrive at Cork a very considerable time (some twenty minutes, or half-an-hour, if we mistake not) *before* the time, or hour, of despatch from London. A message sent off at four o'clock in London, for instance, will arrive at Cork by half-past three, or twenty minutes to four, sufficient time for a few odd tricks on 'change or so. We hardly think the public are as yet quite awake to the immense power and undue advantage with which the telegraph must play into the hands of those who work it, or who have the priority of access to it.——The British Electric Telegraph Company, we understand, is to be merged into a new company, called the "British Telegraph Company," with a capital of 300,000*l.* in 20*l.* shares, on which the deposit is to be 5*l.* per share. The proprietors of the old continue their interest in the new company, to which the patent rights, wires, instruments, offices, and other property are made over, and which is incorporated by Royal charter, limiting the liability of the shareholders. It appears the lines owned by this company are already 600 miles and upwards in length, passing east and west from Liverpool to Goole, through every manufacturing town of importance in Lancashire and Yorkshire, and thence northwards through the coal districts to Newcastle and Carlisle, and by the western ports to Glasgow. The directors state that they will be enabled, with the experience now obtained in the erection of telegraphs, to construct a complete telegraphic system over the most remunerative portion of the country for 160,000*l.* They point attention to the fact, that the receipts of one company in this kingdom, for telegraphic business, exceeds 94,000*l.* per annum, although the telegraphic system of the country is as yet so undeveloped.

The Iron Trade.—The recent declaration of a rise in price of 20s. it appears has been made in direct "opposition to the views of some high in influence." The speculators flatter themselves that their renewed gambling scheme will not be interfered with "by any disturbance among the workmen, in the face of a falling market for all kinds of provisions." Nevertheless, and falling market notwithstanding, the workmen employed at the Ebow Vale Works of the British Iron Company have already struck for an advance of wages, and the result has been the furnaces are blown out. All sorts of reasons are being raked up in order to justify the move upwards, such as "wonderful prospect," "overwhelming demand," &c. and it is positively stated that there is a determination to announce a second rise of 20s. a ton at the next quarterly meetings. Meantime, it appears that already "many manufacturers of iron hollow-ware have made known to the merchants their embarrassment occasioned by the recent advance in the price of iron, and the great difficulty which they feel in fixing prices. This course," it is added, "has been rendered still more necessary in consequence of the opinion, now very generally entertained, that the ironmasters contemplate making a still further advance of 20s. per ton." As for the brilliant prospect, although the trade might confidently anticipate a well-sustained prosperity were it not for the gambling speculators who infest it,—let us note, in respect to exports, what a Liverpool authority, the *Standard*, says.—"Last week we showed that the price of pig-iron was much too high, from two different considerations,—first, that there were 25s per ton *against* shipments to the United States; and, secondly, 30s. per ton *against* French shipments, after allowing for the reduction of duty under the emperor's late decree! and, lastly, as a natural consequence, the exports from the Clyde had fallen off something like 8,000 tons per week. We have again to notice the like reduction, the exports for the past week having been only 9,100 tons, against the usual average of 16,000, showing a falling off of about 6,900 tons, which would have been even more but for the shipments to France, amounting to something near 2,000 tons, which, it must be borne in mind, were bought before the present high price, but kept back until the issue of the imperial decree; so that when the French purchases are cleared from the port, we shall probably have a falling off in the exports of from 8,000 to 10,000 tons per week, as *the present price puts a veto upon all exports, notwithstanding the late advance has taken place in consequence of large speculation, in anticipation of heavy exports to France!*"

The Architect of Heriot's Hospital, Edinburgh.—At the last meeting of the Scottish Architectural Institute, a letter was read from Mr. Alex. Black, presenting a literal copy of the contract entered into, in 1631, between the then Governors of George Heriot's Hospital and William Aytoune to act as master mason of the hospital. This contract, the donor thought, went far to show that at least many of the details of the building had been intrusted to Aytoune, the contract binding him to "devyse, plott, and sett downe quhat he sall thiuk meitest for the decorment of the said wark and pattern thereof, and alreddie begun, where any defect beis fund, and to mak with his awin hands the haill mewildis as weill of Tymber as of Stane, and prosequite and follow furth the modell fram and building of the said wark."

North Oxfordshire Archæological Society.—The first general meeting of this new society, for reading of papers, was held on Tuesday in last week, in the Mechanics' Institute, at Banbury, when there was a good attendance, including many ladies. Various articles of archæological interest were exhibited. The Mayor was voted to the chair, and the Rev. P. Hookins read a paper on the uses of archæology; the Rev. J. W. Hewett, of Bloxham, one on monumental slabs; Mr. T. Beesley, one on objects of study, and on the Roman coins found at Evenley. The *Banbury Guardian*, of 8th inst. gives reports of these papers, and of the remarks made on each.

Naval Architecture: the Greatest Ancient and Modern Ships.—At the recent meeting of Civil Engineers, in the paper read on ocean steamers, was the following statement:—

	Tonnage.	External Bulk.
	Tons.	Cubic Ft.
Ptolomæus Philopater's ship ...	6,445	830,700
Noah's Ark.....	11,905	1,580,000

A few modern ships were contrasted with these, viz.—

Great Western	1,242	161,100
Great Britain	3,445	443,570
Arctic (American packet)	2,745	356 333
Himalaya	3,528	457,332

and, calculated by the same rules, taking the dimensions given in the prospectus of the Eastern Steam Navigation Company, their

Proposed iron ship will be	22,942	2,973,593

Thus the new ship is just double the size of Noah's Ark.

Tiverton Town-hall: Accident.—For some time past the roof of this hall has been in a very dilapidated condition; so much so, that it was found necessary, among other expedients, to remove the heavy chandelier suspended from the ceiling. It was still apparent, however, that the roof was in an unsafe condition, and, in order further to protect it from falling, a piece of timber was erected in the centre of the court. Cracks were visible along the whole length of the ceiling; but nothing to excite particular alarm occurred till towards the close of Thursday in the week before last, when, from the crowded state of the County Court, the beam gave way and fell towards the judge. A general rush was made to the doors, it being feared that the whole of the upper part of the building was falling in. Many persons received severe bruises.

Drainage of Lambeth.—On 7th inst. a deputation from the ratepayers of Lambeth waited upon the Home Secretary to solicit his lordship to introduce, into the Bill which he has promised to bring before Parliament next session, the representative system, to enable the ratepayers to have power at the board of the Commissioners of Sewers, and a voice in the distribution of the rates. His lordship intimated his intention to introduce the representative system. Mr. W. Williams, M.P. proposed the carrying out of the metropolitan drainage scheme by a modification of the system which we pointed out some time since for the speedy realisation of many great works without waiting for money in hand to begin with. He suggested the issue of exchequer bills at 3 per cent. interest payable in fifty years by the ratepayers.

The Print-room, British Museum.—In a late number of the *Builder*, a correspondent, "D." is pleased to state that the numismatic and print collections in the British Museum can only be seen by the friends of the heads of these departments. Being a collector of prints and not of coins, I make no observation on the former, but may be permitted to inform "D." that perhaps the most valuable portion of the collection in the print-room consists of early engravings, some unique, and many, from age, of so fragile a nature that if exposed to the indiscriminate handling of the merely curious, they would certainly perish. If, however, "D." can procure from any person known at the print-room or as a collector a note that he may be so far safely trusted, he will find the head of that department most ready to assist his views. True it is that the public, in justice, should have the means of seeing these precious and instructive specimens, much, it may be hoped, to the benefit of their taste; but the Goverument, always parsimonious as regards art, refuses or delays to provide a gallery for their safe exhibition under glass, or even to sanction the purchase of inexpensive duplicates of the rarer specimens, sufficient for the use of the students.—A Friend of Art.

Manchester Free Library.—The report by Mr. Edwards, to which we have before referred, is a very interesting document. The issue of books during the first year has amounted to 138,312 volumes,—61,080 from the reference department, and 77,232 from the lending department. The greatest number of volumes was issued in October and November, and the least in May and June, when precisely the same number were issued in both of these months. On the average, every volume in the library was issued six times in the course of the year. Each volume on theology has had an average issue of somewhat more than four times; each on philosophy six times (the fair average of the whole, be it noted); in history nearly five times; in law, politics, and commerce, about one and a half times; in sciences and arts, nearly seven times; and in literature and polygraphy, more than nine times. The report is full of curious particulars.

The Decimal Coinage Question.—Dr. Bowring, since his return from India, has been urging on the public attention, at Liverpool especially, the advantages of a reform in £. s. d. The Liverpool youths, bored with all those "compound" operations which their friend Dr. Bowring assured them would be discarded under the decimal system, received the intelligence with enthusiasm, and will certainly not lose sight of it hereafter.

Iron Chapels, Stores, &c. for Australia.—The demand for iron buildings is constituting a new and extensive branch of manufacture in this country. Several cast-iron churches, already made for the colonies at Clift House, Bristol, are now to be followed by a dozen iron chapels, to be exported to Australia by the same maker, for Roman Catholics who have ordered them.

The Liverpool Timber Trade.—Messrs. Holme, Slater, and Crook, in their monthly circular, state that the arrivals into the docks of the Mersey, with timber, during the past month, were—88 vessels, 57,752 tons, against 44 vessels, 42,261 tons, for the same month in last year. Although the supply of Quebec pine has been large, the demand is equivalent; but stocks are below those of former years.

Reduction of Wages: Strike of Carpenters and Joiners.—Recently 450 carpenters and joiners left Messrs. Mare and Co.'s ship-building factory at Blackwall, in consequence of that firm proposing to reduce the rate of wages from 6s. 2d. to 5s. 8d. a day. Since the strike Messrs. Mare and Co. have offered to pay the 6s. 2d. if the men leave off at half-past five. They would thus be required to work one hour and a half more each day.

Drags.—Your correspondent, "Time-saver," has not made the tour of the northern part of England and of Scotland, or he would have seen that levers for the drags of omnibuses, &c. are placed exactly in the same excellent position which he so strongly approves of. We have had them here (Manchester) for some years, and in Scotland, perhaps, longer than we have had them.—H.

The Jessop Monument.—Mr. J. B. Robinson, a sculptor, requests us to say, touching our paragraph last week, that the accepted design for the proposed memorial was executed by him in accordance with instructions received from the committee, which he was not at liberty to deviate from. A design was made by an architect, but his was preferred. Our opinion of the design, of course, remains the same. The lithograph, he says, does not do it justice.

The Magee Presbyterian College, Derry.—A site for this college has been obtained facing the Foyle, and not far from the city, and estimates are to be forthwith called for by advertisement, the design having been already selected in accordance with the opinion of the architect of the Irish Society; and Mr. E. P. Gribben, the successful competitor, having, as we are informed, his plans and specifications prepared.

Hexham Abbey.—The slaughter-houses and pigsties built over the ruins of the chapter-house of Hexham Abbey Church are being cleared away, and the workmen have brought to light the remains of what appears to be a cloister at the end of the south transept. The work is being prosecuted at the expense of Mr. Beaumont, M.P. lord of the manor and lay rector.

Widening the Streets: Piazza Foot-pavements.—A correspondent, who modestly styles himself "A Humble Mechanic," suggests that the roadway of Newgate-street, or any other equally crowded thoroughfare, might be practically widened by shelling out the front part of the line of shops into a roadway about the breadth of the ordinary pavement, and throwing the latter into the carriage-track, while at same time providing a covered way for foot-passengers. What would the shopkeepers say?

Society of Antiquaries, Newcastle-upon-Tyne.—A meeting of this society was held on Wednesday in last week, Mr. John Fenwick in the chair, when various business was transacted, and a short paper, on Ancient Repairs to the Castle, read by Mr. W. H. Longstaffe, in which were some items as to wages in the time of Edward III. In 1357 a fall in wages had taken place, in respect to which it appears, that in November the carpenters and masons had fivepence a day, or half-a-crown a week; in the March following, fourpence a day, or 2s. 1d. a week. The labourers suffered a reduction from 1s. 9d. to 1s. 3d. The slater was paid by the rood—18s. per rood. The blacksmith was paid by weight, receiving sixpence per stone. The masons paid twopence a pair for gloves, and the candles consumed cost three halfpence per pound. Mr. Richardson stated that a volume of "Transactions" would be ready for publication on 1st January, embracing the Northumberland Muster Roll, and papers by Mr. Potter, Mr. Hodgson Hinde, Mr. William Dickson, &c. Dr. Bruce stated that an engagement had been entered into with Mr. Utting, engraver, for the execution of the woodcuts ordered at last meeting, to illustrate the catalogue. Mr. Clayton said, he believed the dean and chapter of Durham would copy the example of the Newcastle Society, and have their Roman inscriptions engraved.

Intemperance.—The amount of habitual intemperance to be met among workmen of all grades is perfectly fearful, and is an inseparable barrier against their improvement, moral and material. To some extent it may be attributed to the prevalence of the fallacious idea that drink, *i. e.* beer is necessary to them on account of the nutritive character of that beverage. Liebig has shown that this is very small indeed. Of its noxious properties we have full evidence: this has been demonstrated by actual experiment, and any one may test it: the greatest amount of continuous physical efforts and exertion can be gone through on water: this has been proved in the hayfield and in men under training. I believe that, physically and morally, a better and healthier race of men will never arise until all stimulating drinks (*i. e.* beer, wine, and spirits) have been wholly abandoned as *unnecessary and injurious*.

A District Surveyor.

The Builder.

SATURDAY, DECEMBER 24, 1853.

WE never seek occasion to find fault with the proceedings of authorized bodies, and are usually content to let the various institutions of the metropolis pursue their own objects their own way, satisfied that they are conducted by conscientious and able men, anxious to act rightly, and who are sometimes compelled to regard circumstances which are not known out of doors. Where, however, important interests are concerned, and truth would seem to be in peril, we should ill discharge our duty to the public if we did not put aside personal considerations, and point out what we consider the evil. Silence in such a case becomes complicity; and we must, therefore, at the risk of again incurring the rebuke of the council of the *Institution of Civil Engineers*, once more object to their practice of sending out an "authorized account" of the discussions which occur at the meetings of the Institution, and forbidding any person, on pain of excommunication literally, to make public any other particulars. It was a discussion on the drainage question that led us to object to this regulation before,* and it is a second discussion on the same subject which affords an instance of the evil attending it.

On the 13th instant, Mr. Harrison's paper on the Drainage of the District South of the Thames, noticed in our last (p. 763) was discussed, and the "authorized account" of the discussion,—after stating that the system of sewerage introduced at Hamburg by Mr. Lindley was alluded to, as a good instance of the efficiency of the plan of flushing sewers, even in very flat districts, and with syphon dips, when there existed a head of water like that from the Alster lake, which was 13 feet above the high-water mark of the Elbe, and that the system of flushing sewers was urged to be preferable to the labour and expense of pumping up from depths below low-water mark, the ordinary sewage contents, without dealing with the rain-water falling during thunderstorms, which, it was contended, could not be raised by any amount of steam-power which could be practically adopted,—proceeds thus:—

"The best systems [of drainage] proposed were stated to be, the interception of the high-land waters, the carrying away by gravitation all the contents of the sewers which could be discharged into a low point of the Thames by natural means, and resorting to pumping only for such portions of the metropolis as were too low for any other system. Such, it was contended, was the plan which had been proposed by Mr. J. R. M'Clean to the Commissioners of Sewers, in 1849; and in a review of the systems proposed by Captain Vetch, the late Mr. Foster, and Mr. Bazalgette, the accordance with and deviations from the original plan were pointed out and commented on.

The necessity for providing against any chance of flooding the basements of the houses, by allowing the main sewers to become filled and be under pressure, was insisted on. Doubts were expressed as to the possibility of obtaining sufficient velocity to scour out such main sewers as those proposed to be flushed from the Thames, and having their outlet at Greenwich.

The question of pipe drains and brick sewers was again entered upon, and it appeared, that experience *confirmed* the previous impressions of the applicability of the pipes to house drainage *only*, when they had rapid fall and were of sufficient area, but that *nothing could be relied upon for street sewers, except brick constructions, sufficiently large to permit access within them:* they should also be permeable, so as to act as drains in conveying away the land water from the district which they traversed. It was stated, that in Lambeth there were spots which about twenty-five years since were full of water, but which at present, during the summer, were found to have been thoroughly dried by the action of the sewers passing through or near them.

It was urged, that the question of the proper outlet for the sewerage could only be fixed by careful investigation of the period during which the matter remained suspended, and the distances it travelled up and down the river with the ebbing and flowing tides. The experiments already made on this point did not appear to be received as authority.

In treating the questions of detail, it was *shown* that the *brick sewers never, practically, became elongated cesspools*, as had been asserted; that there was really greater scouring power in an egg-shaped sewer, than in a pipe drain; that the alleged smooth interior of the pipes was illusory, as their joints were more liable to occasion stoppages, than the joints of the brick-work; that the interior of the latter did, practically, soon become covered with a slimy matter, which aided the flow; and that deposits rarely occurred, except where the sewers were too flat and too small.

As to the qustion of cost, it was shown, that the statements of the comparative expense of the metropolitan and of the country drainage works, as published "by authority," must be received with caution: the cases were not analagous, from the impossibility of comparing the ducts made to convey sewage one quarter of a mile, with those intended to convey the cumulative proceeds of many miles of dwellings. The mere difference of the cost of labour, between London and the country, would preclude comparison as to the expense of works; and the local difficulties of cutting under ground in large cities, must be taken into consideration."

Now, we would ask, are the public to understand that the Institution of Civil Engineers asserted at that meeting, without a dissentient voice, that experience has proved that pipes are applicable only to house drainage, and to these only provided they have "a rapid fall, and are of sufficient area;" that nothing can be relied on for street sewers except brick constructions, large enough for men to go up them; and further, that brick sewers never practically become elongated cesspools,—in fact, that deposits rarely occur in them? If there were dissentients, who were they? Even if a minority, their opinion might outweigh that of the majority.

As respects the propositions themselves, we are forced, without being partizans, to deny that experience has yet proved the truth of one of them: indeed, we ought to go farther, and say, that present experience disproves the whole. Rugby, Tottenham, Barnard Castle, St. Thomas's Exeter, Ottery St. Mary, and several other towns, to say nothing of two or three estates in the metropolis under our own eye, wherein pipe sewers are working efficiently, will serve for evidence so far as the first two are concerned; and he would surely be a bold man who would attempt to maintain the third, in the face of the numberless published diagrams showing the condition of the old brick sewers in London. If in the towns we have named, and in the great majority of cases in the metropolis, where, according to the Board of Health's reports, 250 miles of pipe sewers have been laid, these pipe sewers act perfectly well, it must be evident that the defects which have been discovered in special cases are not essential parts of the system; and bearing in mind the advantages of the system in other respects, it should be the duty of science to devise means for the prevention of what would seem to be simply abuses.

The report made by Dr. Arnott and Mr. Page on the causes of the late epidemic at Croydon, has of course been referred to with an air of triumph by the opponents of pipe sewers. Carefully examined, however, it will not be found to be worth much to them. As Mr. Austin remarks, in reply to Mr. Page's allegations:—"If the pipes are really found to be successful, an economical, self-acting, graduated system of drainage, of sizes proportionate to the flow of liquid refuse to be carried off, will be available for every district and class of town throughout the kingdom; but if the old plan must be perpetuated, the cost of construction must, as has been already stated, tend to confine any complete system of drainage to the more important towns and districts, and to involve even these in a very oppressive outlay. On the one hand, there is evidence of many failures of pipe drains; but it must be repeated, that in every case in which full inquiry has been fairly instituted into the causes of these failures, they are found, as in the Croydon case, to have been of a preventible nature. With regard, however, to many of these failures, no evidence whatever is adduced as to the completeness of the work, the sufficiency of water supply, or other circumstances which may have led to the result; yet we are asked to condemn and abandon a most valuable improvement, from the simple fact, that in certain cases it has failed, under whatsoever conditions. On the other hand, there is triumphant proof of the most complete success of pipe drainage completely and systematically carried out in several towns, a success equal to the most sanguine expectations that can possibly have been formed."

There were errors in the works at Croydon: some of the pipes were bad, and they were in parts improperly laid, but failures through these causes are not necessarily to be attributed to the system. The evidence the reporters took was insufficient as a basis of judgment. Their examination *in court* was only of forty-one persons, of whom five were residents at Beddington, and four others were the president of local Board, the engineer of the works, and two contractors for laying drains, leaving only thirty-two impartial Croydon residents. Their house-to-house inquiry, though returned as at ninety-two, was only at seventy-three houses, of which only sixty (stated erroneously as eighty-two), were connected with tubular drains. Thus altogether only 114 cases were investigated out of 2,000 (the number of houses drained on the new principle). In a very minute examination of the facts set forth in the report, with which we have been favoured by Mr. F. O. Ward, the writer shows that the house-to-house inquiry only brought to notice twenty-one deaths (not twenty-three as stated in the abstract, p. 65): of these twenty-one, twelve, on a close scrutiny, turn out to be due to causes utterly unconnected with the epidemic. Thus one was caused by bronchitis; one by water on the brain; one (a child) by teething; three (children) by ordinary scarlet fever; one by typhus a year ago (being before the outbreak of the epidemic); one by an illness which began one or two years ago; one by an illness which began before removing from Hampshire to Croydon; one (an old lady), by decay following very bad health previous to coming to Croydon; one (an old man) by an old complaint unconnected with fever, the termination of which had been long expected.

These twelve irrelevant deaths being struck off leave only nine deaths by epidemic, which being traced, are found to have occurred in nine houses, of which seven are reported by the owners to have been drained perfectly well, without a single stoppage, or stench, or inconvenience of any kind, by tubular drains; while, of the other two, one had a cesspool and common open privy behind the house, and the other is the subject of evidence which is at variance with the reporter's entry, the witness (Mr. Gray) saying, "No account of smells at Mr. Aris's, where my nephew died—no inconvenience from the drains. I do not believe his fever was superinduced by the drains at all."

Pushing this sort of scrutiny further, it ap-

* See vol. x. pp. 767 and 793.

pears with respect to the seventy-three houses visited in the house-to-house inquiry of the reporters at Croydon, as follows:—

1. Of the houses in which *sickness had occurred*, 87½ per cent. were *not* connected with the new tubular drainage.

2. Of the houses in which no sickness had occurred, 86 per cent. *were* connected with the new tubular drainage.

3. Of the twenty cases of stoppage of drains met with in the house-to-house inquiry,—Three (or over 14 per cent.) were in *old barrel drains*, having nothing to do with the tubular system, against which they are made to tell by insertion in the report. Of the remaining seventeen houses, six (or more than 35 per cent.) must be struck off as cases of stoppage due (*by the witness's own confession*) to "stones," or "bad matter, improperly thrown into the pipes," or "negligence of persons using the water-closet." Two more (nearly 12 per cent.) return "stopped only at first starting, not since," showing these to have been due to early mismanagement, corrected by a few weeks' experience. Two more (nearly 12 per cent.) had had *no stoppages* up to the period of the great rains, which, coming unexpectedly before the completion of the system, water-logged the outfalls—an accident certain never to recur when the subsoil drainage is complete, and wholly beside the question of the tubular *principle*. Of the five remaining,—Four return, "Remedied directly;" "Very slight;" "None of consequence;" "Ceased very shortly after spontaneously;" while *one only* of the whole number attributes the evil to "the usual sewage stopping the pipes."

These results obviously go to disconnect the Croydon epidemic from the tubular drain as cause and effect; and when it is considered that, owing to local errors of the drain contractors, a number of 4-inch drains were fitted with soil-pans, having 4-inch inlets (instead of 2½ inch), thus affording ingress to substances *as large as the drains*—substances which it is a first principle of tubular drainage to *exclude* by reducing the size of the inlets *below* the diameter of the drains,—it will be seen that the general success of the Croydon drainage is an *à fortiori* proof of the soundness of the tubular principle, the wonder being that so very few accidents occurred with inlets made so much too large for the pipes to which they led.

This result is disguised in the report, and made to look like disastrous failure, by the evidence of each witness being broken up into seven parts, and scattered through seven lists, reference to which, for purposes of collation, is rendered almost hopeless by the transposition and frequent mis-spelling of the names (among which are found two Pages, two Wellers, a Combs and a Coombes, a Crickett and a Crockett, &c. &c.; in all, fourteen ambiguities of spelling, and above 200 transpositions in about 70 names), several *double entries* (No. 28, of list 1, entered at 37 and 52 of list 6. No. 26 and 27 of list 1 entered at 26 and 27, and at 44 and 45 of list 7). The result being that the fever list is swollen (for cursory readers) with the cases of "bronchitis," "water on the brain," "teething," "extreme old age," &c. &c.; while stoppages of *old* drains *cured* by the new plans, are made to figure as stoppages of tubular drains, and so forth. On the whole it appears,—

That the tubular drains there have worked well with some exceptions due to local and remediable causes (chiefly the neglect of the local builders, who broke the rules laid down).

That the bulk of the people of Croydon are satisfied with the tubular principle, though some have been annoyed by the remediable errors and mistakes.

That among the local and remediable mistakes were, the laying down of some pipe sewers a little too small, relatively to the house drains they had to receive, and somewhat too thin relatively to the weight of earth they had to bear; so that, in a certain number of instances, they were stopped or broken.

Efficient drainage is one of the greatest requirements of the day: on this hinges all real sanitary reform. Its cost is the great impediment; and whatever tends to lessen or increase this is therefore of the utmost consequence. We agree with Mr. Austin, "that the public requirements will demand for so important a branch of town improvements, upon which the health and comfort of the whole population so largely depend, that same consideration and that same adaptation of means to the end which have prevailed in other questions of engineering, and have alone led to the great works which are the honour of the country; in which the results of experience have been fairly weighed, and have been used to promote and amend, instead of to oppose and destroy, the attempts at improvement." Such general statements as those from the Institution of Civil Engineers, to which we are objecting, will not tend to the satisfactory solution of the question.

We do not meddle with politics, but we cannot close these observations without an expression of the deep regret with which we view the retirement of Lord Palmerston from the Home Office. His lordship, as we happen to know, was mastering all the details of the sanitary question, and would probably have effected an immense amount of good in that direction, if he had remained in power. We earnestly commend it to his successor as one of the greatest that can possibly occupy his attention.

WINDOWS FROM SYRACUSE, SICILY.

The modern town of Syracuse, which occupies but a very small portion of the site of the city of Dionysius, contains some very beautiful specimens of the works of our Norman forefathers.

One rich palace, called the Palazzo Buonadonna, might pass muster very easily for an English work of the thirteenth century. Three other Gothic palaces present some very novel and effective details. From these are taken the specimens engraved. The arrangement of the sill of one window and the arch of the other are worthy of remark.

Alfred Bailey.

ON THE APPLICATION OF PAINTED GLASS TO BUILDINGS IN VARIOUS STYLES.*

I am quite aware that the employment of rich and deep colouring in windows has a tendency to diminish the apparent size of a building, and I am ready to admit that it is to a fear of producing this result that we may attribute the modern practice of decorating the windows of a Greek building with glass too faint in its hues to rescue it from the imputation of washiness. But it is by no means necessary to go into the opposite extreme. A glass painting entirely composed of white glass would harmonize with the character of Greek architecture equally as one principally composed of coloured glass; provided that the white glass was, like that of the twelfth and thirteenth centuries, solid in appearance, and had a rich cool tone. And even when the employment of a larger proportion of coloured glass might be desirable, it would always be possible to make the window recede from the eye, by using in it a predominating quantity of blue and white. But whether the advocates for powerfully-coloured or for white windows, as being most in keeping with the character of a Greek building, are right, I trust that all will agree in preferring rich tints to poor ones. Had the ancient Greeks glazed their windows, we may be certain that they would have used glass of rich tint, whether it was white or whether it was coloured; for amongst all the ancient Greek glass vessels that I have examined, I have never met with any of a poor tint or flimsy appearance either in point of colour or texture of the glass. And, indeed, so closely does the glass composing these remains resemble in its appearance and chemical analysis the window-glass of the twelfth century (from which that of the thirteenth differs but little), that were I desirous of forming an idea of what Greek window-glass would have been like, I should endeavour to call to recollection the tints of Suger's glass at St. Denys, or that of the glass in the W. triplet of Chartres. And besides, the remains of strong colour used in the decoration of ancient Greek buildings, leads to the inference that the ancients, had they used window-glass at all, would have employed that possessing a rich tint, from choice as well as necessity. We are still less without authority to guide us in regard to the design for windows proper for ecclesiastical buildings in the Greek or Roman style of architecture. The views I have expressed with reference to the colouring of these windows, must confine me to an advocacy of a simple flat system of representation, because pictures composed on the principle of representing depth, cannot properly be executed in glass entirely consisting of strong rich tints. The only attempt I have hitherto seen at designing windows for a Greek building, is at the Church of St. Vincent de Paul at Paris. But however worthy of notice these windows may be as an embodiment of a new idea, they are neither sufficiently delicate in design, nor simple in execution, to serve as models for our imitation. It is very possible that this defectiveness may be in a great measure attributable to the thinness and watery character of the glass of which they are composed, and to the efforts of the artist to disguise the badness of the material by a more elaborate execution; but such expedients are no longer necessary, since, as I have before stated,* the manufacture of twelfth century glass has been revived; and which I have always considered the more fortunate, on account of the use that might be made of it in the embellishment of classical architecture, consistently with which, unlike the Gothic, art may be fully developed. There can be no doubt that valuable hints might be derived from an examination of the designs of ancient sculpture, and even of tessellated pavements. Indeed classical designs, admirably adapted for glass paintings, are engraved from sculpture in Pistolesi's "Vatican:" the most remarkable one is given in the 2nd vol. plate 3.† These designs consist of figures and ornaments in one plane, and therefore if executed in glass, as I have recommended, would a good deal resemble the works of the twelfth and thirteenth centuries. These mediæval works must appear to the most careless observer to be defective in many respects, particularly in relief. When viewed closely, the intention of the artist to bring out the various projections of the figure and drapery, by means of strong black lines, is often admirable, especially as seen in the heads of the figures; but, sometimes from want of boldness, sometimes from a want of knowledge where to place the shadow, Early English figures in glass, when viewed from a little distance, are too apt to appear like flat surfaces; quite as flat, if not more so, as the men and horses appear to be in those copies of the inner frieze of the Parthenon, which, placed in situations distant from the eye, and exposed to the influence of full light, are used to decorate the outsides of some of our public buildings. I am far from agreeing with those who contend that no greater relief ought to be imparted to a simple flat glass painting, than is given to those flat rilievi from the cella of the Parthenon; for those who urge such views seem to have entirely overlooked the original situation of these rilievi, placed where no direct light could reach them. To use the words of one of our most accomplished artists,—"It is a great mistake to suppose that the flat style of relief was intended to appear flat; and it is a great mistake to apply it in situations, as in the open air, where it must appear so, and be indistinct besides."‡ In accordance with this

* See p. 738, *ante*.

* See paper "On a revived Manufacture of Coloured Glass used in Ancient Windows," read at the Institute, and printed in our 10th volume, p. 402.

† "Il Vaticano descritto ed illustrato da Erasmo Pistolesi."—Roma, 1829; see also vol. 5, plate 81, and vol. 2, plate 4.

‡ "Contributions to the Literature of the Fine Arts," by Sir Charles Eastlake, Pres. R.A. p. 104.



WINDOWS FROM SYRACUSE.

authority, I will venture to say, that quite as much relief ought to be given to the figures in the simplest and flattest glass painting, as is given to the alti rilievi in the metopes of the Parthenon, which were intended to be seen in the open air, and from a distance. I throw out these observations, however, rather with reference to those who may be about to design simple flat glass paintings for mediæval buildings; for since I am perfectly sure that none but first-rate artists can design windows fit for classical buildings, I may well be content to leave the matter entirely in their hands; and can only express my surprise that a field so favourable to a display of the highest art, should have been so long neglected. Flaxman's labours sufficiently show the possibility of employing the exquisite language of the ancients to express true christian sentiment; and some of his choicest designs might advantageously be reproduced in painted windows for classical buildings, were it only by way of proving to the public what works of art painted windows might become in competent hands.

I shall trouble you with but few remarks on the selection of glass paintings for buildings in the Palladian style of architecture, in which I would include all Wren's churches, and even St. Paul's itself; for though that building has in parts a Roman severity, its interior in particular bears many marks of the taste of the seventeenth century, especially in the ornamental details. Such buildings, taken on the whole, are less severe in character than true Roman or Grecian buildings, and therefore would seem to require a corresponding relaxation in the character of their painted windows. In my opinion no greater mistake is committed than when a stiff Byzantine style of decoration is applied to the windows of a Palladian building. I have heard it defended on the ground, that since such glass would harmonize with the character of a Roman building, it ought equally to harmonize with the character of a Palladian one, because both styles of architecture have a common origin in the old Roman,—an argument which is at once disposed of by the remark, that the Romanesque style betrays its more immediate origin, in the Greek character of its ornaments and some of its mouldings, from which character the Palladian is free. I have also heard it defended on the supposed necessity of imparting a more religious air to a Palladian church. But surely there must be other and more legitimate ways of increasing the solemnity of a building than by the introduction of incongruous ornaments and decorations, which oppress the architecture by their severity. Who would think of encrusting the walls of St. Paul's Cathedral with stiff Byzantine mosaics? I believe that it is amongst the works of the cinque-cento periods that the true models for painted windows suitable for Palladian churches are to be sought. Amongst these works, as has been remarked, many varieties of design and character may be seen. Some are more solemn and grave than others; but the blended and comparatively undecided colouring of even the most simple, renders them less solemn and severe than the ordinary works of the twelfth and thirteenth centuries. In most matters of detail, also, cinque-cento glass paintings accord with Palladian architecture; so that, on the whole, the cinque-cento style of glass painting, as developed in its best specimens, seems more suited than any other known style for the windows of Palladian buildings.

In adopting this style, the glass-painter, as before stated, is by no means confined to the use of pictures having receding backgrounds, but may use as flat a composition as a line of well-relieved figures placed in front of a sheet of tapestry; or even, in small works, or in the accessory parts of greater works, would find authority for the employment of well-relieved figures on perfectly flat coloured grounds. The use of receding pictures in painted glass in any building, of any style, has, however, been strenuously objected to; and the present seems a good opportunity of inquiring a little into the validity of the objection.

It proceeds, as far as I can understand, on two grounds;—the first being the supposed unfitness of the material for any sort of representation more pictorial than the mosaics of the twelfth and thirteenth centuries; the second, the supposed impropriety of representing a receding picture on the wall of any building. In support of the first ground of objection, we are told that a glass painting reverses the conditions of nature, by making the lights transparent and the shadows opaque; that the violence of its colouring is wholly opposed to pictorial effect, and that to bound objects with black lines is reprehensible on every artistic consideration. The first of these arguments is at once disposed of by the observation, that we have nothing to do with anything but the *effect* of a glass painting; and that when the material is, like that of the cinque-cento period, of a horn-like texture, the high lights do *not* appear to be less solid than the shadows.

With regard to the two other objections, I admit that they should be unanswerable, if it was true that an artist was precluded from painting a picture under any other than the most favourable conditions. But to assert this would be to fly in the face of all authority,—and, what is worse, to contradict all experience. * * * The remaining objection, that it is wrong to represent a receding picture on the wall of a building, and consequently in a window, the glazed surface of which is but a continuance of that wall, seems to rest less on a consideration of facts, or the dictates of our external senses, than on a sort of mock philosophy, which seeks to escape laborious investigation by the enunciation of a "principle"—than which, by the way, nothing is more easy. It may be conceded that to carry a receding picture all round a room produces an ill effect. But pictures, though representing the effect of depth and distance even almost to illusion, are admitted to be allowable, provided they occupy only a portion of the wall, either by being hung against it in a frame, or by being actually painted upon it: the latter sort, indeed, can plead the testimony of ages in its favour. If, then, a glass painting should

have the illusion of distance, it would be unobjectionable, — because, necessarily, it could occupy only part of the side of the room or building containing it. * * *

I have already stated my belief that the glass paintings of the twelfth and thirteenth centuries are most in harmony with the architecture of these respective periods, and, therefore, think that such of those works as most consistently carry out the simple flat style of representation ought to be regarded, with but few exceptions, not, indeed, as objects to be reproduced in copies, but as guides to assist the artist in forming new and original designs. The principle of an ancient composition might be more strictly adhered to now than at any former period, on account of the revived manufacture of the window glass of the twelfth century; but this recommendation would by no means involve the necessity of copying the object itself. Indeed, nothing is more thoroughly opposed to sound sense and good taste than a mere servile copy of an ancient glass painting, or a copy with such trifling modifications as to be little else than a servile copy. If intended as a counterfeit, it must fail in its object; for none but the inexperienced are likely to be deceived by it, and once known to be a counterfeit, it would lose all interest from association with by-gone ages. If intended to pass for nothing more than a copy, under the *bonâ fide* impression, that nothing, except a copy of ancient painted glass, will harmonize with Gothic architecture, it serves but as a cover for indolence—it can advance nothing, because a copy is sure to fall short of the original in all real merit,—and, besides this, its production amounts to an unconscious satire on Gothic architecture, when we consider the imperfect state of the art of representation as displayed in ancient windows. The only true course is to treat every modern work in painted glass as an original work of the nineteenth century, and as such, to test it according to intelligible rules of taste. The inquiry ought no longer to be confined to the narrow issue of conformity with some ancient authority, but should extend to a consideration of its intrinsic merit as a work of art, and its extrinsic merit as being in harmony with the architecture with which it is associated. To prescribe so wide a field of inquiry might, indeed, prove inconvenient to certain critics, but would certainly tend to a more zealous investigation of the principles of ancient art than heretofore, and to the production of works more worthy of the nineteenth century: in short, it is by this means only that any progress can be made. A nineteenth century window, designed for a twelfth or thirteenth century building, ought not only to harmonize with the architecture in the quality and treatment of its colouring, but, besides restraining conventionality within due bounds, should likewise be free not merely from the bad drawing, but from the quaint and contorted attitudes of the figures of the twelfth and thirteenth centuries; attitudes which, however fashionable they might have been at that period, are shocking to our present tastes and feelings. It should, in fact, reproduce nothing but the art of that period, the genuineness of which will only appear the plainer, when the film of bad taste and deformity is stripped from it, through which we are now obliged to penetrate before we can fairly see it. I should add, that in designing a window for a twelfth-century building, the artist can never do wrong in going at once to the fountain head, and correcting his taste by the remains of classical art, whose influence is so easily recognised in the glass paintings of the twelfth and thirteenth centuries.

A consideration of the colouring best suited for the windows of a fourteenth-century building presents an interesting subject of inquiry, but into which I cannot, for want of time, particularly enter. The glazing of the fourteenth century, until about the year 1380, in respect of the quality and disposition of its colouring, holds in general a sort of middle place between the rich mosaics of the thirteenth century and the paler picture glass paintings of the fifteenth century; its individual colours being as cool, and almost, if not quite, as powerful as those of the thirteenth century—but being intermixed with a much larger proportion of white glass, and used in broader masses. But this difference in the character of the colouring seems attributable rather to the nature of the designs which became fashionable in the fourteenth century, than to any definite abstract principle. But however this may be, there is one lesson to be learnt from the works of the fourteenth century, if not from those of the latter part of the thirteenth, which is—that the glazing which chiefly consists of white glass is more favourable to the effect of window tracery, than that which consists of a mass of intensely rich colours. For the latter tends to confuse the tracery, unless indeed the direction of the principal lines of the glass composition are strongly opposed to the lines of the stonework, in which case there is a sufficient contrast between the stone tracery and the deep coloured glass to render the former perfectly distinct. Thus the mullions and tracery come out strongly in some of the clerestory windows at Bourges, and in the windows of York Chapter-house, where the glazing is principally white, but are not so easily made out in the windows of the Sainte Chapelle at Paris, which are filled with richly-coloured glass. On the other hand, the mullions of the southern rose at Chartres, which is likewise filled with richly-coloured mosaics, show themselves distinctly. Here the principal lines of the stonework diverge, like rays, from the centre of the window, whilst the principal lines of the glass composition form concentric circles. The star-like effect of this, and many other rose windows of the thirteenth century (the north rose of Notre Dame, at Paris, is another example), thus being produced by the opposition of two distinct designs,—one of which, the stone design, appears as if it was laid upon the other. If this consideration should lead to the conclusion that glazing, principally consisting of white glass, is best suited for the windows of buildings in the Decorated style of architecture, there can be little doubt, I apprehend, that the best designs would be those consisting of pattern-work painted on white glass, of which there are numerous and beautiful examples in the cathedrals of York and Exeter, Merton Chapel, Oxford, and other places, with or without the enrichment of inserted panels, containing groups, or single figures, on stiff coloured grounds, executed in the simple flat style before mentioned. I would on no account advocate the use of figures and canopies, because the stiff character of the colouring, which does not materially differ from that of the thirteenth century, is unfavourable to such a display of light and shade as is necessary to make the canopies seem as if they projected forward. I have heard the flatness of decorated figures and canopies defended on the score of their resemblance to some of the published outlines of the German engraver, Retsch; but these outlines are only intended for near inspection, by which alone the varying thickness of the outline, which produces the effect of light and shade, can be appreciated. At a distance, these designs would, of course, be invisible; or if enlarged in painted glass, as I have also heard recommended, would appear flat and thin; just as a copy of a fourteenth century monumental brass would look if executed in painted glass.

The change in the nature of the material, in 1380 or thereabouts, and the substitution of glass, such as we see used in the works of the fifteenth and sixteenth centuries, for the deep intense tints previously employed, is, like many other points connected with the history of an art, one on which no light has hitherto been thrown. It is but a conjecture that the change was brought about by the glass-makers in Germany. But I think we may conclude, from the fact that glass painting was becoming more pictorial just before the change in the material, and that it became still more pictorial after it, that the lowering of the different tints in depth was intended to second the efforts of the artist to produce glass pictures in preference to glass mosaics. One is tempted to infer the existence of some harmony between the character of the architecture and the delicate tints and silvery tone of the glass of the fifteenth century, from their having been so long associated together. And, in one respect, the glass is no doubt well suited to the architecture. For even the most elaborately painted window is, owing to the lightness of its hues, never confused with the stonework. And experience has abundantly shown that the effective pictures of the sixteenth century harmonize as well with the architecture of the fifteenth as the imperfect productions of that period. There is no apparent difference between the architecture of the windows of Fairford Church, Gloucestershire, and that of the windows of churches quite half a century earlier: and yet the sixteenth-century glass, with which these windows are filled, is in perfect harmony with the character of the building. I therefore think that windows for fifteenth-century buildings should be designed on the model of the glass paintings of the sixteenth century; in which case the artist might consistently employ canopies, if he thought proper. The most splendid Gothic canopies in glass that I have ever seen are in two of the windows of Munich Cathedral; one is dated 1503. These canopies are so painted as to appear like what they profess to be,—hollow niches. As a general rule it appears more satisfactory that one scale of figures should be preserved throughout a window, than that the size of the figures should be regulated by the sizes of the lights they occupy, as in most Gothic examples. In the cinque-cento period the uniformity of scale was preserved, not unfrequently, by the employment of angel boys, instead of full-grown figures, to fill the smaller tracery lights. At Fairford, and other places, the expedient adopted is the use of demi-figures in the tracery lights.

In the fifteenth as well as in the sixteenth century, it was a not uncommon practice to extend the design of a glass painting beyond the limits of a single light. In some instances the entire window is filled with a single picture, which is spread over the whole opening, independently of the mullions. So great an outcry has, however, been raised against this practice, that it seems worth while to say a few words in justification of it. In the first place there is not, I conceive, a greater violation of principle committed, in laying as it were the design of Perpendicular tracery work over the design of a fifteenth-century picture in glass, than is committed in laying the design of a thirteenth-century rose window over the design of its glazing. The stonework of the window sustains no injury of effect: on the contrary, it is rendered more distinct by the opposition of its design to that of the glass. Neither is the glass painting injured by being cut by the stonework, for the force of imagination is such, that the design may be preserved in all its unity, through any number of lights; an observation which, I think, will be admitted to be true by those who have been in the habit of looking at such works with an unbiassed eye. But the practice may be defended on another, and perhaps less questionable, ground—on the score of necessity. Our ancestors were in the habit of representing in their windows vast numbers of legendary saints; but modern practice is in general so opposed to this, as in effect to limit the choice of the artist to representations of our Saviour, the four Evangelists, the twelve Apostles, occasionally the Virgin Mary, and some of the Prophets and Patriarchs. I believe that I am speaking within compass when I say that his choice does not extend beyond three dozen single figures. Consequently, monotony is inevitable, unless recourse is had to groups of figures. Here, indeed, the means of selection are almost unlimited. Flaxman declares (Works, p. 337), that it may be affirmed "without danger of exaggeration, that many hundred subjects are to be found in the sacred writings which, being ably designed, would be *new* to the beholder." But in order to ensure a sufficient scale for the figures, the group must not unfrequently be extended beyond the limits of a single light. Upon the ground of necessity, therefore, we may well justify the carrying a glass picture across a window, to a certain extent irrespective of the mullions. And I should perhaps add, that when we consider that painted windows by their size might not unfrequently offer a field for the talents of the historic painter, it seems unadvisable to scare artists from it, by imposing conditions which were often broken through by the mediæval painters themselves.

In conclusion, I will repeat what I stated at

the outset, that I claim no infallibility for any of the views I have advanced. I am conscious of having approached delicate ground more than once; especially in the course of my remarks on the sort of glass paintings best suited for buildings in the Classical styles. On this point I consider that I have but raised questions which wiser heads than mine must solve. My object will have been accomplished if I have added but one grain of information to the common stock: or if I have succeeded in proving that there is no mystery in glass painting; that it is a branch of the Fine Arts, distinguished from others only by certain conditions, and that the same sober rules of criticism equally apply to the productions of the glass painter. To take a familiar instance—we sometimes hear it disputed whether the flesh ought to be coloured or left white, in a glass painting; the opponents of tinted flesh urging the impossibility of imitating nature exactly in this respect. The answer is obvious enough. The whole colouring of a glass painting is highly conventional, whether it be of the draperies, of the flesh, of the sky, or of any other object; still so long as it does not exceed the limits of conventionality—a point to be ascertained only by observation and general opinion—the eye and imagination are satisfied. We should be startled and disgusted at seeing flesh painted green or blue, but the complacency with which pink or white flesh in a glass painting is regarded by the generality of mankind, is a sufficient proof that neither of those tints contradicts nature too violently; and therefore, that the artist does not exceed the limits of conventionality in using either white or tinted flesh, at his discretion. The wide range of this paper, and the necessity of confining its length within reasonable limits, have of course compelled me to touch on several topics in a very cursory manner; and especially that relating to the actual mode of executing a glass painting, on which the argument in favour of the mosaic system almost entirely depends. However, as I went into this subject at great length in a little work which I published in 1847,* I must refer those to it who are inclined to pursue the matter further. It may seem superfluous to those who have read this book, to assure you that there is a perfect consistency between it and such views as I have just expressed; but as certain writers are in the habit of taunting me with inconsistency, I may as well state that the only foundation for the charge is this—that perceiving at the time when that book was written, that modern copies of the thirteenth-century windows, besides being very raw in colour, were, owing to the extreme pellucidness of the glass then in use, thin and poor in effect, the most favourable examples never having a more imposing air than a *veneer* of an old window might be expected to have, and that the process of antiquating the glass, that is, dulling it over with enamel brown in imitation of the effect of age, only produced dulness without imparting depth—I ventured to suggest the adoption of shadows, such as we see in cinque-cento work, as well as a broader style of colouring than was used in the mosaics of the thirteenth century, as a means of correcting the flimsiness, without destroying the brilliancy of the material, and, at all events, of giving *power* to the work. And that since the manufacture of the twelfth century glass has been revived, I have advocated a nearer approach to ancient precedents, both in the execution of the painting and the method of its colouring. I trust this brief explanation will finally dispose of the charge to which I have alluded; a charge which never would have been made any more than the absurd misrepresentation, that I have at any time recommended the universal employment of the Cinque-cento style, details and all, had it not been for those writers' ignorance of the subject on which they professed to write, and their consequent inability to comprehend any argument in relation to it which is founded on general views.†

Charles Winston.

* "An Inquiry into the Difference of Style observable in ancient Glass Paintings, with Hints on Glass Painting, by an Amateur," p. 338, *et seq.*

† This paper was read at the Institute of British Architects, as previously noticed, and was discussed there on the 12th inst.

OUTRAGEOUS TAX ON FIRE POLICIES.

Of all misfortunes which impend over humanity, none are ordinarily more fatal than those occasioned by fires. The tenement, the furniture, the documentary titles, and even the lives of inmates, are oftentimes sacrificed; and yet there is no contingency of loss so easily guarded against. The system of insurance against fire is comparatively a modern institution, and was confined, until a very recent period (within the memory of man), to some dozen great offices. These offices increased, with the provident custom of insurance, to enormous establishments. They amassed colossal revenues, and charged premiums much higher than practised actuaries of our day find sufficient to realise a profit. The increasing demands of the community soon awakened competition, and companies became, in forty years, one hundredfold more numerous. So also rivalry abated the charge of security against loss by fire, until for 1s. 6d. per cent. *paid to the offices*, an occupier can secure his habitation and chattels against the accident so much to be dreaded.

The ravages of fire no longer make gaps in our streets, awaiting the revived energies and resources of the late tenant, whose whole worldly possessions have perhaps been a holocaust to the fatality. Insurance offices, even at the very scant premium of 1s. 6d. in the 100*l.* sterling, not only restore, but renew the burnt pile. But notwithstanding the manifest advantage and crying necessity for protection against the evils which await alike upon the cottage and the palace, *not one-half of the houses of Great Britain are insured at all.*

Considering the benefits derived from this system, and the prompt restitution and redress afforded by all insurance companies in cases of fire, this fact is astounding as it is alarming; and as there is no principle of provident forethought which ought to be more encouraged, so the Government should foster the tendency, and rather give a premium to the practice than impose an excessive impost upon it. Instead of this, however, the tax levied on fire insurance policies is just 200 per cent. or 3s. in the 100*l.*! just double the charge of the office which guarantees the risk!

The *impolicy* of this fiscal impost is so manifest, that it needs no remark, further than this, that but for that inordinate and extortionate levy, nearly every mansion and cottage in the kingdom would be guarded against the dread visitation.

A million a year is doubtless an item not to be lightly given up by a Chancellor of the Exchequer, but is there no national loss in the destitution annually caused by the destruction of uninsured property?

To tax provident precaution is to tax virtue; but to exact so inordinate an amount as double the charge made by officers for the absolute risks is a cruelty and a crime.

Seeing that the abatement of an extravagant impost is invariably followed by an increased revenue on that item,—it would be wise as well as beneficent for the Legislature at once to reduce the duty on policies by at least one-half, if not two-thirds: the increased numbers, if not entirely remunerative the first year, would soon make up the deficiency, and the extensive national advantages resulting from a generalized system of security would more than repay the loss to the exchequer.

If there are in Great Britain 500,000 houses uninsured the abatement of the present duties and premium from 3s. to 1s. per cent. would soon enrol on the lists of these provident establishments a number that might compensate the Government exaction, and this would be only a reduction by the Government to 1s. 3d. under the charge made by the officers.

The subject has been often considered by parliamentary men; still no great effort has ever been made to give free scope to the spirit of precaution which, under an altered system, would stimulate *every householder* to guard his hearth, his home, and his effects.

Risks on maritime insurances are also greatly aggravated by a heavy impost, and ours is the only nation that taxes trade (otherwise much emancipated), in excess.

The French call their ships buildings, or "bâtiments," and they are truly buildings in which are stored the prosperity and grandeur of every commercial country. To diminish the restraints on commercial navigation, is to spread 1,000 sails—to abate the iniquitous tax on house insurance, is to bring security to countless homes.

As a tax on commercial enterprise, the duty on fire insurance is the heaviest that ever was imposed. It distances even the Indian impost on salt.

Presuming that fire-offices realize, after deducting their losses and working expenses, one-fourth, or 25 per cent. on the premiums paid—and that is far beyond their actual profit—then the Government receives eleven times the whole trading profit! not leaving A TITHE to so hallowed an institution. What say ye to that, ye objecters to property tax?—double the whole trading capital, and eleven times the whole profits!

The trading companies run all the risk of loss by fire—the Government only the risk of being considered extortionate and reckless of the commonweal.

Quondam.

DICTIONARY OF ARCHITECTURE.

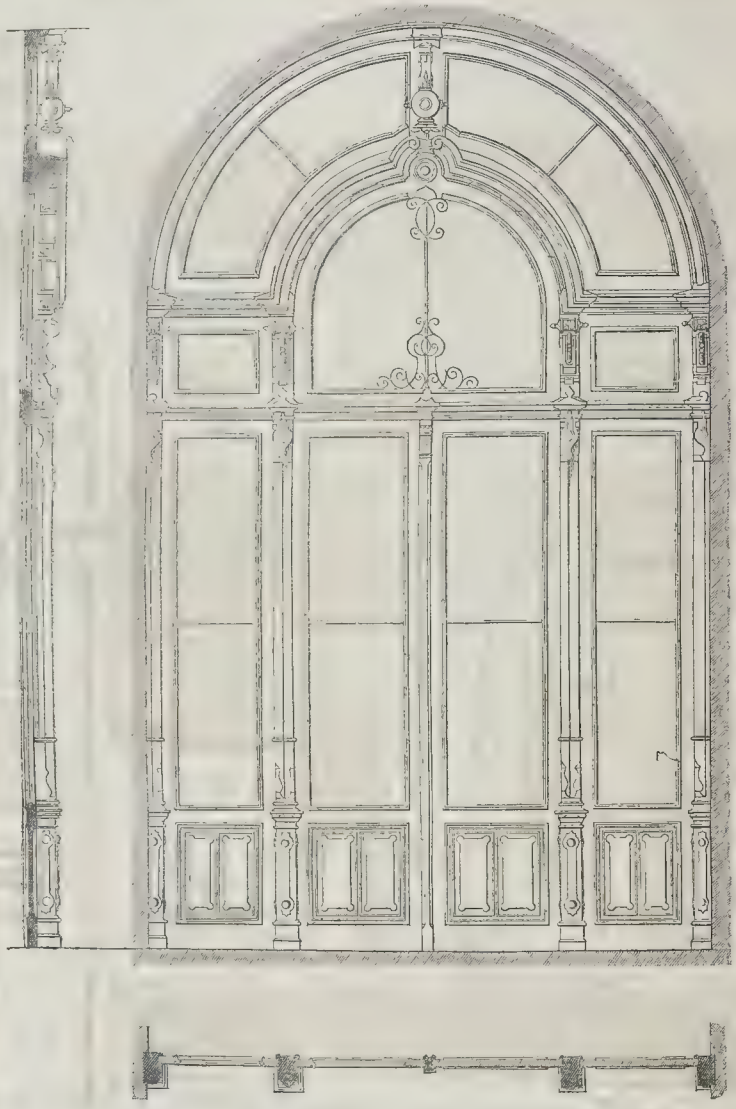
The Architectural Publication Society calculated, in its fifth year, that if it had no fair prospect of carrying out efficiently its cherished scheme of an encyclopædia in many volumes, it could at least produce a dictionary which should be worthy of the Society, the age, and the art. The first part of this work has been issued to the subscribers, and should serve to gain for the undertaking many fresh supporters.

At the first glance it is evident that the term dictionary does not render justice to the contents; for in addition to the merely technical terms in present use, which are the stock of all minor publications of the kind, and which are here explained, the Society has undertaken the biographical and topographical subjects relating to architecture, in which respect the valuable *Dictionnaire*, published by Quatremère de Quincy, in 1832, has naturally been taken as the example. It is also satisfactory to see that the Society has fully recognised the claims of those subjects in botany (as taking timber-trees for its province); chemistry (as including pigments and metals); geology (as representing all other building materials); and ornamental decoration, which really relate to the routine of architectural practice. Some of the matter the reader will not find in any dictionary or encyclopædia, such as the articles, "Absorbing Well," "Acanthus," "Actinism," "Æsthetics," and "Alabaster."

The topographical division takes the ancient remains and the modern condition of the cities which men have at different times erected in the world: and as, excepting Murray's "Handbooks," and one or two other "Travellers' Libraries," no works have yet treated of towns *architecturally*, there is every reason to suppose that, if well done, these articles will serve as memoranda for notices upon the spot, and for saving a great deal of time when the voyagers would otherwise be ignorant that some predecessor had appeared in the expensive glories of line engraving, lithography, and type.

It is a feature of our new dictionaries that authorities are quoted, and their particular works mentioned: it is well to have the actual chapter and verse, unless every passage is identified or verified by the committee. It is needless to say that the titles and general character of a large number of very valuable works, unknown we fear to the majority of the architectural public, are thus brought forward, and form an important element of the new undertaking.

The society, but especially the committee, having begun this work, are seriously compromised: the profession will be really disgraced if they fail to carry it out as well as they have begun: they will have the dishonour of having prevented the appearance, we are told, of at least two other private undertakings of the same character; and they will have destroyed for a long time the chance of future co-operation to such an end. The book should be in the library of every architect, engineer, builder, and amateur; and we shall hope to see in the next report of the Society an accession of members sufficient to place all the



GLAZED SCREEN, BRUSSELS.—M. Beyaert, Architect.

responsibility of success upon the committee, who of course can only expend the amount subscribed—*the greater the number of subscribers, the sooner the undertaking should be completed.* Surely there must be at least a thousand to aid in such an event. Pray, come forward, gentlemen!

A GLAZED SCREEN, BRUSSELS.

The annexed elevation of a glazed screen and door, placed behind the *porte cochère* of a house in Brussels, we have engraved from the *Journal Belge de l'Architecture*. The height to the underside of transom is 2·90 metres, the total height 5·07 metres. The width is 3·08 metres. M. H. Beyaert was the architect.

A Bristol Archæological Society, we hear, will shortly be inaugurated under favourable auspices.

THE DUBLIN INDUSTRIAL IMPROVEMENT SOCIETY.

Many of the houses in which the labouring classes of Dublin are congregated are ill constructed, erected solely for the purpose of deriving a profit, and wholly irrespective of the comforts or necessities of the inmates. Cleanliness is impossible, and the consequent wretchedness of condition leads to abasement and crime.

To correct these evils the Dublin Industrial Improvement Society has been proposed, and we are glad to hear that its organisation is making satisfactory progress. Mr. Cheyne Brady is acting as honorary secretary, and Sir Thos. Deane, Son, and Woodward are the honorary architects.

It is proposed to raise a sum of money by subscription, sufficient to enable the committee to build or improve a small number of houses, and subsequently, should the undertaking realise the anticipations of the promoters, the committee will take the necessary steps for the establishment of a company, and either procure a charter of incorporation, or endeavour to induce the Legislature to pass an Act of Parliament granting the necessary legal powers for more extended operations.

It is unnecessary for us to say that we cordially wish them success. They must, above all things, strive to make the undertaking pay, in a commercial point of view, and thus ensure its continuance.

Trinity College Church, Edinburgh.—The city council have virtually resolved, by a small majority, that this edifice is to be re-erected.

Strike at Shields.—Some of the joiners and house carpenters of North Shields are on strike in a dispute with their employers respecting the hours of labour during winter.



PANEL AND LOCK, FROM HOTEL CLUNY, PARIS.

PANEL, &c. FROM HOTEL CLUNY, PARIS.

The accompanying woodcut represents a panel from an old chest or wardrobe at the Hotel Cluny, Paris, executed at a period when the Renaissance was coming into vogue in the latter half of the fifteenth century. The hinges and lock are of polished steel, with a red cloth ground in the tracery. The size of the panel, exclusive of the centre piece, is 14 inches by 12 inches. The museum abounds with excellent specimens of mediæval art, the greater part of which may be seen in Du Sommerand's "Arts du Moyen Age."

The Dublin Winter Garden.—The Exhibition building was opened last week as a *Jardin d'hiver*. The morning was intensely cold, and the car-men would call it *Dargan's shiver*. Statues and plants adorn the hall.

TO FIND THE DIMENSIONS OF WROUGHT-IRON TIE-RODS.

The use of wrought-iron tie-rods instead of heavy timber tie-beams is now becoming so common in the framing of roofs, as to render it necessary to find some exact method of ascertaining the diameter required for such rods in roofs of various spans.

In proceeding to this investigation there are two problems which require solution:—

1st. *What is the horizontal thrust produced by the principal rafters upon the tie-beam?*

2nd. *What is the resistance to tension of a wrought-iron rod for every square inch of section?*

The horizontal thrust (T) upon the ends of a tie-beam is found by the elementary principles of mechanics to be

$$T = \frac{w}{2\tan.i.},$$

where w is the weight borne by one of the principal rafters, and i is the angle of inclination of the roof. The weight (w) depends upon the length of the rafters, the distance apart of the trusses, and the weight laid upon each square foot of the roof.

If we call S the span of the roof in feet, then

length of rafter $= \frac{\frac{1}{2}S}{\cos.i.}$. The distance between the trusses is usually taken at 10 ft.; and the weight laid upon each square foot of roofing is calculated by Tredgold at 66 lbs. including effect of wind, &c.

Therefore we find $w = 66 \times 10 \times \frac{S}{2\cos.i.}$ in lbs.

whence $T = \frac{w}{2\tan.i} = \frac{330}{2\sin.i.} \times S.$

Now the inclination (i) is seldom less than 30°, which we may therefore take as the angle producing the greatest strain which the tie-rod is ever required to bear in practice; bearing in mind that the horizontal strain decreases as the angle of inclination of the rafters increases.

When the angle $i = 30°$, sin. $i = \frac{1}{2}$,

and we have $T = 330 \times$ span, in lbs.

The next quantity which we require to know is the resistance to tension of a rod of wrought iron for every square inch of section. From the experiments made by Mr. Hodgkinson, and given in the Parliamentary Report on the Application of Iron to Railways, we find that eleven tons is the greatest strain per square inch of section that a wrought-iron rod will bear without its elasticity being injured. We may therefore safely take one-half of this amount as the strain which may be put on the tie-beam of a roof, or the section of the tie-rod must be such that it shall not be required to bear a greater strain than $5\frac{1}{2}$ tons, or 12,320 lbs. on every square inch of section, which is about one-fourth of the breaking weight of the rod.

The area of section of tie-rod is therefore found by dividing T by 12320; or—

$$\text{Area of section} = \frac{330 \times \text{span}}{12320} \text{ in square inches.}$$

If we call a the area of section thus found, and d the diameter of the tie-rod (supposed circular), we have—

$$d = 2\sqrt{\frac{a}{3{\cdot}1416}}$$

which can be readily calculated by the aid of logarithms for each different span of roof.

The following table gives the diameters of the tie-rods, which may be safely used for roofs of the corresponding span, the dimensions being calculated rather full than otherwise:—

Span. Feet.	Strain on Tie-rod. lbs.	Diameter of Tie-rod. In.
20	6,600	$\frac{7}{8}$
25	8,250	1
30	9,900	$1\frac{1}{8}$
40	13,200	$1\frac{1}{4}$
50	16,500	$1\frac{3}{8}$
60	19,800	$1\frac{1}{2}$
70	23,100	$1\frac{5}{8}$
80	26,400	$1\frac{3}{4}$
90	29,700	$1\frac{7}{8}$
100	33,000	

The highest inclination of roof ever adopted is 60 degrees, forming an equilateral triangle, in which case—

$$\text{Strain on tie-rod} = \frac{330}{2 \text{ sin. } 60°} \times \text{span.}$$

$$= 188{\cdot}6 \times \text{span.}$$

$$\text{Area of section of tie-rod} = \frac{188{\cdot}6}{12320} \times \text{span} = a.$$

$$\text{Then diameter of rod} = 2\sqrt{\frac{a}{3{\cdot}1416}}.$$

The dimensions here obtained for the several cases should never be exceeded, as any additional weight of tie-rod produces an increased strain upon the king or queen rods which have to support it.

E. W. Tarn, M.A.

Patent Vitreous Marble.—We have seen at 4, Russell-place, Fitzroy-square, some specimens of a new patent for marbling on glass, or under glass, which presents two noticeable features. 1st, the perfection with which elaborate designs representing mosaics and other ornaments can be produced. And 2nd, the consolidation of the glass surface which deprives this eminently beautiful material of its natural fragility, and renders it extremely useful to the architect for external and internal decoration—glass, like all vitrified substances, being almost indestructible by atmospheric agencies. For floors, walls, mantelpieces, and panels for furniture, the new patent marble is well adapted, and we shall hope, for more reasons than one, to find it extensively adopted. The additional reason is this, that the patent is being worked at the "Ladies' Guild"—an institution opened some time since to aid respectable females who are dependent on their own support. This fact, however, must not be allowed to raise a notion of flimsiness in connection with the work. This would be unjust: it seems sound and good.

CHROMATIC DECORATION OF THE NEW YORK CRYSTAL PALACE.

The theory of colours is of a very recent development, and a knowledge of the laws deduced is confined to very few even of those who require it in the exercise of their professions. It is rarely that we find practitioners, even in the higher branches of painting, who are guided in their compositions by any other principle than those suggested by individual taste and a cultivated eye. It is a question worthy of consideration, how far the mediocrity of painting of the present day is attributable to an overweening reliance on natural powers, and a neglect of the lights of science. In the sister art of music we continually see that those who refuse instruction in the theory of the art rarely attain to any excellence, while those who study profoundly, advance steadily, in proportion to their natural endowments. We are thoroughly convinced that much genius is now wasted in the acquirement of rudimentary knowledge in the slow school of practical experiment, and that the excellence of the Greek school of design arose from a thoroughly digested canon of form, and the use of geometrical formulas which make the compositions of second and third rate artists of that period the wonder and admiration of the present day.

A decoration arising chiefly from the harmony and variety of colours introduced is the style attempted, in a simple key, in the New York Crystal Palace, to which we refer by no means as evidence of the *extent* to which it may be carried, but merely as a commencement in that *direction*. The shortness of time allowed for decoration, the difficulty of obtaining a large number of experienced workmen at short notice, and the ephemeral character of the building, all pointed to a broad and bold treatment of the subject, not only as most feasible, but most conducive to the purposes of the Exhibition. It seemed desirable to furnish a modest and appropriate background to the articles exhibited, rather than to make the building the chief object of interest.

The following rules, many of them applicable to the most complicated, as well as the simplest systems, have been mainly adhered to in the design of the decoration of the interior:—

I. Decoration should in all cases be subordinate to construction. It may be employed to heighten or give additional value to architectural beauties, but should never counterfeit them. Being in the nature of an accompaniment, it should keep in modest accordance with the air, and not drown it with impertinent embellishment. Colouring, to be employed with good effect on a building, should resemble the drapery of the antique sculptures, which, displaying between its folds the forms beneath, serves rather to enhance than to conceal their beauty.

II. All features of main construction should have one prevailing tint, enriched occasionally by the harmonious contrasts of that colour. All secondary, or auxiliary construction, may be decorated by the employment of a richer variety of the principal colour. This mode of treatment is suggested by the distinction which nature has made between the colouring of the trunk, branches, twigs, and leaves of trees.

III. The prevailing colour of the ceilings should be sky-blue, thus borrowing from nature the covering which she has placed over our heads. Monotony may be prevented by the introduction of orange (the natural complement of blue), garnet, and vermilion, in such quantities only as may be necessary to recall these colours employed elsewhere.

IV. Rich and brilliant tints should occur in small quantities, and be employed to attract the eye to the articulations and noble portions of the members, rather than to the members themselves. As in the human figure, variety of colour and form is most displayed in the extremities and joints, to which the broader style of the limbs and trunk serve as a foil, so in buildings, the bases and capitals of columns, brackets of arches, and the framework of panels, would seem legitimate objects for the reception of rich colouring. Occurring at fixed numerical distances, they are measured out in equal proportions as to space, and afford also a due quantity of brilliant and stimulating tints—sufficient to enliven the larger proportion of mild colour so essential to a general effect of quiet and repose.

V. All natural beauty of colour existing in any material, should, if possible, be brought into play, by using that colour itself, instead of covering it with paint of another hue.

VI. The leading feature of beauty in the Crystal Palace being that of proportion and geometrical harmony rather than elaboration of detail, all ornament introduced should be of the same character, mere geometrical outlines and forms to the exclusion of classical decoration, the characteristic of which is an imitation of the organization of foliage.

VII. White should be used in large quantities in all cases of simple compositions, not only to give value, by contrast, to the few colours employed, but to reflect light and cheerfulness to the work.

An adherence to these rules has produced a style of decoration pleasing from its novelty and from the harmony arising from the use of colour in accordance with the laws of science and the practice of the best masters. It presents to the eye a harmony composed in the key of orange and blue, varied by the introduction of more brilliant and compound tints in small quantities. This combination was selected as being peculiarly adapted to the interior. Sky-blue, which is confined principally to the dome and ceilings, serves to give an appearance of loftiness and airiness; while its complement, diluted orange or cream colour, not only balances the blue harmoniously, but throws a cheerful tint of sunshine over the whole of the interior. It has the further merit of being of a subdued hue seldom occurring in manufactured articles, and therefore serving as an excellent background to the mass of objects exhibited.

The power of blue to give an effect of loftiness to the building was strongly exemplified during the progress of the painting, by comparing one of the naves which had been decorated with another which remained unfinished. The former seemed more than double the height of the latter, although they are all of the same dimensions. It was equally interesting to observe that the introduction of a variety of colours into large spaces has the effect of magnifying the apparent dimensions to a wonderful degree. Space and grandeur are elements of so much importance in architecture, that we cannot afford their loss. If a building of great dimensions appear small, it is to be attributed, not to its *fine proportions*, as is sometimes alleged, but to a neglect of its projector to avail himself of one of the most effective instruments of his art.

In accordance with the general character of the building, no ornament of classical forms has been introduced. The only attempt to decorate by means of design has been in the use of mere geometrical lines and figures of a very simple character, which have been executed by common workmen, assisted only by the use of stencil patterns. The ceilings of the four lean-tos are all different: those of the galleries are of a fifth pattern, and the four naves have still another design in common. Thus the lean-tos, which can only be viewed separately on account of their remoteness, offer a variety among themselves; but to the spectator looking upward, a perfect uniformity in the galleries and naves is presented, above which rises the dome, still varied in design, but harmonizing with the rest. This portion of the decorations, which is of the florid Moorish character, rich in colour, and flashing with a profusion of gold and silver ornaments, when viewed by the favourable light of gas, forms a crowning grace and beauty to the Palace, imparting a fairy-like and magical effect to the whole.

The treatment of the exterior requires very few words of comment. It is painted of a uniform bronze tint or olive, enriched by gilding all ornamental features, such as the quatre-foils, the pinnacles, and railings. Where large surfaces occur, a rich orange tint, in imitation of gold, has been substituted for gold-leaf, as more economical. We have heard it objected to the decoration of the exterior; first, that by it the real material of construction is concealed; secondly, that the imitation of a more costly material constitutes a *deception*. In answer to this, we claim the benefit of a distinction

between *counterfeiting* the appearance of a material and borrowing an arrangement of colour suggested by it. In the present instance, no attempt to deceive has been made, but, on the contrary, the use of bronze powder and all other expedients by which painters endeavour to make a perfect imitation of *real* bronze, have been expressly avoided. Since constructions of iron require paint to preserve them from rust, we can conceive of no consideration affecting the choice of colour, other than the character of the building itself and its relation to surrounding objects.*

NOTES AND INQUIRIES.

ARTISTICAL AND ARCHITECTURAL.

Size of Joists.—Will you allow me to ask what the usual method is for calculating the strength of joists required for any given space, and if a floor with a bearing of 15 feet is properly supported by joists 6×2?—P. P.

*** Tredgold gives the following rule:—"Divide the square of the length in feet by the breadth in inches, and the cube root of the quotient multiplied by 2·2 for fir or 2·3 for oak will give the depth in inches." According to this the joists for the bearing named should be 10 inches by 2½ inches, or 9½ inches by 2¼ inches, 12 inches apart.

Metals.—In the early part of 1838 various experiments were made upon specimens of copper prepared by a Mr. Wall with a view to the prevention of the *oxidation* of metals. The surface was said to resist all action by acids, and it was supposed that it would resist any chemical action of salt water. Specimens were tested with very strong muriatic acid and nitrous acid, neither of which produced any apparent change on either specimens. Has this discovery continued to deserve its encomiums, and where can further information be obtained? P.

PROVINCIAL NEWS.

Cuddesdon (Oxon).—The Diocesan Training College for Holy Orders, near the Episcopal Palace, founded by the Bishop of Oxford in April last, is now almost completed. It is an extensive structure of Middle-pointed character, affording accommodation for twenty-one students, with vice-principal's rooms, a common room, dining-hall, and oratory.

Lichfield.—A new tower and steeple, in memory of a late vicar, is in course of erection at St. Mary's Church, under the direction of Mr. Street. Mr. Thomas Cooper is the contractor.

Shrewsbury.—The foundation-stone of an intended new Roman Catholic Cathedral, to be erected from the designs of Mr. E. W. Pugin, was laid on Monday in last week. This new building, which will cost upwards of 10,000*l.* will be the gift of the young Earl of Shrewsbury, who attained his majority on Sunday before last. The site is at Belmont, about 200 yards from the old chapel. The exterior will be of fine white sand-stone, and in the interior Bath and Caen stone will be used. The plan consists of three sacristies; a chancel, 41 feet by 23; lateral chapel, 13 by 11; nave, 81 by 23; aisles 81 by 11; tower and spire (at south-west corner), 227 feet high, the base measuring, from buttress to buttress, 40 feet; entire length of interior, 124 feet, and breadth, 51 feet. The church will hold 1,000 persons, and the style is Early Decorated.

Worcester.—The surveyor of the Local Board of Health here has resigned his office.

Merthyr.—The new workhouse here has been completed, to the satisfaction of the architects, Messrs. Aickin and Capes, and the guardians. Mr. Thomas, the contractor, according to the *Cambrian*, has been a loser by the contract in consequence of the great rise in materials and wages since he undertook the job.

Ashton-under-Lyne.—The east window of St. Peter's Church, has been decorated with stained glass. The window is a Catherine wheel, 14 feet in diameter, and divided into sixteen cinquefoiled compartments, the tracery of which terminates on an inner circle, or star of eight points, the whole being surrounded by a border of small quatrefoils. The principal openings contain, full-length figures of The Saviour, St. Peter, St. Andrew, St. James the Great, St. Philip, St. Bartholomew, St. Thomas, St. Paul, St. James the Less, St. Jude, St. Simon, and St. Matthias. In the horizontal divisions of the tracery are placed figures of the four Evangelists in a reclining posture, as in the act of writing their gospel. The background is diapered. Within the divisions of the inner circle are displayed, on a radiant ground, the Hebrew word Jehovah, the Dove, the Lamb, the celestial Crown, the Book with seven Seals, the monogram I.H.S. the Alpha and Omega, and the Sacramental Cup. In a lower compartment is inscribed, "The Gift of George Heginbottom, Esq. 1853." The window was executed by Mr. David Evans, of Shrewsbury, from a design by his son, Mr. Charles Evans.

Eccleston.—The *Chester Chronicle* states that the refitting and other alterations in Eccleston Church have been completed at the expense and under the superintendence of the Marquis of Westminster, and from plans, &c. furnished by Mr. Hodkinson, architect, and carried out by Messrs. Williams and Bellis, all of Chester.

Manchester.—The first column stone of a covered market, to be erected on the site of the present Smithfield market, was laid on Thursday in last week. An oblong square was obtained by clearing, 440 feet long by 244 feet wide, bounded by a line of new shops looking into the market. The whole of this place is to be covered with a ridge-and-furrow roof, in four divisions, like a railway-station roof. One side will be formed by the shops: the opposite side formed by Oswald-street, will be an open arcade, of pillars, 25 feet high, and sixteen arches, each of 18 feet span. The average height to apex of centre bays will be about 43 feet. Of strong rough plate glass there will be upwards of 60,000 square feet used. Between the louvreing and gutter the roof will be covered with slate. The present lamp and fountain will be removed; the site they now occupy is not in the centre of the new area, and there will not be a centre bay, so that they must either be dispensed with, or there must be one on each of the centre bays. A large number of competing designs, says the local *Courier*, by parties of well-known skill, were sent in, including designs from London, Dublin, Birmingham, Glasgow, and Derby. The plans, when obtained, were submitted to Mr. W. Fairbairn, who awarded the premium to Mr. Wheeldon, of Derby, manager for Mr. Haywood, of the Phœnix and Derwent foundries. The work will be done under the superintendence of Mr. Fairbairn, and on his recommendation Mr. Henry Bake has been appointed clerk of the works. The contract for the covering is 15,000*l.* but the total cost will be upwards of 30,000*l.*: this includes the purchase of the property between Scholes-street and Foundry-lane, also the erection of the tier of shops, the draining and flagging of the surface, and obtaining a good supply of water for the market.

Preston.—According to the local *Guardian*, the (R.C.) church of St. Walburge, designed by Mr. Hansom, architect, on the Maudlands, is now making great progress towards completion. The building has been reared, roofed, and slated, and on the east and west gables, crosses, bearing the image of our Saviour crucified, have been placed. The rood on the west gable has on one side of it the figure of the Virgin, and on the other that of St. John. At the east end, over the great window, a four-light window has been inserted, and also a window containing five lights over the Catherine-wheel window at the west end. Exteriorly, the building measures 170 feet long, by 60 feet wide; about 35 feet to the square, and 82 feet to the roofing. The roof is composed of thirteen principals, containing more than 7,000 pieces of timber, and is covered with boards laid on in a diagonal manner, and amounting to upwards of 18,000 feet square: the whole will be stained and varnished. The weight of timber is about 100 tons, and the weight of lead and slate about 100 tons also. The woodwork has been executed by Mr. John Walker, of Preston, builder. The contract for slating has been performed by Mr. George Pye, of same town.

Sunderland.—Messrs. Pennington and Jervis, of Manchester, architects, have obtained the first prize offered by the board of guardians of this town, for plans for the erection of a new union workhouse. There were about 100 competitors, and Mr. J. E. Oates, of York, obtained the second prize.

Glasgow.—According to the *Glasgow Reformers' Gazette*, the foundations of other three iron works have been laid on the south side of the city. The largest is an extension of Mr. M'Vicar's Glasgow Chain and Iron Works. The roof of the house in which the forge hammers are to be placed forms a semicircle, 100 feet long, 70 feet span, and 35 feet high. A large engineering work, in course of erection for Messrs. Randolph and Elder, will occupy the vacant ground bounded by Dale-street, West-street, and Melville-street, about 4,600 square yards. At Govan-croft, large premises have been taken by Messrs. James Grandison and Son, founders and machine makers, five stories in height, and covering 5,000 square yards of ground.

Hamilton.—The "water-rate," says a contemporary, is creating inflammation at Hamilton, while the much heavier "whisky-rate" is paid quite coolly. It is a very strange circumstance that the most nominally religious moiety of our native country is the most notorious for drunkenness, and that precisely the most sanctified districts of that moiety are those in which this disgusting and degrading vice is most rampantly prevalent. Let no reader of the *Builder* imagine that this may merely be an Englishman's repetition of a groundless exaggerated scandal against his neighbours. The writer is himself a Scotsman, and with pain he acknowledges that the charge is but too true. One of the most striking contrasts which he first noted between London and Edinburgh, but far more especially between London and Glasgow, in all of which places he has resided for years, was the comparative sobriety of the lower orders in London: if the ruling vice of his poorer countrymen was disgusting in his eyes before, this contrast only rendered it still more hideous. The lower orders of Irish, however, with which Glasgow, and even Edinburgh, is infested, merit no small share in the obloquy. The most intelligent, clever, drunken, and worthless fellow the writer ever knew, however, among the working classes at Glasgow, was a tailor, a native of Hamilton. He believes that inadequacy of wages to provide such homes and such comforts as tend in England to preserve the self-respect and independence of the working classes has much to do with this vice; but above all it is deplorable that the hell-broth which does all the mischief is not placed beyond the reach of the poor *as it is in England*. As for gin, injurious as it is in other respects, it is but as "swipes" in comparison to whisky.

PROSPECTS IN SYDNEY, NEW SOUTH WALES.

I HAVE lately had the pleasure of reading your valuable paper, and in doing so it occurred to me that the *Builder* was the proper medium through which to inform the mechanics of England of the opportunity now open to them of improving their condition.

The *Talavera* emigrant ship arrived here last week, and the whole of her passengers were engaged at the highest rate of wages on the same morning allowed by Government for employers to visit the ship.

Every description of labour is extravagantly high in Sydney at present, and is likely to continue so. The first proposition is fully borne out when masons are receiving 16s.; bricklayers, 14s.; plasterers, 13s.; carpenters and joiners, 12s. to 13s.; sawyers, 14s.; quarrymen, 20s.; labourers, 10s. to 11s. per day; and all other trades in proportion. The latter is amply proved when I mention that St. Andrew's Cathedral (Episcopalian), St. Mary's Cathedral (Roman Catholic), St. Philip's (new church), St. Paul's, Trinity, and Christ Church all remain in an unfinished state for want of labour—not particularising the numerous stores, shops, and residences, waiting completion. In addition to all this, there are the new Exchange,

* The foregoing is from *The Illustrated Record of the New York Exhibition*, published by Messrs. Putnam and Co. New York, and Messrs. Low, of Ludgate-hill, London. This has now reached twelve numbers, and is a very creditable publication.

new Post-office, Colonial Treasury, and Mint, Circular Wharf, and other works of equal magnitude, which the Government and public companies would immediately commence if the labour market was somewhat easier. These works alone would afford profitable employment for thousands of the industrious tradesmen of England of the present and rising generation.

The list of prices now given are those paid this week. What they may be next I cannot pretend to say—perhaps the minimum advance in these times is 1s. per day.

Nothing but a strong feeling of what I consider my duty to advance the interests of the colony and benefit the working classes at home has urged me to trouble you with this communication. I have no object to serve, no interest to promote of a personal nature, and the greatest reduction in the price of labour would not in the smallest degree affect my circumstances or position. I pledge my honour for the accuracy of these statements, and refer you to the most respectable firms in London (names annexed) as to my credibility.

In order that my remarks may not be calculated to mislead, and that intending emigrants may form some idea of the expenses of living in this "land of plenty," I will conclude with a price list of the chief requisites in family use:—Bread, 4 lb. loaf, 6½d. to 7d.; butter, 2s. 6d to 2s. 9d. per lb.; cheese, 10d. to 1s.; beef and mutton, 4d. to 4½d.; sugar, 3½d. to 4d.; tea, 1s. to 1s. 3d.; coffee, 14d.; candles, 6d. to 7d. per pound; proportionately for other articles; and these prices are higher than they have been for the past five or six years. A. H.

Sydney, Sept. 12th.

DISEASE AND CONTAMINATED WATER.

THE following, I apprehend, is in support of the views advanced in the important article on the "vehicles" (if not origin) of choleraic contagion in your last number.

A near connexion of mine, in Wiltshire, not long since built two batches of cottages—one on the upper part of a hill, the other half-way down—both connected by the same line of sewage. The upper batch remained quite healthy, whilst the lower became suddenly the prey of typhus of a malignant type. Both sets of cottages were on the slope of the Great Northern escarpment of the Chalk Downs—the country open, and remarkably healthy; so that my brother-in-law felt much puzzled to account for the mischief: he persevered, however, in his study of the subject, and it occurred to him at last, that although not built many years, it was possible that the sewage might be more or less choaked. On investigation, he found that the water of the well of the lower cottages became at times turbid, evidently by matters that found their way through the brick lining of the said well, which was placed *too near* the drain: this last was immediately opened, and the proprietor's suspicion verified. When the drain was put to rights the disease soon disappeared.

Now this tale appears to be a sort of normal history, which has, I much fear, not much in the way of novelty—at least, with reference to frequency of occurrence. How far the truth it embodies (of the relation between disease and contaminated water) has been acted on, I know not; but this opportunity is taken of again urging the necessity of noticing in sanitary reports the relative position of the wells and sewers. R. J. NELSON, Capt. R.E.

THE IRON TRADE.—We are glad to hear, from the *Birmingham Journal*, that "the losses sustained this year by speculators have been so heavy that there is no probability of prices being forced up again, undoubtedly to the great inconvenience and loss of the legitimate trader, whose channels, both of supply of materials and also of sale of produce, are so largely interfered with by these operations, and whose most careful calculations, even when made upon comprehensive surveys of probable future consumption and demand, are liable to be rendered altogether nugatory thereby." Prices now quoted in the *Times* are—for bars of best brands, 10*l.* and 9*l.* 10s. for secondary articles; hot blast mine pigs, 4*l.* 15s.; cold blast, 5*l.* 5s. to 5*l.* 10s.; and hot blast cinder pigs, 4*l.* to 4*l.* 5s.

AMERICAN NEWS.

Monuments.—The Washington Monument is now 150 feet high, and, when completed, will be about 500. It is found that the monument stands exactly in the middle of what was the "ten miles square." Mr. Powers has received an order at Florence, from Boston, for a bronze statue of the late Daniel Webster, to be placed in front of the Massachusetts State House.

Building at Boston.—An extensive building is now being erected on the corner of Atkinson and Purchase streets, which will extend to Pearl-street, and connect with a large store there, so that the entire depth of the building will be 215 feet. This addition will be five stories in height, having a front of 113 feet, and depth of 117 feet. The front will be of granite. The estimated cost of it is 100,000 dollars. The style is comparatively plain. The contractors are J. E. and N. Brown and Co. The building is for mercantile purposes. The number of "splendid stores" erected in the business portion of the city for the present year has been greater than for several years preceding.

Elastic Railway Tracks.—The elasticity and smoothness of motion, still a *desideratum* on railways, to enable passengers to read freely as well as converse quietly, are proposed to be attained by a device called "Babcock's Railroad Track-supporter and Track-spring," in which elasticity is applied to the rails instead of to the carriages. This elasticity Mr. Babcock provides by means of air-tight metal boxes, each inclosing a circular piece of India-rubber, a box being set into each end of every tie, just under the rail. The rail merely settles a little on each India-rubber spring as the train presses upon it, and rising again when it has passed, leaves the track as before. The entire cost of this apparatus is estimated by the inventor at some 1,200 to 1,500 dollars a mile; and he calculates the average yearly saving thereby in wear of track and rails alone at 350 dollars a mile.

Impromptu Gas-lighting.—The Art-Union building, New York, was brilliantly illuminated one evening lately by gas generated upon the spot, and instantly applied. In a large room, a gas-ometer, containing about 40 cubic feet, was filled with common air. By a gentle pressure the air is forced through a new hydro-carbon fluid, and after being so passed, it yields, it is said, a brilliant light, in the manner of the best coal-gas. The fluid is called *Kerosene* by the discoverer. It is obtained abundantly from an asphaltic rock in the province of New Brunswick.

CITY THOROUGHFARES.

A VERY great advantage to the public might be given by a more direct communication between the west and east sides of London, in avoiding the thronged parts, such as the Strand, Fleet-street, Ludgate-hill, Cheapside, &c.

I see by the map before me that commencing (say at Hyde-park-corner as the west-end starting-point) a clear line of communication to Shoreditch Church in the east, giving thereby better access to the Hackney and Newington roads, leading to the counties of Essex, Herts, &c. (as well as the Eastern Counties Railway terminus, Victoria-park, &c.), may be formed by proceeding along Piccadilly, Coventry-street, Long-acre, and Great Queen-street, continuing through into Holborn from the junction of Great and Little Queen-streets in a slanting direction through Little Turnstile into the wide part of Holborn opposite Day and Martin's warehouse, thence along Holborn to Middle-row, leaving it on the right hand, and taking down two or more houses at the east and west corners of Gray's-inn-lane, and proceeding in a slanting direction across Brook's-market, by the end of Greville-street, across Leather-lane, Hatton-garden, Saffron-hill, Victoria-street (with a viaduct or bridge, thereby doing away with any hills of consequence through the whole line), straight on to the end of Wilderness-row, widening the same, and so into Old-street-road, thus completing the route already specified.

The great advantage to be gained is, that all the traffic through the circuitous route by St. Paul's, &c. will be entirely avoided, not only by those persons coming from Knightsbridge, &c. but also that all those coming from Notting-hill, &c. will receive the same benefit on arriving at Middle-row, avoiding the dangers of Holborn-hill and Skinner-street, and having a shorter distance to travel. By this arrangement the roadway at Middle-row, would be very much widened, and so do away with any necessity for taking it down: another advantage would be a more direct mode of omnibus and other conveyances for the public generally to all parts of the east as well as Islington in the north, and doing away with the frequent stoppages that take place at Gray's-inn-lane end, besides shortening the distance by at least one mile between the two before-mentioned points, viz. Hyde-park-corner and Shoreditch Church. W. R.

APHORISMS OF ART.

PERHAPS no writer has yet given to the world a work which is in itself an epitome of all that is best worth knowing in art. Such a work would be invaluable. There are innumerable books, lectures, and dissertations on the fine arts; and discussions, where nothing is decided about the terms and abstruse sentiments which occur in the consideration of them. Even these are interesting and full of suggestions to the thoughtful reader, who has abundance of leisure. But the majority of persons in search of information of these subjects cannot afford the time to read many books containing matter that is foreign and adventitious: they want to get at and retain such principles as are received as true by general consent, founded on just and accurate observation, of universal application, and indispensable to excellence in their profession. To give practical value to these truths, it is required that they be expressed in a few words. We want a man of industry to collect the golden rules of art that lie scattered through so many volumes,—all such as have been inculcated by great artists in their short but pregnant sayings. Great treasure lies in these maxims. Men of extensive practice will be liable to err: what they conceive their best concerted plans fail, from ignorance or neglect of them. A knowledge of these aphorisms improves the powers requisite for the productions of genius. We are enabled by them to feel the force of imagination, the refinement, the power of representing and idealizing, the sensibility, the invention and judgment displayed in the arts. Then, whatever department we choose, whatever examples we select for imitation; whether skill in theory or practice be our ambition, recourse should be had to aphorisms. They are helps both to the young and the old: they confirm those who are judges of truth, and assist inquirers for it. Like the ancient writings, bound on the forehead, and containing something worth remembering, they should be impressed on the memory, and borne constantly in mind.

F. LUSH.

DRAINAGE AND WATER IN THE COUNTRY.

THE Ely Board of Health opened the several tenders for water-tank and castings on 16th inst., and the tender of Messrs. Headley and Manning, of Cambridge, being the lowest, was accepted at the sum of 1190*l.* 13s. 5d. for both tank and castings.——At Cheltenham, the first special rate towards the liquidation of the debt of 11,000*l.* the estimated cost of the new main sewers, is about to be allowed by the Commissioners. It amounts to five farthings in the pound on the assessable value of the property included in the district, and it is understood that a rate of one penny will be sufficient in future years. "No one," says the local *Journal*, "will grudge such an impost for so good and essential a purpose, and the fact that the amount is not larger is the best answer to those who predicted the ruin of the borough from the operation of the Improvement Act."——The St. Helens Water Works are now approaching completion. They are situated on Eccleston-hill, about 240 feet above the level of the town, and will cost 12,000*l.* The water springs from the red sandstone, and has been found on analysis to be remarkably pure. It is pumped by an engine of 47-horse power, with a 36-inch cylinder, built on the Cornish principle, by Mr. Robert Daglish, of St. Helens. The probable quantity per day is 1,000,000 gallons. The reservoir, which is an extensive cave, will hold about 1,400,000 gallons; and the mains from the works are 12 inches in diameter. The water from the old reservoir and the old mains will be reserved for manufactories.——The Wakefield

Council have adopted a resolution, empowering Mr. Manger to report on a better supply of water for the borough, to value the present Waterworks' Company's plant, estimate the present quantity of water, and report on its quality. The clerk of works has also been directed to prepare plans of a general system of sewerage for the whole borough.——An efficient system of sewerage is about to be carried into effect at Carlisle early in the ensuing spring. The report of Mr. Rawlinson, detailing the plan by which he proposes to sewer the town, was laid before the Town Council on Tuesday in last week, and unanimously adopted. The concluding paragraph states, that "There are about 18,625 lineal yards of public sewers and drains, or about 10 miles, 1025 yards, exclusive of house branches and other private drains provided for in the estimate. There will also be provided upwards of 4,000 side junctions, 150 man-holes, and 300 street gullies, all fixed complete, for say 23,000*l.*"

HOUSES FOR FREEHOLD LAND SOCIETIES.

THE article on Freehold Land Societies, in your number of November 19th, has, I have no doubt, given many of your readers sincere pleasure. That such societies should be viewed favourably by the *Builder* is only natural, but I venture to suggest whether you might not render a substantial service to those persons who are intending the erection of cottage or small villa residences upon the land, of which, through the medium of these associations, they have become the possessors.

Your Bradford correspondent, referring to the labouring man, says in the quotation which you give, "Why should he not, while he makes the arrangement *within* his dwelling conducive to the health, convenience, and comfort of its inmates, endeavour to add to the neatness and comeliness of its appearance without ?" The question appears to me easy of solution, not only why *he*, but also why a class superior to him in point of means, neglect to do this: *it is the not knowing how to set about it*—the not having access to plans and estimates for such buildings, and the opinion (I trust an erroneous one) that any thing sightly must be necessarily expensive. I fear the building on these estates has been too much a game of follow the leader, and that the leader has commonly been a man of no taste; one to whom a house is simply a thing to live in, rather than a *home*—a word which seems to involve a certain amount of quiet beauty.

I am not about to advocate every man becoming his own architect, for I am persuaded the cases are very rare in which it is safe to build the humblest tenement without professional assistance; but I do think that the more the classes to which I allude, are made acquainted with the nature of their own wants, and with what they may reasonably expect in return for a certain amount of capital expended, the better it will be for them.

I venture to suggest the following matters, to which your own knowledge and experience will doubtless add others equally important, on which information should be given.

1. *Fencing.*—The comparative merits of various kinds; additional cost of increased height; advantages or not of tarring, &c.

2. *Advice respecting Cottage and Villa Residences.*—Merits of detached and semi-detached, with ground plans and elevations, say ranging from 80*l.* to 500*l.* (200*l.* and 300*l.* houses are frequently required).

3. *Foundations* as modified by local circumstances of soil, &c.; *cellars, drains, water-closets, cess-pools, wells, water laid on;* additional cost for conveying water to the upper rooms; best method of *collecting rain water*; cost of laying *gas-pipes:* under this head might be treated all matters relating to health, especially as promoted by dryness and cleanliness.

4. Paths and surface soil near the house—whether advisable in a clay soil to burn earth for a substratum as is now often done—with the best method, and probable expense.

The cost of a house, and of all the operations connected with its erection, must of course vary very much from local causes; but I should imagine an estimate might be made, which would approximate (at a certain given price for materials) to something within 10 per cent. of the actual outlay which would be required.

As I doubt not you have the managing directors of these societies among your readers, allow me to ask them if they have done all in their power to promote the erection of suitable dwellings—nay, if most of them have done any thing beyond defining the building lines, and stipulating that the houses shall be detached or semi-detached, and of a certain minimum value. Truly, any one who visits most of the estates, after surveying the unsightly tenements which will meet him at every turn, must mourn with your Bradford correspondent over a good opportunity thrown away; but with the energetic assistance of the *Builder*, we may look hopefully to the future. FREEHOLDER.

ASSESSMENT OF MARKET-GARDEN LAND, FULHAM.

THE parish of Fulham has been resurveyed, under order of the Poor-Law Board, which came into operation upon making the last rate for the relief of the poor, dated 16th October, 1853. The appellants were Messrs. Fitch, Mr. Broadbent, Mr. Poupart, Mr. Steele, &c. The number of market-gardeners in Fulham, as stated by the parish surveyor, is sixteen or eighteen. The rating of land in Fulham has been generally raised from 20 per cent. to 30 per cent. and in some instances from 4*l.* or 5*l.* to 6*l.* 15s., 8*l.* and even 10*l.* per acre. On Monday the special session was held for the western division of the county of Middlesex, at the Holland Arms, Kensington, before a full bench. Mr. Sleigh, barrister, Mr. Curwood, solicitor; supported by Mr. Paine, surveyor, Mr. James Poupart, Mr. E. M. Newman, &c. appeared for the appellants. Mr. Jones, solicitor, Mr. Hackman, vestry-clerk, Mr. M. Clure, surveyor, for the respondent parish. Mr. Paine said:—Rental was no correct criterion of assessment. Mr. Broadbent's land was good land in ordinary cultivation, and its outside value was 6*l.* 10s. per annum, *i. e.* "from year to year," &c. subject to statutable deductions as follows, viz. 10*l.* for repairs of homesteads, &c.; 2*l.* for insurance on 800*l.*; to reinstate, 10s. per acre per annum for the maintenance of gates, fences, &c. Hothouses and growing fruit-trees, as stock in trade, were not separately rateable. Hothouses conferred a certain additional value on land, but the cost of maintenance was great. Fruit-trees were generally planted on the best land. Land was equally assessed throughout the parish in comparison with the gas-works. The preceding deductions brought the value of Mr. Broadbent's land to a rateable value of about 5*l.* an acre (78*l.*), which was charged 110*l.* or 8*l.* per acre in the new survey. Mr. Broadbent stated that he paid 98*l.* per annum, on lease. The exhalations from the gas-works were prejudicial to vegetation, and deteriorative of the value of his property. Mr. M. Clure supported the assessment of Mr. Broadbent's land at 8*l.* per acre, which he designated as the "best land in the parish." He had valued the whole land throughout the parish at its full value. Mr. Hackman confirmed Mr. M. Clure's statement. After some discussion among the magistrates, it was decided that the appellant's assessment should be reduced to 90*l.* Mr. Sleigh applied for costs, which were immediately granted, when the respondents gave notice of appeal to quarter sessions. The Sewage Manure Company's works were reduced 40*l.*; Mr. Hughes's brickfields 100*l.* Mr. Fitch's appeal, also Mr. Poupart's and Mr. Steele's, were adjourned to January 9, 1854.

VALUE OF FREEHOLD LAND FOR EXTRA-MURAL INTERMENTS.

FROM a report of the Burial Board of the parish of St. Mary, Islington, to the vestry, and from the statements of the several speakers at a meeting of the vestry, it appears that the Board had proposals of land for their extramural cemetery situate in the Hornsey-road, Finchley, Bushy-heath, Hanwell, Forbes-green, Hornsey, Totteridge, East Barnet, Pinner, Southall, Bagshot, Walton, near Brentwood, Romford, Bromley, and by the great Extramural Cemetery Association, and the London Necropolis and National Mausoleum Company.

The purchase-money required per acre varied in a most conflicting ratio, viz. 875*l.* 850*l.* 500*l.* 400*l.* 350*l.* 300*l.* 200*l.* and 105*l.*; but all the offers below 300*l.* an acre were considered ineligible either from the distance or the mixed tenure, or being within the prescribed distance.

The recommendation of the Board was to purchase 30 acres of the St. Pancras Burial Board of the latter's freehold estate called the Horse-shoe Farm, at Finchley, lying at a distance of two miles from the north end of Islington parish, at 300*l.* per acre, and attended with the further proviso, that the parish of St. Mary was to bear its proportion of the expenses in redeeming the land-tax upon the estate; and in the event of any future purchase or exchange of land adjoining the cemetery, the expenses to be borne proportionably; the expenses of interments to be assimilated by the two parishes; and that no Pancras man be buried in St. Mary's, or *vice versâ*, except under peculiar consideration. The chapels to be used alternately. That for the first twenty years a rent should be paid to St. Pancras, at the rate of three-eighths of the cost, and interest of the outlay for making and repairing the chapels and two main roads; and that afterwards the chapels and roads be kept up at the cost of both parishes in equal moieties.

Notices of Books.

The Architecture of the Farm. A series of designs for Farm-houses, Farmsteadings, Factor's Houses, and Labourers' Cottages, with descriptions. By JOHN STARFORTH, Architect. Blackwood and Sons: Edinburgh and London. 1853.

WE have had Mr. Starforth's work before us for some time, intending to treat at length the subject of farm and cottage building in continuation of previous observations on the same matters, which have appeared in our pages. More pressing topics have delayed the realization of the desire, and we think it better, therefore, at once, briefly to make known the scope of the work to our readers. It contains on 62 plates, lithographed (as sharply as etchings) plans, elevations, and details of cottages, proprietors' residences, and farmsteadings, with brief descriptions and estimates. The plans are for the most part very well arranged, and the elevations appropriate and good. We have been always anxious to impress on those who build farms, and labourers' cottages (with Sir Uvedale Price), that the difference in expense between good and bad forms, is comparatively trifling—the difference in their appearance immense. Mr. Starforth's volume will help to make this clear. The author says, in his preface, that he has spared "no pains to produce a practical and useful volume:" and it seems to us that he has succeeded in doing so.

We may take the opportunity to mention that the second volume of the new issue of the "Encyclopædia Britannica" (A. and C. Black, Edinburgh) contains two important articles bearing on the subject—agriculture, and agricultural chemistry. The designs which accompany the first, however, are very inferior.

Portable Buildings, designed and built by CHARLES F. BIELEFIELD. London: Rickerby, Cannon-street. 1853.

THIS little volume comprises views and plans of the buildings of waterproof papier-maché composition, before noticed in our pages, as patented by the well-known papier-maché manufacturer, Mr. Bielefield, for the colonies, in the form of villas, cottages, chapels, and stores. What next?

VARIORUM.

MR. NIESON, the well-known actuary, has published an "Analytical view of Railway Accidents," from which it is so far satisfactory to observe, that accidents from causes under the control of the companies, are rapidly diminishing. We have received a copy of a small pamphlet, for general distribution, at a cheap rate, containing a lecture on "Sanitary Reform," by the Rev. C. Girdlestone, M.A. rector of Kingswinford, delivered at Stourbridge, published for the Local Sanitary Association, and which might be turned to useful account in every direction. Messrs. Longman have issued a little "Stepping-stone to Roman History," by Fanny Parkhurst, somewhat in the style of Pinnock's Catechisms, and useful to put into the hands of the young. A preliminary report to the directors of the Crystal Palace at Sydenham, on the subject of a grand organ for the palace, gives us a notion of what may be done in music on a gigantic scale. The instrument *contemplated*, will be 140 feet high, 50 feet in depth, and stretch across the transept at its eastern end: it will cost 25,000*l.* What is more, it is calculated that it will *pay*, if the Apollonicon be any criterion, which in a few years *paid* to the tune of 40,000*l.* A grand organ would infuse life

into everything in and around the Crystal Palace. It seems to be a question whether the organ should be in the open palace itself, or in a limited and separate building for grand concerts, &c. It is suggested that both purposes may be served by an occasional enclosure of the transept, by gigantic crystal gates! An essay by Mr. G. J. Stevenson, of Lambeth, schoolmaster (Wesley of Paternoster-row, publisher), on the origin of "Alphabetical Characters," attributes these to "a divine origin." So long as we know that the "The Word" is "the true light that lighteneth every man that cometh into the world," perhaps we need not look beyond that divinity within us for the origin of either inborn or out-spoken words, or their alphabetical elements either; but whether Mr. Stevenson will regard us in this as *pro* or *con* in his argument, we know not. In a letter to Lord Palmerston as Home Secretary (no longer such, we regret to say), Mrs. Elizabeth Ruth Banister suggests "A new system of agriculture, drainage, and secondary punishment, for juvenile criminals," in which, amongst other national measures, she recommends the employment of criminals in such work as the production of compost from sewage for agricultural purposes, —a suggestive idea, which accords with our oft-reiterated urgeance of the propriety of causing criminals to work for their own support and the benefit of their country. While treating of railway matters, we have often remarked that the railway system could not be expected to reap its full and adequate fruits until the main trunks and branches of the system spread forth their tendril feeders throughout all parts of the country, not in the shape of costly and cumbrous subsidiary lines, but in some cheap and practicable form. Mr. W. B. Adams, engineer, has written some "Practical Remarks" on these and other subjects connected with railways, recently published by E. Wilson, of the Royal Exchange, which are worthy of attention. "Beauty and the Beast" (Dean and Son, London), is the first result of an endeavour by Miss Corner, aided by the pencil of Alfred Crowquill, to arrange some of the popular stories of our childhood for representation by children. "A Love Story," the truthful and pleasant history of the courtship and marriage of Dr. Dove (from Southey's "Doctor"), and "The Attic Philosopher in Paris," from the French of Emile Souvestre, form the 50th and 51st parts of Longman's "Traveller's Library," and are amongst the most agrecable of the series. M. Souvestre is an honour to French literature, and we cordially recommend his peep at the world from a garret, though it give but, as he says, "the common-place adventures of an unknown thinker in those twelve hostelries of Time—called Months.

Miscellanea.

The Kensington Conversazione.—The first of the Kensington conversazioni for this season was held on the 15th inst. at Great Campden House, kindly placed at the disposal of the committee by Mr. F. Wolley. There was an exceedingly interesting collection of water-colour drawings, including a large number by Mr. John Lewis, and the evening was passed very satisfactorily. A sight of the house itself is worth a day's journey. It is fitted up partly in Mediæval and partly in Renaissance style, with carved oak and tapestry, pictures, and ornamental ceilings. Cabinets and carvings and knicknacks fill every corner of its many twistings, and when the whole is brilliantly lighted, and further enlivened by pretty faces and modern millinery, the effect is very striking.

Progress in Galvanism.—The Rev. Nicholas Callan, of Maynooth College, who lately obtained a patent for inventing the means of protecting iron against damp, and published a paper on the large galvanic battery of that college, which he maintains to be the best in Europe, has discovered a new apparatus, it is said, for safely employing the mixed gases to produce the oxyhydrogen flame and lime light; a new voltameter, to which a common jet may be screwed, and the mixed gases inflamed as they issue from it, without the smallest risk of dangerous explosion, and by which the full decomposing effect of a hundred, or any number of cells, arranged in one series, may be produced, without exhausting the power of the battery more rapidly than if it only contained four cells.

The Model Lodging-house Movement.—The Bishop of Gloucester and Bristol has made repeated endeavours to excite a public and corporate interest in this movement at Bristol; and recently, in an address issued by his lordship on the subject, he invites approval and co-operation in the immediate realization of a scheme for erecting model lodging-houses in that city, referring all interested to Mr. Ridler, of High-street, bookseller. If sufficiently encouraging, a public meeting is to be called to organise an association.——At Worcester, also, an important and influential meeting has been held, Lord Ward in the chair, for the purpose of forming such an Association. Resolutions of a satisfactory character were unanimously passed, and a committee formed to carry the project into effect. A subscription was also entered into to meet preliminary expenses, and Messrs. Parker and Goldingham were appointed solicitors to the Association, and instructed to take measures to obtain a Royal Charter, an Act of Parliament, or letters patent, to carry out its objects.

Prevention of Boiler Explosions.—The editor of the *Nashville Banner*, says the *New York Tribune*, has seen and examined an invention, which he says puts it out of the power of an engineer to explode a boiler, either through negligence or purposely. This improvement provides the upper part of the boiler with two apertures, in addition to the safety-valve, and the bottom with one. These apertures are closed and opened by one cylinder and piston, and by two valves arranged to pass the water from the boiler on to the fire under it, when the steam gets to a given height, thus dampening down the fires and preventing explosion, should the safety-valve and engineers fail to perform their functions.

Kidderminster Public Rooms and Corn Exchange.—The foundation of the building intended for public rooms and a corn-exchange at Kidderminster having been got in, the first stone was laid on Wednesday, the 7th, with some ceremony, and a dinner afterwards celebrated the event. The site of the building is near the junction of Vicar-street, with the Oxford-road. The architects whose design was selected from a number of competing drawings sent in, are Messrs. Bidlake and Lovatt, of Wolverhampton, the architects of Bilston and Pontypool Town-halls and other public buildings. The edifice will contain a concert-hall, corn-exchange, library, news-room, lecture-room, and school of design. The style adopted is Italian. The building will be erected in red brick with white stone dressings, except the lower story of the front, which will be of white stone, rusticated. The front will be decorated with stone Corinthian pilasters, surmounted by cornice and balustrade, the latter partly of ornamental iron-work backed by stone. The entrance leads to a hall, at the extremity of which will be the entrance of the concert-room, an apartment 85 feet long, 46 feet wide, and 33 feet high, with a panelled ceiling. The Corn-exchange, alongside the music-hall, will be 59 feet long, 36 feet wide, and 20 feet to top of walls, and will have an open iron ornamental roof. It will be lighted by windows on one side and in the roof. The contractor and builder is Mr. John Thompson, of Kidderminster. The cost of the works will be about 6,000*l*.

Manchester Corporation Gas-works.—The demand for gas in Manchester has been steadily advancing, and has rendered necessary a yearly extension of the works, and at the beginning of the present year the gas committee decided upon a much larger extension of the works than any previous one, and with it an entire re-arrangement of the whole upon a better system. The new works are now in progress, and are expected to be completed before the commencement of the winter season of 1854. The profits of the gas-making have for years past been devoted to the carrying out of extensive and important improvements in the town. The corporation has obtained powers from Parliament to appropriate for ten years one moiety of the gas profits, which would otherwise be expended on improvements in the city, towards the payment of the annual expenses of obtaining an abundant supply of water for the whole city. It is questionable how far it is proper to make the consumers of gas pay a larger price in order that the profits may be devoted to public improvements, and some think that a rate laid upon all the members of the community would be a more equitable mode of providing funds to carry out improvements for the benefit of all. The present charge for gas by the meter is 5s. per thousand cubic feet, when the annual consumption is under 200,000 cubic feet; for larger quantities there is a scale of discounts, ranging from 2½ per cent. from amounts between 200,000 feet and 400,000 feet, to 20 per cent. for 5,000,000 feet and upwards. The London Gas Companies are charging 4s. per thousand feet, whilst at other places the charge is very considerably lower; for instance, the Whitehaven Gaslight Company charge only 2s. and the Sheffield Company 3s. to all consumers.

Ariel's Girdle: a Tow-cable across the Atlantic.—We like to see the speculative faculties at work among the multitude, even though the efflorescence be somewhat barren,—not very likely to bear available or practicable fruit,—or even a little wild in its luxuriance. A correspondent, "Revilo," proposes "an entirely new system of navigation upon the great ocean routes," on "the advantages" of which we need not enlarge. "I propose," he says, "that upon some convenient coast point of the United Kingdom, say upon the coast of Donegal, a winding-machine be erected *sufficiently firm* [aye, there's the rub!], and turned by an engine of *five thousand horse power*, a similar one being erected, for example, at New York. The next element of the apparatus would be a cable of the best material, 8,000 miles in length [!] to act as an endless band passing over the two machines. It next being mutually arranged by those directing to despatch their vessels in regular succession, they would be attached to the moving cable at intervals of one mile or less, according to the state of trade, of course, by some simple apparatus capable of detaching the cable if necessary. Being so disposed, the vessels would sustain the cable, while the trifling deflection would allow any vessel sailing across the route to pass." The coolness of this proposal is inimitable.

Advantage of extending Quays and deepening Rivers.—The growth of Glasgow as a port is instructive. In 1813, when the quay accommodation was 941 feet, the revenue was 5,169*l*. Twenty years later the quay-walls had been extended to between 3,000 and 4,000 feet, and the revenue had increased to about 25,000*l*. In 1843 the length of the quays had been increased to upwards of 7,000 feet, and the revenue to upwards of 40,000*l*. In 1847, with only an addition of 600 feet to the quays, the revenue had reached 59,000*l*. In 1851 the quay-walls had been extended to 10,873 feet, and the revenue reached 68,875*l*. which was increased in 1852 to 76,077*l*. In 1816 the depth of water in the river, at the top of spring-tides, was only 9½ feet, while during the last year the number of vessels which arrived at the harbour, drawing 10 feet water and upwards to 20 feet, was 1,179; of which 189 drew 15 feet and upwards. In 1852 the Clyde Trust revenue was 76,077*l*. The expenditure on new works and improvements in the river and harbour in 1851 was 25,739*l*. and in 1852 it had increased to 52,466*l*. At last meeting of the trustees, 25,000*l*. were voted from the profits of the trust to the fund for removal of tolls and pontages within the municipality. At same meeting the board agreed to apply to Parliament for power to borrow 700,000*l*. wherewith to make further improvements in the harbour. The present surplus revenue of the river will pay the interest of that sum.

Brock's Monument, Canada.—A correspondent, with reference to our account of laying the first stone of the new monument to the late Major-general Brock, on Queenston Heights, has sent us a sketch of the original monument, which he made in 1840, about three months after the attempt to blow up the building by gunpowder. The cracks on the shattered column, from the top to the bottom of the building, varied from 1 inch to 6 inches in width all round: there was a bulge on the south side of the shaft to the extent of about 10 inches, and one on the north side about 6 inches. The monument, which was of cut stone, was erected on the exact spot where Brock fell. Queenston Heights are situated half-way between the town of Niagara and the celebrated Falls, or about 40 miles from Toronto.

Preston Town-hall Competition.—Forty-nine competitors have sent designs for the proposed Town-hall, set forth in 450 drawings. The *Preston Guardian* says,—"The committee will doubtless avail themselves of the best and most disinterested advice from skilful judges, and they will select their plan not simply for its beauty, but also for its economy and its fitness for the purposes required. To anticipate their decision is not within our province. We shall content ourselves with merely offering to our readers the impressions produced upon us by a somewhat cursory inspection of the drawings. In the first place, it is curious to observe the great diversity of style chosen by the different exhibitors. There is every possible variety of edifice, from the light and elegant modern Italian, down to the most decided Gothic: even the Elizabethan is not unrepresented. Some of the designers appear to have entirely forgotten the purposes of the plan, and while the results of their labours, if carried into effect, would make an admirable block of shops, or an insurance office, or a market, or a railway station, or a Manchester warehouse, or a church, or almshouses, they are certainly not very suggestive of the thing wanted, namely, a town-hall." The writer mentions designs by Messrs. Banks and Barry, Mr. Mitchell, Mr. Fripp, Mr. Goodchild, Messrs. Clegg and Knowles, Messrs. Lawford and Henneker, and Mr. Latham. The designs are now open to the public.

The Builder.

SATURDAY, DECEMBER 31, 1853.

THE year and our volume have come to an end on the same day. Looking back to the closing number of several of our previous volumes, wherein we have usually referred to their contents, offered our thanks for assistance, made promises for the future, and expressed whatever feeling animated us at the moment, we had half resolved not to use the same theme again, but to let our readers take it all for granted. When it came to the push, however, we really could not abandon it. It was like giving up a hearty shake of the hand,—going away without a "good bye,"—and we must therefore indulge our weakness, though we run the risk of a "pshaw," or a "pish," from some. There is great safety in silence, no doubt; but there is no heartiness in it; and we must confess to a yearning for kindly feeling, a dash of sentiment—call it sentimentality if you like,—and a desire to be associated occasionally in the minds of our readers with thoughts nearer home than those induced only by professional dissertations, or the record of useful facts. The occasion to show this feeling occurs but rarely, and therefore it is that we cannot give up the opportunity of briefly expressing it which the close of the year affords. Rapidly has it passed away, converting will-bes into has-beens, and rendering impossible many of our best intentions. Truly,—

"Things incomplete, and purposes betrayed,
Make sadder transits o'er Truth's mystic glass
Than noblest objects utterly decayed."

Our younger readers will do well to remember that every succeeding year goes faster than the last, and that the present moment is the time for exertion, the time for thankfulness, the time for enjoyment:

"Arise! for the day is passing,
While you lie dreaming on;
Your brothers are cased in armour,
And forth to the fight are gone;
Your place in the ranks awaits you;
Each man has a part to play;
The past and the future are nothing
In the face of the stern to-day."

And where seek enjoyment? "I have lived to know," says Adam Clarke, "that the greatest secret of human happiness is this—never suffer your energies to stagnate. The old adage of too many irons in the fire conveys an untruth. You cannot have too many—poker, tongs and all—keep them all going." This may not be all the truth, but there is a vast deal of truth in it. We are not of those who say, "The past and the future are *nothing*," or that—

"The Past
Is but an emptied flask, and the rich Future
A bottle yet uncorked."

The past is still full—full of great teaching,—but its value is in its application to the present, and to that which the present holds in itself—the future. Amongst its best teachings, is that of the usefulness of the beautiful.

"We should do our utmost," says Goethe, "to encourage the Beautiful, for the Useful encourages itself." Let it be fully understood that the beautiful *is* useful, and it will then therefore need less care. 'Mid

"The glare of the brick,
The machinery click,"

we may still keep the mind open to poetical impressions, and strive for a perception of the graceful: in fact, without this, the more serious business of life will not be so well done:—

"Delightsome flowers and wholesome fruit
Are nourished from the self-same root."

We are rambling, however, with a vengeance, and must end. A comparison between this and preceding volumes will show that there has been no falling off in the efforts to render the *Builder* worthy of its purposes,—we hope the reverse; and we might point to some essays of great value by able writers and some illustrations of considerable excellence. The endeavours which have been made to place truthfully before the public the miserable condition of the dwellings into which thousands of our fellow creatures are crowded, the distressing and abasing circumstances under which they are forced to live, and the pressing necessity which exists for the provision of proper dwelling-places, have obtained the commendation of some whose good opinion is a great reward. The greatest would be to know that the object of them had been to any extent obtained. In dealing with this question we have been forced to say rather what was true than what was pleasant.

"Live *with* your century," writes Schiller, "but be not its creature; bestow upon your contemporaries not what they *praise*, but what they *need*." We have sought humbly to act on this advice, and we will not relax in our endeavours.

NOTES ON THE HISTORY AND CONDITION OF THE BUILDING TRADES.

MASONS.*

In our two previous articles we gave a cursory glance at *history* in connection with the mason trade. In this paper we mean to confine our remarks to its present *condition*. The subjects we especially wish to take up may be classed in this way:—First, the statistics of the trade; second, the trades unions and friendly societies connected with it; and third, the influence it exercises on the workmen's health.

We believe there are somewhere about 3,000 masons in London. We have no authentic proof to offer for the statement except the united testimony of some of the best informed among the masons themselves. In Mr. Bohn's "Pictorial Handbook of London," the number is stated at 3,471. The term of apprenticeship ranges from five to seven years. But that time-honoured custom seems to have fallen into disuse and into contempt on the part of the workmen as well as their employers. At some future opportunity we may perhaps discuss the question of apprenticeships at length; for it is a subject of vital importance to the interests of the working classes. The wages of masons are from 5s. to 5s. 6d. per day. For more than thirty years there has been little or no fluctuation in the rate of wages. At the building of Vauxhall-bridge, where one of our informants began his labours in London, the day's wages were exactly 5s per day; and they have stood at that rate pretty evenly up to this year, when there has been a slight though general advance. Sometimes the wages have fallen to 28s. per week, but that was in a period of unusual depression. On other occasions, where piecework was given to the men, they not unfrequently realised 3*l.* per week; but these cases were rare. On the whole, we believe that masons are now better off than they were during any part of their history since the termination of the war; their wages are generally higher and their hours of labour are shorter, for they mostly leave off work on Saturdays at four o'clock—a system of work recently introduced into the trade. Throughout the winter months the London masons work after dusk by gas-light; and thus their wages suffer no diminution. But in the country the men suffer their wages to be reduced 2s. per week rather than work by candlelight; and we are informed as a curious circumstance that in London, an attempt to stop this work and reduce the wages would produce an immediate strike, while in the country an attempt to pay the men their full day's wages and exact their full day's work would produce an immediate strike too! Masons supply their own tools. A good average kit may be obtained for 2*l.*: and we question if many of the London masons possess a more valuable stock. The masters sometimes pay for sharpening the tools: some only pay for sharpening the tools used on sandstone, and some do not pay for this at all. This subject, we may add, has frequently been the cause of much angry feeling, and it was one of the grievances preferred by the masons at the Houses of Parliament against their employers.

It is now upwards of twenty years since the masons of England formed themselves into a general and national trades union. Its head quarters shifted at stated periods, all over the principal towns in the country; at one time in London, at another in Liverpool, or in Manchester, and we believe at Birmingham. The number of members we have heard computed at 8,000. The rate of subscription is 6d. per week, or 26s. per annum—a rate sufficient to insure a man's life for 100*l.* sterling; or at least any man's life but a mason's. In addition to this there has always been a local union in London, founded on somewhat different principles; but we never heard of its being the cause of a regular organization among the masons, or of a severe strike. It was far different, however, in the other case. The general union was not in existence eighteen months before its progress was signalized by a severe and protracted strike of the London masons.

This was called the "Document strike." The master builders had got information respecting the great organization of the masons throughout the country, and they soon perceived the importance of keeping it in check. They peremptorily enjoined their foremen to dismiss all those hands who were known or suspected to be connected with it. Had they confined themselves to this purely negative course of action, it is probable that the spirit of resistance and opposition afterwards so strongly developed, would have remained in peaceful oblivion at the "Bricklayers' Arms," or the "Hole in the Wall," in Fleet-street. But they took a positive method of expressing their disapproval of the workmen's combination. A *document* was prepared, setting forth in the form of a declaration, that the deponent was not at that time connected with the general or local, or any other trades union, of whatsoever stamp or denomination; and this document was sent round to every mason's shed in London, for the signatures of the men. Its influences were soon felt. It created a perfect storm. A general meeting of the trade was called. Furious speeches were delivered against the tyranny and despotism of the masters. The foremen were expelled from the meeting; and their names were struck off the roll of the society. At length there was a general strike throughout the trade. It was kept up for nearly twelve months, and ended as strikes usually end, by producing much injury to both sides, and leaving the subject matter in a worse position than it stood in at first. One curious feature, indeed, was elicited during the course of this strike, which the masters pronounced scandalous, but which seems to us a thing that was only to be expected. Many of the masons signed the document, and preserved their places. But they still continued to be members of the union, and to pay for its support. They justified this course under the plea of expediency, or by the pressure of necessity. "They stooped to conquer," they said; but the great misfortune was that they were required to do either the one or the other. Since that time, there have been some other strikes, but we need only refer to one—the celebrated strike of the masons at the Houses of Parliament.

Messrs. Grissell and Peto, the builders of the New Houses of Parliament, had in their employment an assistant whose name has since become well known in connection with this strike—George Allen, foreman of the masons. He was a man, it would appear, of good professional character, but of a hasty temper and strong passions. He is reported to have answered the application of a mason to attend his mother's funeral in Manchester, with coarse words. On another occasion, he ordered a poor labourer, whose leg had been fractured in the service to leave the premises, under a threat of being committed to the police. These charges at least were repeatedly made; and, at all events, his manner had in some way given grievous offence to the masons under his charge, and

* See pp. 709, 733, *ante*.

they resolved to put a stop to it. They held a meeting at the Paviors' Arms, Westminster, and addressed through a secretary a letter to their employers, which in substance consisted of a mild remonstrance against the conduct of their foreman. The answer of the employers was couched in equally courteous terms; but they took upon them to justify or excuse his proceedings. They had made inquiry, they said, into the circumstances of which their men complained. They found their representations were not correct. They entered into these explanations, in order to preserve peace and good feeling among the men. But they wished it to be clearly understood, that they would not be subject to such interference in future. The men put together their evidence, and in another letter asked for a personal interview. The interview took place, and closed in peace. The men congratulated each other on the extent of their success; and, indeed, it seemed they had a right to congratulate each other, for from that time the foreman appears to have acted with greater prudence and caution towards them. But at the end of three months the disagreement was even greater than before. Another letter was written. For the first time, the men began to use threatening language. "Allen," they said, "has assumed a course of despotic tyranny over us. We have been tampered with by him long—far too long. We have borne the yoke until we can bear it no longer. And we have come to the determination that we will work no longer under him than Saturday." The reply was equally significant; but it was shorter, and more decisive. Messrs. Grissell and Peto were sorry the masons did not appreciate the consideration they had always experienced at their hands. As far as Mr. Allen was concerned, they did not consider the circumstances such as would warrant their appointing another foreman. The result was soon apparent. On the Saturday evening, the men demanded and received payment of the "back day," or the day's wages usually left in their employers' hands. On Monday, the 13th September, 1841, the whole of the masons at work on the Houses of Parliament "turned out," and then began the great strike.

It was asserted by those opposed to the men, that an understanding had been come to that only so much work should be done in a given time, and that any man not conforming to the rules laid down, should be either fined or sent to Coventry. This led to considerable altercation between the foreman and the men, as it was his province alone to take serious notice of it, and to discharge those men who were guilty of it. This he was often necessitated to do, and hence some of the ill feeling which arose between him and the men. The employers were anxious to reconcile the difficulties, but although several points were conceded, nothing would satisfy them at last but the discharge of the foreman. They felt this was so far an attempt to subvert the very foundation of their authority, that they could not concede it to the workmen. They of course reasoned,—If we discharge Allen, what security should we have that any other foreman will do his duty to us, and what security will another foreman have in our support? The successful execution of any contract mainly depends on the talent and vigilance of the foreman: it is the labour department in which the risk is mainly concerned. A foreman who does his duty to his employers, is rarely a favourite with the workmen. In a large work, in particular, unless the cost of the labour can be controlled, it is impossible to undertake work by contract, and it will easily be seen how much the public at large are concerned in the proper authority a master should have over the labour of his workmen. We believe that half the bankrupt builders become so by the *labour*, and not by the material. It is the most difficult thing which the builder has to contend with—to get, without coercion, a fair day's work from his workmen. The employers felt it necessary, therefore, to risk the consequences of a strike, rather than sacrifice their prerogative. Finally, there is no more painful position a man can be placed in than such a position as Allen held. A thousand things annoy him. The stones do not turn out well. A moulding is chipped. A carving is defaced. A lintel is broken. The inspector is constantly running him close up. His employers talk eternally about the lowness of their contract. They look to him to economise their wages, and their material. He must be the first man on the ground, and he must be the last. His mind is tortured by unworkable drawings and scantlings that will not come in. Above all, he has to do with men who are often filled with prejudices and hostile intentions. He has the unhappy task of trying to reconcile two conflicting interests; and God help him! for his task is sometimes a severe one.

The Houses of Parliament were now at a dead stop. The Commissioners of Woods and Works granted the builders a suspension of their contract. They availed themselves of the opportunity with consummate skill. Agents were despatched all over the country to procure fresh masons. Advertisements and placards were freely distributed throughout the principal towns in England, in Wales, and in Scotland. Squads of country masons came pouring in at every train. The workmen, though anticipating this movement, were scarcely prepared for it. But they did their best. They despatched opposing agents, issued counter placards, and called upon their countrymen not to be deceived by paltry subterfuges. At last they held a public meeting. On the 5th of November, a great gathering took place at the Crown and Anchor. It was computed that 4,000 persons were present. Hundreds remained outside; hundreds went away for want of room. Mr. Wakley, M.P. gave his attendance, and spoke in favour of their union. Resolutions were passed censuring the conduct of their master and his foreman. Assurances of sympathy and of support came in from several country towns. Meanwhile the press had taken up the question. The *Times* thundered against the men. The *Sun* made a direct attack on the employers. It assumed something of a political aspect. Sir Robert Peel's Government was in power. The Chartist movement was approaching its climax. It was whispered by some of the most sanguine malcontents that the Tory Government would soon be smashed, and that their successors would employ the masons to finish the Houses. A daily paper was to be soon brought out by Bronterre O'Brien, which would also smash the *Times*. The excitement spread to the provinces. The quarrymen in the granite quarries of the Dartmoor hills refused to work because Grisell and Peto used the stone. Nelson's monument was stopped in its progress. *Punch* reported that the next generation would see the pedestal without looking over the paling. From this period the interest began to flag. Winter had come round, and the masons were ill prepared for its reception. They could resist no longer: provisions were dear; the money was expended; their old places were filled up with natives of Scotland and with Welshmen; and they could never hope to return there. After a few more months of feeble opposition, many of them left London in search of employment.

Thus ended the celebrated strike at the new Houses of Parliament, which lasted eight months, and which cost the union, it is said, 5,000*l.* in sterling money, and the men 10,000*l.* in lost labour, and which was productive of no good whatever, but, on the contrary, an incalculable amount of evil. Such a strike, we hope, will never occur again in London. It opened a breach between employers and workmen, and especially between foremen and journeymen, which ten years of uninterrupted prosperity has been scarcely sufficient to heal. We wish the working classes in the north of England, who are now pursuing a similar course with much greater recklessness of consequences, would take a lesson from the history of this unhappy feud. And let us give them another note of warning. During the twenty years of its existence the masons' union, we are credibly informed, has spent upwards of 100,000*l.*; but their wages have remained at the same uninterrupted level.

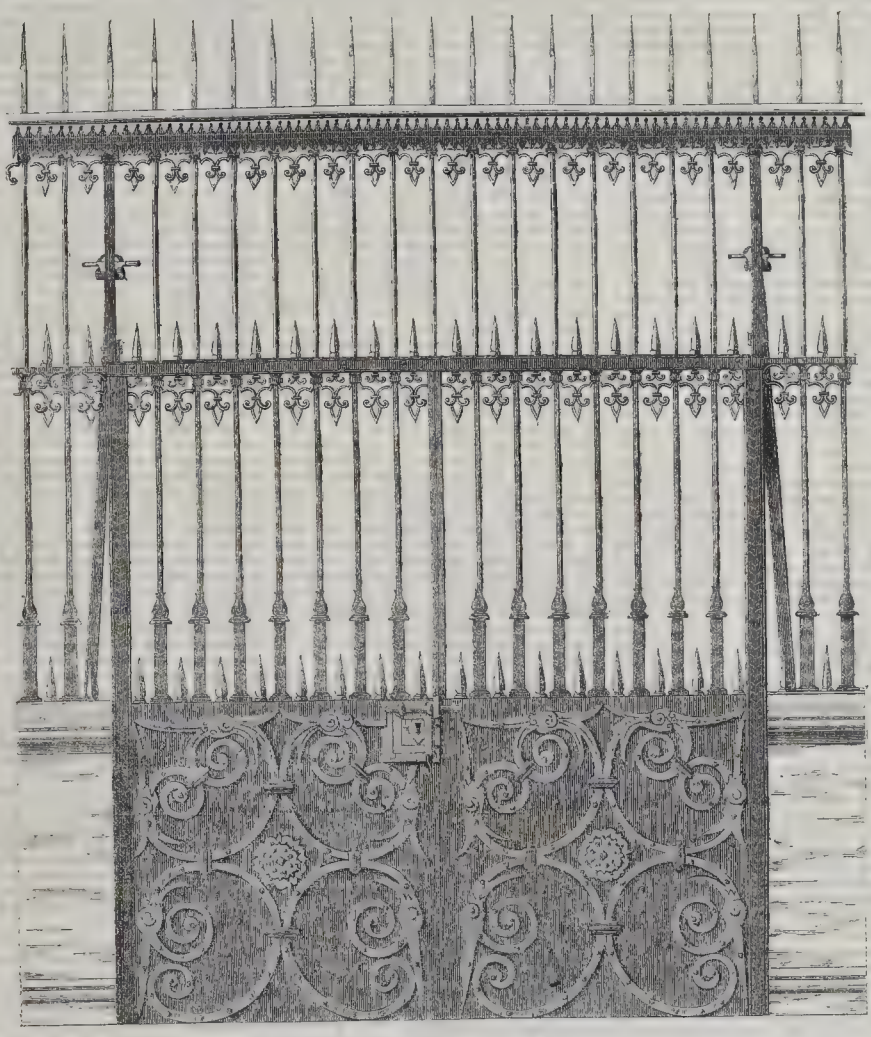
We must now glance at the influence which this trade exercises on the health of the operatives. It is now, we hope, tolerably well known that a peculiarly fatal disease belongs to this trade,—a disease originating from the injurious action of stone-dust on the lungs. We do not think it will be out of place here to give the masons a concise account of this singularly fatal disease, which we boldly assert is of more consequence to them than a knowledge of the principles of combination.

The term PHTHISIS (pronounced *tisis*, derived from a Greek verb signifying to consume), is defined as a wasting of the frame from whatever cause. But in our day the term is restricted to the disease commonly called "pulmonary consumption." Numerous causes predispose to this disease,—hereditary disposition, humidity of the climate, colds, dissipation, in short, anything which operates as a check to the perspiration. But the great cause of consumption, so far as we are concerned, is, that of the inhalation of dust and foreign particles of matter into the air-passages and the lungs, where they excite inflammation, develope tubercules, impede the respiration, produce wasting and decay of the whole system, and, finally, are the premature cause of death. The progress of this disease in the case of the mason is easily traced. A strong, healthy young man enters the shed, and assumes the apron and tools. Five years pass away, during which time he has, for ten hours a day, six days a week, methodically and systematically inhaled an atmosphere surcharged with stone dust. The symptoms of tubercular phthisis now begin to appear. A short dry cough is perceived, which at length becomes habitual, and is accompanied by a frothy expectoration. Gradually the air-passages become impeded, and the respiration is checked. A sense of straitness, accompanied with oppression at the chest, is experienced. The body becomes gradually leaner. A languid indolence is now felt throughout the entire frame; and the mind becomes depressed and heavy. In this incipient stage the patient may continne for many years. But his constitution is undermined. He is more than usually susceptible of the influences of cold. His expectoration increases, and the spit becomes thicker and more viscid. At length, in other ten years, the end draws near. Injured nature can no longer maintain the unequal warfare. Had some remedy been provided, some preventive made use of in the early stages of the disease, there would have been grounds for hope. But now all hope is lost. A severe and insufferable pain is now felt on one side. The pulse becomes full, hard, and frequent. Hectic fever supervenes. The patient has become a walking skeleton. His countenance is altered. His cheek bones project, his eyes become hollow, his extremities become cold; and then is seen the painful and melancholy spectacle of a strong man stricken down in the bloom of his manhood by the terrible and insidious ravages of a disease peculiar to his business.*

We confess we can scarcely write on this subject with ordinary feelings. How it comes that there exists so much ignorance among the men, so much neglect among their masters, we cannot tell; but it is certain that the same usages exist in the trade as existed a hundred years back. Close sheds,—the closer, it would seem, the better,—are still the universal rule. Now it seems plain, that nothing can be more injurious than a confined atmosphere, when that atmosphere is attended with effects so fatal. Yet you will scarcely dissuade a mason out of the belief that the closer his doors are the greater his comfort. We need scarcely say that to all sufferers from this disease, a strict attention to diet, which should be generous; to clothing, which should be warm and carefully adapted to the season; and to the preservation of temperate habits, is absolutely indispensable. It is proper to state, that the painful effects we have mentioned are chiefly referrible to the working of sandstone. Limestone is by no means so injurious in its influences. Some of the harder limestones, indeed, such as magnesian limestone used at the Houses of Parliament, are scarcely to be distinguished from sandstone in this respect. But the soft oolites of Portland and Caen act like so much chalk, and seem to be perfectly soluble in the juices of the body. Although we do not profess to assign the true physiological reason of this, yet we may humbly suggest, as a proximate cause of the

* In the Anatomical Museum of the Edinburgh College are the lungs of a mason who died at the age of forty-five, of phthisis. The air passages, as shown by the dissection, were literally blocked up with fine particles of dust,—the accumulation of many years. For some account of the disease among the Edinburgh masons, see "Builder," No. 537, vol. x.

IRON ENCLOSURE AND GATE, ST. MARTIN'S, COLOGNE.



non-injurious effects of limestone, its solubility in the hydrochloric acid which exists in the secretions of the mucous lining of the air passages, and of the carbonic acid which exists in the saliva.

We must not dismiss the subject without some reference to the moustache.* We were glad to see on our visit to two or three different builders, that the London masons are now growing their beards pretty generally, that the fashion is gaining ground, and will soon in all probability become universal. The simple action of the moustache in such cases is that of a respirator, or more correctly speaking, a species of sieve, for intercepting the passage of the dust. Besides the respirator having the effect of keeping the lungs clear of foreign particles, it has also the great advantage of preserving a steady and equable warmth around the orifice of the air passages. But we have lately dwelt so much on this natural sanitary agent, that any further enlargement would seem out of place.

* See, for an account of the origin of the moustache movement, No. 503, *ante*.

IRON GATE, &c. AT ST. MARTIN'S, COLOGNE.

The enclosure, with gate, represented by our engraving, is an exceedingly interesting specimen of iron work, simple in construction, and good in effect. The drawing was originally contributed to the *Revue Generale de l'Architecture*,* by M. Desjardins, architect, of Lyons, who considers it a work of the sixteenth century, though showing traces of Gothic art. The ornamental bands (of plate iron) on the solid part of the gates, has the aspect of work of earlier date, and may have been imitated from a more ancient example. The gates open as high as the intermediate cross-rail only: above this, the whole is fixed. The bars below the cross-rail stand square with the face of the stone plinth, but above the rail the bars are twisted, so as to stand diagonally. The cornice is formed of plate iron. The spike-heads have the form of the fleur-de-lis in profile.

* The *Revue Generale de l'Architecture* is still carried on by M. Cæsar Daly with vigour and ability. It is a very valuable work.

REMARKS ON MR. RUSKIN'S LECTURES ON DOMESTIC ARCHITECTURE AND MODERN PAINTING.

In mathematical or direct questions not only is dogmatism perfectly allowable, but natural to any case where direct proof is obtainable; it being easy to arrive at a finite conclusion, where it is perfectly impossible from the determinate value of the figures or facts adduced to arrive at any other; and, consequently, we should treat the individual as a fitting subject for a commission of lunacy who gravely asserted that a straight line was not the most immediate connection between two given points; or that two added to or multiplied by two, made aught else than four. In each of these cases the conclusion is self-evident and unconditional, the question being one of an absolute nature, and consequently, open to direct proof. But no question of an abstract nature can be considered in this light. Figures represent facts or material bodies, whilst abstract conclusions are but the representatives of ideas. With these there are no *definite* values to deal with, and no

aggregate of ideas could incontrovertibly and positively determine what true taste in art is. It is not sufficient that an art production should be generally esteemed beautiful, or in perfectly correct taste. That it is considered so, is no determinate proof of its being so; and the best proof of this is, the remarkable changes which general ideas of taste are continually undergoing.

In the case of the arithmetician, he would, in fact, be dealing with material bodies of unchangeable value: the artist, on the contrary, must take as his standard of taste that which an educated sense of perception defines to him as such, and as the amount and character of this perception will vary with the idiosyncrasy of the individual, according to the peculiar development of the sense, so is it natural that each, seeing as it were through a different medium, should arrive at a different result.

This may be well illustrated by reference to the lecturer's own art deities, Mr. Turner and Mr. Millais. I do not intend entering into the question of the merits of the two painters: must humbly submit to the candid consideration of your readers, that if there exist but one determined, unalterable, and finite standard of true taste, either the one or the other of Mr. Ruskin's art-gods and arch-artists must hereafter, in the public estimation at least, share the lot of the fallen angels.

The foregoing remark has been called forth by certain views and opinions expressed by Mr. Ruskin, in his recent lectures, in Edinburgh, on Domestic Architecture and Modern Painting. In his first lecture on Modern Domestic Architecture, according to the detailed report of them in the *Scottish Press*, Mr. Ruskin speaks of a certain prevalent character of fenestration; and in advocating the superiority of the Gothic arch over the lintel, in the construction of windows, remarks, that whilst the former has withstood the shock of the earthquake, the latter has, within a very limited period, exhibited a ruinous condition. Now I submit, that this is hardly a fair comparison, and like many others of his views, is *ex parte* and prejudiced. In the first place, Mr. Ruskin does not inform us of the respective characters of the buildings to which he alludes. It is very possible that the one which he so much condemns may have been of that description of which we see, unfortunately, such numerous instances in almost every street in London—a sort of dose habitation,—to be taken immediately. The Gothic structure may, on the contrary, be a building of a much stronger character, and far more durably constructed: that it was a thoroughly well-constructed edifice, is evident from the fact of its having escaped uninjured.

If we judge correctly, ornamentation should be estimated by its fitness, and not, as Mr. Ruskin appears to value it—*i. e.*, as totally independent of the end to which it is destined.

We ought not to judge of Greek art by the standard of Gothic art, but learn to appreciate each by its own intrinsic merits and beauties. Why should we reject the grape because it does not possess the flavour of the peach; or deny the merits of Port because it has not the briskness and piquancy of Champagne? To judge correctly, we must regard things and questions in their own natural light, and not view them through a medium which, whilst it enhances the merits of the one, destroys and falsifies the other. Mr. Ruskin, in quoting certain authorities to support his views, instances the beautiful line of Scott:—

"Each purpled peak—each flinty spire,"

and then goes on to say how much the beauty of the thought and verse would have suffered had Scott substituted for "spire" the word "pediment," and made the line run thus:—

"Each purpled peak—each flinty pediment."

Now against such one-sided, fallacious, and unjust reasoning as this, the commonest understanding must revolt. Every one must know that Scott, in writing the line, was perfectly aware that the pointed character of the spire rendered it a term peculiarly fitting and applicable in describing wild and rugged grandeur of scenery, and that the term pediment would have been inapplicable and absurdly misplaced, and in fact, would have been far better translated from Greek to Gothic by using the term "gable-end," which Mr. Ruskin, if acquainted with his subject, should have known perfectly well to be the Gothic substitute for the Greek "pediment." Let us suppose for a moment an inverse reasoning, and adopt the argument on Mr. Ruskin's system of an admirer of Classic in lieu of Gothic architecture. How well suited to his purpose would he have found those noble lines in the fourth canto of Byron's "Childe Harold," where he describes St. Peter's at Rome with such fervour:—

"But lo! the dome, the vast and wondrous dome,
What could be
Of a sublimer aspect?"

In this case, to cast the stigma of ridicule upon a style of art to which he was opposed, supposing the said admirer of the classic school were to substitute for "dome" the term "gable-end," and make the line read thus:—

"But lo! the 'gable-end,' the vast and wondrous 'gable-end;'"—

and to bring the absurdity of such a transformation as a decisive proof of the superlative inferiority and "inexpressible imbecility" of Gothic art! If the inspiration of high poetic ideas and feelings be a test of the truth of art, classic architecture need occupy no secondary rank, and in support of this, we will again quote from "Childe Harold." What can exceed the beauty of these lines on the Coliseum:—

"Rise of nobler days and noblest arts,
Deserted yet perfect, with its circle spreads
A holy shade, appealing to *all hearts*,
To art a model."

And yet, in Mr. Ruskin's idea, the art which inspired these noble thoughts is a falsehood and a barbarism, simply because, in his opinion, "Gothicism" is the sole element of architectural beauty. Oh! ye poor misguided followers of Greek art,—ye chasers of phantoms,—ye victims of delusion,—ye art heretics,—would ye have immortality?—then renounce at once your heresies,—apostasise and embrace our lecturer's "doxy," and follow in the path he points out as the sole road to fame,—discard the pediment, repudiate the frieze, and crown your columns with a spire, under penalty of being deemed followers of false doctrines, worshippers of delusions, or propagandists of deliberate falsehood!

Of the lecturer's remarks on the comparative merits of the Greek and Gothic *architectural* sculptors, we will notice only, *en passant*, that he claims for the Gothic sculpture the advantage of variety. Here again he has made an unjust and unfair comparison, as no one having the slightest pretensions to an acquaintance with Greek architecture, will for a moment pretend that variety is one of its characteristics: on the contrary, its pure massiveness and strongly-marked outline is entirely inconsonant with variety, which would necessarily disturb its character of harmony and severe beauty. Now this very character of variety is an almost principal attribute of the Gothic style, and serves, by its complexity, to create the vagueness and mystery which are such marked features in Gothic architecture. In fact, that which lends one of the greatest charms to the Gothic, would entirely destroy the grand simplicity in which the Greek style is so pre-eminent.

Mr. Ruskin might as well decry the sublime grandeur of the night, for not being lighted with the thousand various tints which constitute the charm of mid-day splendour. Each has its own particular aspect, and that which constitutes the charm of the one, would certainly destroy it in the other. Each has its separate standard, by which alone it can be correctly judged, and by which test alone we can fairly decide upon its merits in respect of beauty.

Mr. Ruskin referred also in his lectures to the ridicule cast by Cervantes upon the Beautiful and True: but he seems to forget that, at the time Cervantes wrote his inimitable romance, the step had been taken which alone separates the sublime from the ridiculous; and that, beyond a doubt, the caustic satire of the writer restored the ideas of truth and beauty to healthy channels by administering an invigorating and wholesome tonic. Doubtless, the means were severe; but the disease was desperate, and required vigorous remedies; for to spare the patient would have been to increase the malady, and resolve a temporary derangement into a chronic disorder.

Mr. Ruskin, however, spoke with much natural warmth and enthusiasm, when he remarked that no difficulty, unless physically insurmountable, should prevent our attempting to perform what we know to be our duty. He said well, "It is the work, and not the difficulty that is our business."

We should, indeed—

"Be up and doing,
With a heart for any fate;
Still achieving—still pursuing—
Learn to labour and to wait."

And in the broad field of truth there is ample room for us all to act without jostling one another: each of us will most truly benefit his species by *rightly* and *properly* advancing his own interests.

In conclusion, permit me to remark as a useful check to dogmatism in abstract questions, that tyranny and despotism are not suited to the government of the realm of art, nor can the ukases of an autocrat hold exclusive sway over taste.

W. M. B.

CITY IMPROVEMENT ACTS AND THE COAL TAX.

Among the subjects which will be found treated of in those uninviting folios, our *Statutes at Large*, that of the improvement of the buildings and streets of the city of London occupies no inconsiderable part. The pending inquiry before the Corporation Commissioners, and the examination of some of those who are conversant with the City rights and claims, and particularly the evidence of Mr. Pulling, the barrister, make these Acts of Parliament matter of public interest. Ever since the reign of Charles II., when Parliament was called upon specially to legislate for the speedy restoration of the city of London from the ruins of the Great Fire, and for the "better regulation, uniformity, and gracefulness of its buildings," extraordinary powers have, from time to time, been asked for, and freely conceded, to the lord mayor, aldermen, and common council, to levy taxes on the good folk of London, for the purpose of city improvements. "Old King Coal," who has so industriously, and so impartially, during these two centuries, persevered in blackening the buildings of the metropolis, has, by a sort of wild justice, been forced to pay heavy tribute towards these improvements, and with very short intervals from the year 1667 to the present time. The *black nuggets* have really been made to do good service to the corporation. From the frequency of applications to Parliament by the authorities at Guildhall, for further powers, and the immense sums which have thus been raised with a view to beautify and improve London, one might be induced to think that opportunities have not been wanting for making it a really magnificent city—rising from the banks of the noble river which flows through it, in architectural beauty, as, in commercial importance, the first city in the world; and if, indeed, we look to the provisions of the statutes for regulating the rebuilding of this city, when the ravages of the Great Fire had left space which could be so advantageously used for this purpose, it becomes difficult to conceive how London, situated as it is, on a rising ground, on the banks of such a river, with unrivalled building facilities, with all the architectural talent of Europe at the command of its municipality, and immense funds, devoted by Parliament for the purpose, could avoid being the most magnificent and perfect of modern cities.

The Fire of London destroyed, with much personal wealth, a mass of habitations, where disease and crime, squalor and wretchedness, reigned side by side with commercial prosperity and civic prodigality. To enable the lord mayor, aldermen, and common council to secure "the restoration of the city, the imperial seat of the kingdom, and renowned for trade and commerce throughout the world," the Parliament of the second Charles granted to the corporation a revenue for twenty years, from all coal brought into the port of London, or the river Thames,

within the liberty of the city; and the corporation, who are conservators of the Thames, were expressly required to embank the river from London-bridge to the Temple, and to leave the embanked space as an open quay "for the benefit and accommodation of trade, and other great conveniences," and various regulations were specifically prescribed by the Legislature to secure this amongst other objects. The corporation of London no doubt duly levied the tax upon coals, and, no doubt, expended in bricks and mortar a good portion of the amount—with what architectural success, those who were acquainted with the City a quarter of a century ago, are best able to judge. The zeal for architectural improvements, however, subsided; the old abuses of inconvenient and crowded buildings in every available space, were winked at by the civic officers. The Thames embankment was turned to mere purposes of corporation profit, by the ground being let on building leases, and the "open spaces for markets," which had been granted to the corporation on trust, became, as good old Smithfield can testify, closed in as fast as good tenders for building leases met the City's eye. The coal tax, however, long survived the Thames embankment and the open spaces spoken of in the Acts of Parliament. The facility of raising money by indirect taxation, when once sanctioned by Parliament, was too tempting for the corporation not to induce them to resort to it for other purposes than those it was originally designed for. As soon as the corporation income from coal had ceased, by virtue of the provisions of the statutes for rebuilding the city, the magnates at Guildhall got rather extensively into debt. It had been an old practice of the Court of Aldermen to take under their paternal care the orphans of citizens who left goodly estates behind them, and, in 1692, there was a deficiency of nearly half a million of the orphans' money in the City chamber, and the Lord Mayor and aldermen presented a petition to Parliament, stating, that—

"Finding it impossible for the government of this city to be supported under the burthen of so great a debt, they had thought it their duty from time to time to apply themselves to the wisdom of Parliament for proper remedies for such a grievance, in regard it is the case of the capital city of the kingdom, in whose support and welfare the whole nation is concerned, and the Court of Aldermen humbly hope that it will be rightly understood that the debt has not been incurred nor augmented by their default, negligence, or expense, they serving the city freely, at their own cost, without eating or drinking at the city's charge, as has been untruly suggested, and they have been, and are, incessant in their care and endeavours to make the utmost improvement of all that belongs to the city, *only for the benefit of the orphans*, and are now humble solicitors to the Parliament, *not for any interest or benefit of their own, but for the relief of the distressed*, and the quiet and support of the government."

Thereupon the king and queen, lords, and commons, did enact, that the corporation should, in order to pay off their debt, be empowered to tax,—first, the personal property of the inhabitants of the city; secondly, the public lamps; thirdly, the apprentices and freemen; fourthly, wine brought into the port of London; and fifthly, coal; and the coal duty now became a permanent charge, for the corporation obtained a duty of 4d. per ton for ever, for their own use, in addition to their metage charges, and a further duty of 6d. per ton for fifty years. We were almost forgetting to mention that the journals of the House of Commons, after the passing of this Act, inform us, that there was, as in the recent instance of the last City Coal-tax Act, a sort of *post mortem* inquiry into the manner of passing it, and we there find on the report of the committee the ominous resolution, that "Sir John Trevor, late speaker of this House, being guilty of a high crime and misdemeanour, by receiving a gratuity of a thousand guineas from the city of London, after passing the Orphans' Bill, be expelled this House."

The mode in which this precious system of taxation, thus begun and continued by successive statutes to our time, has gone on increasing, is yet fresh in the public mind. The City accounts are said, by those who from their commercial habits are competent to speak with confidence, to be wholly unintelligible to strangers; and yet the Legislature has, from the time of the first impost to the period of the last Improvement Act, required accounts to be kept open for the general inspection of any inhabitant. We should like much to have a fair debtor and creditor account of the coal revenue, and, having to pay heavily for coal, and being interested in building matters generally, we should, above all things, like to see a return of the amount of money raised by taxation for "improvements," and see what has been done with it, and for it; and whether the rents of those numerous plots of ground which have from time to time been let on building leases by the corporation, after a city improvement, do actually go towards the improvement expenses, or whether they have accidentally come to form part of the vested rights of the corporation.

SCENERY AND SIGHTS.

Royal Haymarket Theatre.—Mr. W. Callcott has painted some exceedingly good scenery for Mr. Buckstone's pantomime "Harlequin and the Three Bears," especially a "Ruined Abbey," where the moon illumines the broken tracery of a window, and which changes to the Lotus Lake and waterfalls. This is a very clever work indeed; the waterfalls and distance are capitally managed. The last scene of the introduction, called in the bill a Fairy Raft, introduces a brilliant mass of colour, but it wants gradation; the contrasts are too violent.

Royal Lyceum Theatre. — As usual Mr. Planché has furnished a most successful entertainment here; it is entitled, "Once upon a time there were two kings," and affords opportunities for the application of splendid scenery, costume, and accompaniments, which have been fully taken advantage of. Those critics who, while admitting its elegance, complain that it is deficient in boisterous allusions to current topics, evidently mistake the author's views. In these compositions, which stand quite by themselves, Mr. Planché has always carefully avoided allusions and fun depending on passing events and slang, a comparatively easy task, and has striven to deal with what is permanent, we may almost say universal. The result is, they can be played anywhere at any time. We must keep, however, to our special province, first saying, as an aside, that Madame Vestris has rejuvenesced, and is in excellent voice. The scenery with which Mr. Beverley carries out the author's views in these extravaganzas, is of two kinds, pictorial and mechanical; and in both departments on the present occasion, he has fully equalled the best of his former efforts. Nothing more beautiful under the first head can be desired, than the opening and closing scenes of the first act, one a port, the vessels with gaily ornamented sails, such as E. W. Cooke delights to paint; the other, a "Sea-weed Bower," wherein real forms are expanded and idealized deliciously. The "last scene of all which ends this *fairy* history," unites, as we have said, the mechanical with the pictorial, and in this we must consider the descending fairies, and the concentration of positive colour in the two bunches of flowers, triumphs of skill.

Burford's Panorama.—To fall in with the current topic, Mr. Burford, assisted by Mr. Henry Selous, has given the public a view of Constantinople, with its European and Asiatic suburbs. It has been painted from drawings made on the spot, by Mr. W. J. Smith, the architect of the Sultan's Kiosk, illustrated in our pages a short time ago. It may safely be pronounced one of the best of Mr. Burford's views, and that is high praise. From the Seraskier's tower, where the spectator is supposed to stand, the beauty of Stamboul is strikingly apparent. Every part of the picture is charming, but that portion representing the fine harbour of the Golden Horn (with golden sky to match), the floating-bridge, the rising ground crowded with houses around the lofty tower of Galata, with Pera still higher above, and its cypress-covered cemeteries, we should like to frame and take away to enliven all succeeding winter days.

Wyld's Great Globe.—A collection of costumes and arms collected during the late Arctic expeditions, has been added to the museum here, and in the lectures which are daily given in the globe, a large amount of useful information on the subject is communicated. We listened to one of these on Monday last, with much pleasure and advantage.

Gallery of Illustration, Regent-street.—Here there has been a view of part of Constantinople for some time, and one of St. Petersburgh, to compare with it. Messrs. Grieve and Telbin have now added a series of truthful views on authorities principally contributed by Captain Inglefield, to illustrate a lecture on the North-West Passage. The scene in which the effect of the aurora is shown, and a second, wherein the moon rises, and brings into strong view the masses of ice around, are particularly effective. In the opening view the objects are shown less clearly defined than we suppose would usually be the case there. The diorama of the Ocean Route is exhibited with the new views.

THE CONTINUATORS OF VASARI.

VASARI'S great work may be considered now as nearly naturalized in England, and known to every person interested in art. Dr. *A. Guhl*, of Berlin, deserves attention for having arranged and digested a mass of documentary materials, which instruct us on matters analogous and collateral to the endeavours of Vasari. The materials for such a work are most ample, of which we shall mention the chief. There is, first, Battari's fine work, "Raccolta di lettere sulla," &c.—"A Collection of Letters on Painting, Sculpture, and Architecture, written by the most celebrated Artists of the fifteenth, sixteenth, and seventeenth centuries, and continued up to the present time. Milan, 1822—1825, 8 vols. 8vo." Here an immense mass of the most interesting information is laid chaotically before the reader. Next to Battari, *Gaye's* work is to be mentioned, entitled "Carteggio inedito d'artisti sci secoli xiv. xv. e xvi."—"Unedited Charters of the Artists of the fourteenth, fifteenth, and sixteenth centuries. Firenze, 1840, vol. iii." Here most valuable notices on the origin and progress of many of the greatest art-works of mediæval Italy have been arranged concisely. The last work to be mentioned has had but few readers beyond the confines of Italy. It is "Gualandi, memorie."—"Original Italian Memoirs respecting the Fine Arts. Bologna, 1840—1845, livres i.—vi." Dr. Guhl has translated and arranged 150 of these documents, and added thereto some of the most appertaining observations of his own, on the art-history and the art-mind of those times. Dr G proposes to collect in a second volume the letters of German, French, Flemish, and Italian Artists of the sixteenth and seventeenth centuries.

FOREIGN ARCHITECTURAL AND ART INTELLIGENCE.

Dresden Philanthropic Building Association.—The increase of *homeless* people amongst the even scanty population, has given rise to the above establishment. Its chief aim will be the building of small tenements for the working population, as the experience of other countries (England) has proved, that by going rightly and honestly to work, substantial and decent accommodation can be obtained without any loss to the speculators, and allowing them even the usual per-centage for the outlay of capital.

Complete Perforation of the Alps by Roads and Railways.—Very often, what has not been done by any higher inducement, is done for interest's sake. Thus, the conflicting interests of Sardinia, Austria, and Switzerland, will open a number of *passages* over the Alps, beneficial, in fine, to the cause of civilization. A new road has been made from Val Camonica, over Aprica, to Tirano, conjointly with the completion of that over the Bernina, which will lead direct from the Engadin to Tirano,—a new radius of Alpine communication.

Munich.—General Exhibition of Pictures.—The *Künstler Genossenschaft* of Munich, a sort of art-guild lately established, have decided on the holding of the above exhibition during that of the Zoll-Verein, from which oil paintings are excluded. Besides a sort of prizes drawing, the entrance-fees are to be devoted to the purchase of pictures and encouragement of native artists.

New Breakwater at Leghorn.—This great structure, being part of the new port of Leghorn, is uninterruptedly proceeded with under the direction of the engineer Cavaliere Poirel. Already on the south side large blocks of rock are seen above the water, and signals farther on show the extent of the work. The new breakwater forms an arc, running almost straight from south to north in a length of 1,000 mètres, which will completely shelter the harbour from those gales to which it has been hitherto subjected. The two ends will be protected by forts and lights of the fourth class. The costs are estimated at six millions of lire, and when completed, another similar structure on the north side is to be added, making Leghorn the first harbour of Italy.

Munich.—New Order of Science and Art.—In imitation of King Frederick William IV. of Prussia, Maximilian of Bavaria has created the above new order. Amongst the names of the members of the *chapter* of that order, we find Kaulbach, Klenze, Liebig, &c. The number of knights of the Maximilian Order of Science and Art is not to exceed one hundred.

CONSTRUCTION OF A RESERVOIR AT GREAT MALVERN.

LAW OF FLUIDS.

The "Town Commissioners" of Great Malvern are building a number of tanks for the collection and conservation of the water which springs from the Hills, for the supply of the increasing wants of the population. One of these is an immense collection of brick and mortar, built up at a great cost to the ratepayers of this small place. It is an oblong tank, about 200 feet in length, 50 feet in width, and 30 feet deep, built on the slope of a hill, the top being on one side a little below the surface of the ground, and on the other side a little above it.

Within the four boundary walls are built four solid 9-inch brick walls, the whole length of the tank, and of the same height as the exterior walls, and seven walls of a similar thickness and height at equal intervals across the whole width; thus dividing it into forty equal compartments.

Each of these inner walls, however, is pierced with a large aperture, so that the water flows freely over the whole area.

Now, this work being situated by the highway side, and as, with all these walls crossing each other, it looks very unlike a reservoir, passers-by naturally inquire what it may be intended for; and on being told, ask the *cui bono* of all the interior net-work of brick and mortar, as I did the other day.

To all inquirers the clerk of the works replies, as he did to me,—"Why, sir, these walls inside are to *lessen the pressure* against the outside walls, which would otherwise be unable to bear the weight of water."

Now, sir, I believe it is a simple principle in hydrostatics, that the pressure on any given area of the vertical side of a vessel containing fluid depends *entirely* on the depth of that area below the surface of the fluid, and not at all on the size of the vessel. Or that the whole pressure against the side of a vessel *full* of water is equal to the *weight* of a column of water whose base is equal to the surface pressed, and its altitude equal to half the depth of the water.

In other words, that the whole lateral pressure at a given depth on a given area of the vertical side of a vessel containing fluid, is the same, whether that vessel be a square yard in extent, or a square acre.

This being the case, the inner walls (even if the compartments were entirely separated, which they are not) *can* have no effect in lessening the pressure on the outer walls: on the contrary, they must very much increase it, and so weaken them; because, in order to contain the same quantity of water, the tank must be three or four feet deeper.

What, then, I ask, can be the use of this mass of brick-work inside? I know not who is the engineer or builder.

If this should meet his eye, perhaps he will inform us whether the superintendent of the work gives a proper answer to the many inquisitive passers-by, who are confounded at what they see; and some of them, who think they have a little *theoretical* knowledge, still more at the answer which they receive.

Or, if not, that, to prevent further mistake and misrepresentation, he will furnish him with the right one, and give some explanation which may satisfy the grumbling ratepayers, and yours,

M. A.

WICKES' SPIRES AND TOWERS.

The excellent series of drawings of spires, exhibited by Mr. Charles Wickes at the Royal Institute of Architects some time ago, and then described by us with commendation, have been lithographed, and, preceded by an essay on the Architecture of the Middle Ages, and its spire-growth, form a folio volume of great interest and beauty.* It comprises forty-one subjects in twenty-six plates. To meet the requirements of the profession, the views are in outline in the volume before us; but an edition will be issued forthwith in shaded and tinted lithography. The present volume does not contain any descriptive particulars of the examples given; but the author promises to supply this deficiency in a second volume, already in a forward state, which is to be devoted more particularly to towers.

Mr. Wickes adopts Rickman's classification, Early English, Decorated, and Perpendicular; but commences the Decorated period one reign earlier, namely, from the year 1272, so as to make this include the geometrical period. It would have been better had he given the examples of that period a separate division. In his essay, he traces succinctly and sensibly the changes which occurred in ecclesiastical architecture as the aspiring principle was developed. In the Early English style, the tower and spire soar away to the clouds,—

"And that the spire may seem to grow out of its support, and no break occur to the eye in its upward ascent, it is either made to overhang the tower by small projecting eaves, or where this, from the octagonal shape of the spire, is impossible, pyramidal masses of masonry, technically termed *Broaches*, inclining from the angles of the tower, unite the two together. Pinnacles are also employed to fill up the vacant space, sometimes in connection with, sometimes in place of, the broaches.

"We are led, lastly, to remark on the diminished breadth, and increased, and often bold, projection of the buttresses. They also assume the pyramidal form, mounting in stages, and terminating in a triangular or pedimental head. And the wall being diminished in thickness, while the weight it has to sustain is much increased, a new feature now makes its appearance, *the flying buttress*, designed to assist in carrying down the weight of the stone vaulting to the ground. The introduction of this member exhibits the pyramidal line in a fresh direction, and shows how wonderfully well the old architects could satisfy the demands made on their structural skill, and with what consummate taste they could make a necessary feature of construction harmonize with, and become subsidiary to, the grand design of the building."

With a certain appreciation of the Decorated, our author prefers the Perpendicular, and enters a claim which we cannot indorse, that it should be recognized "in this, the nineteenth century, as our national style." He considers that it is equally suited to the modest village church and to the stately cathedral, and urges that,—"This can be said of no previous period. The Early English, and the Decorated, require great nicety of design and execution to exhibit them in their purity, and involve, in consequence, an expenditure which the retired hamlet or poverty-stricken suburb may be utterly unable to meet; while, if these principles be abandoned, a mean and meagre building will be produced. The Perpendicular, on the contrary, with its broad, continuous, and plain mouldings, its simple window-tracery, its squareness of outline, that admits of being so readily satisfied, can be employed with a rigid economy of outlay, and a certainty of success in the result; and any degree of richness that may be desired can be, at all times, introduced with effect into more imposing designs. Nor is there any style, classical or mediæval, ancient or modern, in which such scope is allowed for originality and freedom of design. The various forms found in roof and gable, arch and window, shaft and pier, tower and spire, offer the greatest latitude to the professional student, and, at the same time, the wide field of still further improvement is spread out before him."

Amongst the examples which are given, we may mention the fine Early English spires of St. Mary, at Stamford, and St. Peter's, Rounds, Northamptonshire; St. Wulfran's, Grantham (geometrical); Salisbury Cathedral; Peterborough; All Saints', Stamford; St. Peter's, Oundle; St. Michael's, Coventry, &c. The view of Redcliffe Tower does not convey a just idea of its extraordinary beauty (we never saw a drawing that did). As an example of the mode in which the views are treated, we have engraved one of them *fac-simile*, namely, that of St James's Church, at Louth, a good example of the perpendicular period, with fine turrets at the foot of the spire.

Mr. Wickes maintains, with excusable partiality, the superiority of English Gothic over that of other countries, and shows an enthusiastic admiration of the structures he has depicted so well. "Follow upward," says he, "yon lofty tower, or gently tapering spire: its foundations are on earth, but it soars away to heaven. Buttresses and pinnacles, pointed arches and tall gables, or long vertical lines seen in the mullions of the windows and tracery of the walls, lead the eye away in the same direction. All the different parts of this matchless fabric, all the countless varieties of outline and detail, for which it is so conspicuous, aim each of them, with greater or less success, at the carrying out of the one idea, which is, indeed, the soul of all,—a well-defined conception of aspiring majesty, and of vertical extension,—seeming to embody that great lesson of our faith,—'Set your affections on things above, not on things of the earth.' Nor is this all: step we within. Now a greater solemnity and awe of feeling steal over us. The stony massiveness of everything, above, around, beneath, subdues, and, at first, almost chills the heart. Mighty pillars, walls of massive thickness, lofty roof, the long vista of the nave, continued in the choir, and then spreading on and on, in 'awful perspective,' till lost in the far distance, are all overpowering. In vain the eye seeks to discover a limit to the building, and to 'thrid its intricate defiles.' Place yourself where you will, the view is boundless. Whether you look to the apertures of the triforium, the dark passages of the clerestory, the branchin transepts, the receding aisles, the chapels that ever and anon, open unexpectedly on the view, there is something further on than you can see: mazes unexplored and interminable are continually suggesting themselves to the mind. At the same time, 'a dim religious light' struggles through the painted glass of the windows, and helps to solemnize the mind, and attune it to devotional thoughts."

What we have said will show that we consider Mr. Wickes's book a very creditable production, notwithstanding the author did commence it beardless, *imberbis adhuc*, as he expresses it, and we hope it will prove the corner-stone on which he may build up fame and fortune.

* "Illustrations of the Spires and Towers of the Mediæval Churches of England: preceded by some Observations on the Architecture of the Middle Ages and its Spire Growth." By Charles Wickes, Architect. London: Weale; and Ackerman and Co. 1854.

INDURATION OF STONE.

In support of Mr. Godwin's observations at the Institute as to Hutchison's process for indurating stone, we have received several favourable statements. Mr. N. E. Stevens, an architect of that neighbourhood, says that although it is true that owing, as he believes, to ignorance or neglect on the part of the workmen employed, some of the early specimens of paving failed; the solution had not been allowed to penetrate the stone to a greater extent than one-fifth or one-fourth of an inch, instead of passing entirely through the stone. He is now, after careful watching, quite satisfied as to the great advantage of the process. Sir Roderick Murchison, too, has given strong testimony in its favour. A font of soft sandstone thus indurated, we are told, has been recently put up by the patentee in the church at Staines.



SPIRE OF ST. JAMES'S CHURCH, LOUTH.

DISCUSSION ON THE APPLICATION OF PAINTED GLASS.

This question was discussed at the Royal Institute of British Architects, on the 12th inst. and was opened by Mr. Trotman, who proceeded to describe the subjects in chronological order. The first was one of a series of four subjects relating to the history of Christ, from the church of Rivenhall, Essex, which had been procured from Tours some years ago by the present vicar, for the decoration of the church. These specimens dated from about the beginning of the twelfth century. The whole of the ground colour was a rich bright blue: a quantity of green was intermixed with this in the figures, and great relief and brilliancy were given to the design by the introduction of characteristic lines of white. Mr. Trotman next referred to similar specimens from Canterbury Cathedral, and to four subjects from York Cathedral, the most perfect, out of seven, representing the corporeal Acts of Mercy — Giving shelter to the Houseless, Visiting the Sick, &c. Two large drawings of windows in the church of West Wickham, Kent, representing the Virgin and Infant Saviour, and the Virgin and St. Anne, were next noticed; these being of the latter half of the fifteenth century. A Nativity from Great Malvern Church; one of the heraldic badges from the east end of Henry the VIII.'s Chapel; the Visit of the Queen of Sheba to King Solomon, from Fairford Church, Gloucestershire; and an interesting specimen from the Hammermen's Chapel in the Cowgate, Edinburgh, representing the National Arms of Scotland ("the Scottish Lion"), were then referred to and described; and Mr. Trotman further directed attention to a series of small drawings of painted glass from the continent, including specimens from Paris, Rouen, Brussels, Cologne, &c. Mr. Trotman expressed his concurrence in the views of Mr. Winston generally, and regretted that some false principles should have been promulgated on the subject of glass painting by Mr. Redgrave, in the catalogue of the contents of the Museum of Ornamental Art, that gentleman having objected to the introduction of shadows, and observed that "glass painting should consist of flat tints without shadow." On the contrary, he (Mr. Trotman) considered that if shadow were to be omitted, there must be an end of glass-painting; and certainly the folds of drapery, &c. could not be better represented by outline than by shadow, especially as painted windows must be seen from a great distance. The real question was, to what extent the principle of shadow and rotundity should be carried. Some of the medallions in Canterbury Cathedral were in simple outline, whilst the east window of St. Bride's Church (the Descent from the Cross, by Muss, after Rubens) was remarkable for depth of shadow; and each of these alike failed to realise the resources of glass-painting. The object to be attained was the highest degree of brilliancy consistent with a high degree of art; and he therefore could not sufficiently admire the sentiments of Mr. Winston, who had given a severe blow to the merely antiquarian view of the subject, and to the fallacy of direct imitation of mediæval glass-painting. Ward and Nixon, in their work at Westminster Abbey, were to be commended for not adhering too rigidly to the old models, although they had not succeeded in developing all the resources of the art. As a general principle, in order to insure that brilliancy which glass offered, it was necessary to treat every subject with considerable subdivision, and great attention to detail. In some modern glass-painting much of the interest was lost by a neglect of accessories and details, and the modern glass at Cologne Cathedral was objectionable in this respect, as it consisted of single figures with large masses of drapery. By subdivision he meant a more complicated style of composition than was necessary in any other kind of painting. Thus the Church of St. Vincent de Paul, at Paris, possessed some of the finest specimens of modern glass; but from the figures being too colossal, and occupying each one window, the subjects were less interesting, and less brilliancy was obtained, than a different treatment would have insured. The effect of colossal figures in glass-painting tended to diminish the apparent magnitude of the building, and was exemplified at the east end of the Chapel of Eton College, where the windows of Mr. Willement had an injurious effect. Upon the whole, he considered it would be very wrong to study the specimens exhibited with a servile regard to precedent, but rather as offering so many steps towards the attainment of a good and effective style. The human figure must be considered essential, either singly or in groups, as windows representing only foliage, &c. could not be interesting, and should rather be classed as ornamentation than art. The subjects should be on as small a scale as was consistent with distinctness; and, so long as the necessary brilliancy was not detracted from, there was no limit to the application of shadow. Useful hints might be taken from sculpture in relievo, and from such works as the bronze gates by Ghiberti, at Florence; care being taken to render the figures important and the accessories subordinate.

The Rev. J. L. Petit, honorary member, concurred with Mr. Winston, whose object, it appeared, was to combine the merits of the glass of the twelfth and thirteenth centuries, with a degree of art and beauty not then obtained; and in so doing he would not violate the principles of that era, when the artists got the best models and drew as well as they could. Servile imitation should be scrupulously avoided, and if works of art of a high character were unsuited to Gothic buildings, then the Gothic was not the style for the age. The architect should make himself independent of the painter and the sculptor; but when their aid was offered in the finest art, he should be able to exalt that art, and so to place the specimens of it that they should appear exalted even in their subordination to the architect. Thus the Grecian, the Roman, and the Italian styles, admitted of the application of art in its highest character; and so the Mediæval architecture admitted the best specimens of art that could then be obtained. If, on the contrary, at the present time, Gothic and the highest art were incompatible, that style ought not to be pursued. Architects should endeavour to revive, to modify, and to improve it; but if they could not make it a noble style, let it be abandoned.

Mr. E. T. Parris, visitor, drew attention to the cartoons of Raffaelle as being, in his opinion, composed upon principles similar to those which should regulate glass-painting. In those works every relief was gained by an opposition of colour, rather than by shadow; and, as in the best stained glass, the horizon was very high, its line being always broken by colour or form of some sort—in one instance by a house on fire, the object of introducing which could only proceed from some artistic principle. He fully agreed with the remarks of Mr. Winston. Many painted glass windows had been erected from his (Mr. Parris') designs, but he was generally trammelled by the person who had the order. He had declined the work at Westminster Abbey, executed by Mr. Nixon, for this reason.

Mr. Papworth, Fellow, observed that the discussion had been directed rather to the best styles of glass-painting for Mediæval architecture, than to "the proper application of painted glass to buildings in various styles of architecture." The question to be laid before them by Mr. Winston, was whether they ought to have any stained glass at all. Stained glass either was or was not a necessity to the architect, and it would be well to settle this as a principle. In the majority of the works of modern architects the question was a difficult one. They could not all build churches and fill the windows with stained glass, or decorate old churches in the same way, their business being rather with a great variety of public and domestic buildings; and the difficulty was whether painted glass was applicable to domestic uses, and if so, what style should be adopted. The reply to this question would answer the previous inquiry—whether they were to have painted glass at all. He considered there was a great deal of merit in that kind of glass which had been largely introduced since 1800, consisting chiefly of ground glass, with arabesques and other ornaments painted upon it. Probably Mr. Winston would state whether he thought that kind of painting applicable to the wants and purposes of the present day.

Mr. Alfred Bailey observed that there was one variety of mediæval painted glass which had not been referred to. This was to be found in the minor towns of Central Italy, and appeared to have been executed late in the fifteenth century, and designed on totally different principles to any other kind. They resembled in general design the English glass of the thirteenth century, but instead of the colours being arranged in small lines, they were introduced in large masses, giving a broad effect of colour. Figures were introduced but sparingly, and generally small; which was remarkable, considering the perfection attained in the fine arts at that period. Mr. Bailey referred to specimens at Arezzo, Perugia, and Assisi. With regard to the question of the style of art suitable to painted glass, he believed that a finished pictorial composition was not suited to that material. In S. Petronio, at Bologna, two of the grandest figures designed by Michael-angelo, were introduced in stained glass, with a great deal of light and shade, and produced a most unpleasant effect. Mr. Winston did not object to shadows, perspective, and even landscape back-grounds, but it required great study to know what effect a picture would have, and whether it was a fit subject to permit the passage of light. None of our best artists would like a good picture to be placed in the situation of a painted blind. Architects often neglected to consider where they should place painted windows, and a very bad effect was sometimes produced by having them at the level of the eye. A grand and broad effect of colour should be sought for rather than a result resembling patch-work; and the architect should especially remember the importance of painted windows, as striking the immediate attention of the spectator on entering the building; and, consequently, if these were too much elaborated, they must detract from the effect of the building itself.

Mr. Twining, visitor, was of opinion that stained glass should not be made to compete with oil paintings, but should be rather of an ornamental character. Painted windows being generally placed at a considerable height, were not adapted by position to receive representations of landscapes,—especially of flat scenery; and moreover architectural subjects seen in an elevated position must be represented by false perspective. The representation of groups on different panes was objectionable, because the metallic slips which formed their outlines, were necessarily of the same thickness throughout.

Mr. Hesketh, Fellow, called attention to some books containing a series of original illuminations from MSS. on vellum, collected by Major Macdonald in Arabia, Syria, and Italy. The beauty of these illuminations, and the principles upon which they were designed and coloured, admirably adapted them for imitation in glass-painting. In reference to paucity of subjects for stained glass, he might suggest the metaphorical subjects abounding in the Scriptures,—such, for instance, as the meeting of Righteousness and Peace; and many others, which Flaxman had mentioned as never having been treated by artists.

Mr. Talbot Bury, Fellow, regretted that a sufficient amount of talent had not hitherto been brought to bear upon glass-painting. He agreed with Mr. Winston that those designs in which the light was centralized were failures, because the objects represented must be transparent or semi-transparent. One obstacle to enlisting talented artists as glass-painters arose from the mania for collecting specimens of old glass of any kind, and putting them together as "ruins,"—or copying and imitating them. Again, a first-rate painter would not be fettered by a glass-cutter, or by any rules or dogmas as to the style of drawing he should adopt. The advice of the artist was too often neglected, and people would not give sufficient remuneration for his work: that was the true cause of the inferiority of the art. It had become a matter of competition, and the person who gave the most glass and the most colour for the money, was employed, without regard to merit. Individuals, committees, and the clergy, were alike ignorant of the principles of the art, and were too often

influenced by a mere prejudice in favour of antiquity. He wished, therefore, that Mr. Winston's paper could be extensively circulated, for the dissemination of good taste. So long as nine-tenths of the world preferred the barbarisms of antiquity to the finest works, he did not know what could be done to improve the art of glass-painting. Mr. Bury referred to a drawing of the east window from Lincoln's-inn Chapel, &c. as an illustration of bad taste in modern work. He agreed with Mr. Winston that by an artist the mullions dividing a window might be overlooked; but that was not the case with others, and when, as in some instances, a canopy or other object on the glass was completely divided by a mullion, as in a German specimen among the drawings, the effect was very bad.

Mr. Winston said that, not being a professed artist, he had been obliged to study the subject in a desultory way, and rather by actual observation and comparison than by deep reflection. Hence, he had not given his attention to the subject of painted glass for domestic purposes. He agreed with Mr. Trotman as to the principle of subdivision, and in his objection to colossal figures. Some of the figures in ancient windows did not appear so large as they actually were, in consequence of their skilful treatment by the artist. A figure of St. Christopher, at Strasburg Cathedral, of the twelfth or thirteenth century, was nearly 14 feet high; but the drapery was broken in every direction by lines of different colours, and there was little or no shadow; so that the general effect to the eye was similar to that of a mass of colours, or a regular pattern. The remarks of Mr. Parris, as to the cartoons of Raffaelle, were new to him, and he quite agreed with them. Sir C. Eastlake had also pointed out the manner in which Raffaelle had adapted his compositions to their execution in a material incapable of any great effect of depth. He agreed with Mr. Papworth that ornamented ground-glass had much merit. It looked somewhat flimsy; but it was very pretty, and certainly better than plain glass. It might be a question how far painted glass was suited to modern domestic habits. Mr. Winston mentioned the round patterns seen in German glass, and Mr. Powell's patent for stamping glass. The weight of this latter material, however, rendered it objectionable for a window to be raised and lowered, but it was well suited to staircase windows, &c. What he had stated respecting the flat and the rotund style of glass-painting should be borne in mind; and the material should not be forced beyond its capabilities. The early MSS. certainly contained valuable hints in their illuminations. Mr. Bury's remarks on the question of the cost of good windows were perfectly true; and it was impossible to deny the superiority of foreign stained glass. The specimens in the Great Exhibition of 1851 amply proved this. These were works produced under the fostering patronage of powerful individuals. It should be remembered that not only was there an objection to pay adequately for good works, but that a vast deal of money was wasted on bad works. It would be better to have one good one than fifty bad ones. The erection of one fine window in a church was sufficient for a generation; and doing more than that in an imperfect way, was only impeding what might be better done hereafter. It was the province of architects to elevate this art by impressing its importance upon their employers; and he felt sure that there would be no want of skilful designers, if proper encouragement were offered to them.

The chairman (Mr. Wyatt) concurred in the necessity of architects forcing their employers in every possible case to encourage a higher style of art. He would never himself be a party to the erection of a stained glass window, unless he had a choice both of the cartoon and the artist. Their difficulties had arisen from a combination of circumstances, of which not the least was the fact, that the whole world professed to be critics, especially in mediæval art, and acknowledged no judgment but their own. He took occasion to refer to the new window in Mr. Hope's church, in Margaret-street, which he described as most unsatisfactory, though he had met several persons who considered it the finest of modern specimens.

PROVINCIAL NEWS.

Leeds.—A considerable number of manufacturers at Leeds have been fined for neglecting to consume the smoke arising from their furnaces. ——A new theatre is about to be erected. The capital is to be raised in shares, and a considerable sum has been already subscribed for.

Moorallerton (Leeds).—The new church of St. John and burial-ground attached were consecrated on Tuesday in week before last. The church and parsonage are in the Early English style, from designs by Mr. Joseph Thompson, of Leeds, architect, under whose superintendence they have been built, by Messrs. Joseph Wood and Sons, of Woodhouse, masons, and Mr. Thomas Hall, of Leeds, joiner. The cost of construction, including parsonage-house and schoolroom, was about 3,000*l.* The church consists simply of nave and chancel, with spire at west end. The interior has been decorated. The east window, a gift by the late Mr. Ard Walker, designed by Mr. Charles Thompson, and painted by Wailes, represents St. John the Evangelist, surrounded by emblematic groups. The chancel is paved with tesselated tiles, emblematic of St. John, presented by Mr. Newington, of Leeds. There are 250 sittings, 100 free; and an organ-gallery holding forty children. Towards the endowment Mr. John Purchon contributed 1,000*l.*

Grimsby.—H.M.S. *Black Eagle* has been making a survey of Grimsby harbour and coast, with the view, it is surmised, of preparing plans for more efficient fortifications on the banks of the Humber.

Spilsby, in Lincolnshire, is now lighted with gas.

Lynn.—It has been resolved to erect a new Corn-exchange in Lynn. The design which has been accepted was prepared by Mr. Maberley, of the firm of Cruso and Maberley; and the estimated cost of the new structure is 1,700*l.*

Norfolk Estuary.—The Norfolk Estuary works are proceeding in a very satisfactory manner. The bank across the old channel of the Ouse is high and dry above the neap tides at flood; the scour in the Marsh-cut is being vigorously prosecuted; and beyond the Marsh-cut, seaward, the scour is proceeding in the direction in which the Second, or Vinegar Middle Channel, will afterwards be formed. The bridges to complete the new approach from the north bank of the Marsh-cut to the town are also in course of rapid formation.

Tranmere.—The designs of Messrs. Hay, the architects, have been selected for the new church, Limekiln-lane, and the works are to proceed immediately. Mr. Orred has given a most eligible site for this church.

Wem.—The design for the new cemetery chapel, on a plot of ground adjacent to this town, has been prepared by Mr. Dodson, of Shrewsbury, and received the approval of the parochial committee, who have likewise entrusted to him the completion of the work. The style of the building is Early English, and it promises to be a neat and effective composition. The situation proposed for its erection will be in the centre of the burial-ground, in a direct line with the entrance, and it will be elevated on a low terrace.

IMPROVEMENTS IN BROMPTON.

In the preliminary notices for Acts of Parliament for improvements in the Metropolis, the neighbourhood of Brompton stands prominently forth. The Royal Commissioners promise several new and extensive public roads. Mr. Farlar, the original proprietor of a great part of Brompton-square, has also given notice to make a new road, from the end of Brompton-square into the road leading to Princes-gate, Knightsbridge, and so to the Kensington-road, an alteration that has long been desired. If we understand rightly, the Kensington Improvement Commissioners have also taken up this proposition, concerning which we shall have something more to say.

The Kensington Improvement Commissioners have also recently removed an obstruction in the shape of iron bars, at the end of Brompton-crescent, next the Fulham-road—a great improvement.

A stained glass window, in memory of the late Robert Gunter, Esq., has been put up under the direction of Mr. Godwin, in St. Mary's, West Brompton, for which building Mr. Gunter gave the site. The window is the work of Mr. Wailes, and may be pronounced successful. The subject is the Ascension of the Saviour, and presents fourteen large figures. The window is in three wide lights, of the Decorated period. A novelty has been attempted in the colour of the background.

NOTES AND INQUIRIES.

ARCHITECTURAL AND ARTISTICAL.

Stains on Masonry.—A correspondent (No. 562, Nov. 12) inquires how to remedy the tendency in new stonework to grow green, and another (No. 564, Nov. 26) bids him be of good cheer, for that two or three days' frost will be sure to remove the green. I beg to say, that the greenness complained of is by no means peculiar to *new* masonry, and also that a few days' frost will *not*, with certainty, remove it. I have seen some to-day (Dec. 19), although we have had many days' frost. A strong solution of corrosive sublimate, laid on with a brush after a few days' dry weather, will effectually remove the green stains on masonry, and prevent its growth for some time; I have not yet ascertained *how* long. S.

ARCHITECTURAL COMPETITIONS.

New Public Hall for Manchester.—The gentlemen who were appointed in July last, to obtain plans and estimates for the intended Public Hall, upon the site of the Free Trade Hall, made their selection last Tuesday. We understand that six sets of designs were sent in. That by Mr. Walters was chosen by the committee—the prize of one hunded guineas being awarded to Mr. Edward Salomons, for the second best design. It will be remembered by our readers, that the committee selected a few of the architects of Manchester to send in designs; and some dissatisfaction seems to have arisen, that the competition was not open to all the profession in the city. It is said that the architect's estimate for the selected design, considerably exceeds the amount named as the limit by the committee.

Carlisle Lunatic Asylum Competition.—Allow me to state the facts respecting the competition for the lunatic asylum to be erected near Carlisle for the counties of Cumberland and Westmoreland, and advertised in your columns. The last day for delivering designs was the 1st of December, and on the 19th of the same month, a circular was sent to the competitors, announcing that the committee had "carefully examined the various plans and estimates," and had "unanimously given the preference to those by Mr. Worthington, of Manchester," and that the other designs had been already "carefully repacked and returned." Now as there are generally not less than thirty or forty competitors for buildings of this kind, there must have been some hundreds of different drawings, all to be "carefully examined," in the short space of two weeks, after making deductions for the time required in unpacking, arranging, and re-packing: it was evidently impossible, therefore, that justice could have been done to the designs of the several competitors in this short space of time, for a building, too, whose cost could not be much under 30,000*l.*

One of the Competitors.

The Road at Hyde Park Corner.—The road from Knightsbridge to Hyde Park Corner seems to us a disgrace to the practical science of the day. On the first occurrence of frost it is absolutely impassable without danger. It has had an unenviable notoriety in this respect for years; and still no remedy is attempted. On Monday night last, for example, we saw at one moment *five* horses on their sides, and all the others passing were compelled to walk with care to avoid taking the same position.

Mr. William Hopperton, Architect, died a few days ago in the 74th year of his age. Mr. Hopperton in early life worked his way from the carpenter's shop, established a drawing school, and ultimately placed himself in a respectable practice as a surveyor and architect. With less modesty he might have made more noise.

ON THE WARMING OF CHURCHES.

THE following paper was read at a meeting of the Architectural Society of the archdeaconry of Northampton, by the Rev. H. J. Bigge:—

The importance of the present subject will, I trust, render unnecessary any apology for the few remarks which are about to be offered to the members of the Architectural Society, on the Warming of Churches. It is one of those inquiries of a practical nature which demands our attention no less than the higher branches of ecclesiastical art, or antiquarian research, of which our society possesses several able exponents, and which equally tends to promote the objects for which we are associated together.

I should not have ventured upon a subject which presents so many difficulties, and concerning which there exist such varieties of opinion, had I not been requested by the Secretary, on exhibiting lately some plans to the committee in which a certain system of warming had been found to succeed, to make a short statement of the principles of its construction, and the advantages it was supposed to possess.

It is very clear, from the more luxurious habits of the present age, as compared with the past, some artificial warmth is required, to render tolerable any lengthened attendance in those sacred edifices where our forefathers worshipped, without any contrivances for such a purpose. Since, therefore, it has become not only a matter of importance to the comfort of those who are strong and healthy, but absolutely essential to the safety of the sick and the infirm, who are frequently precluded altogether, by the prevalence of damp or cold, from attending the services of our Church, it cannot be a useless inquiry to ascertain the best means for effecting this object in the least objectionable manner. It may be observed, however, that every attempt at warming a church will be found to be completely ineffectual, unless proper care be taken, in the first place, to remove those dilapidations which have been caused by time, or those deficiencies which have crept in through neglect. Perhaps there is a decayed door; the windows may be badly glazed, and here and there a broken quarry, or the pavement may be damp or defective! These are the certain and self-evident sources of cold, which is thus fruitlessly and injuriously counteracted. The best method of preventing the annoyance arising from the cold air, is to hang a curtain over the door, which is in every way more suitable than the red baize doors which we sometimes see, reminding us more of the entrance to a theatre than to a sacred edifice. A kind of thick felted cloth is manufactured for the purpose by Mr. French, of Bolton, in Lancashire (of which there are some specimens in the Society's room).

Let us glance for a moment at some of the different contrivances which have already been resorted to for obtaining artificial heat. Cast-iron stoves of every kind, and size, and denomination, have been successively adopted, and as often thrown aside: it would be quite a task to discuss the respective merits of each, as it would be sometimes a difficult one to analyse the names they bear. There are the Phœnix, Vesta, Pyro-pneumatic, and Patent Chunk Stoves; there are stoves with descending flues; Joyce's stove, without any flue; and the patent calorifière gas stove, which requires no pipe, and will burn for twelve hours without any attention whatever.

No one can enter a church in which some one of these iron stoves has been placed without being forcibly struck with their unsightly and unecclesiastical character, and the great disfigurements which they generally occasion to all parts of the building. Pipes of every variety of shape, and size, and hue, are extended in every direction, either suspended by chains from above, or supported by legs from below: they pursue horizontal, zigzag, and perpendicular courses above the pews or under the galleries; they are thrust equally through the bare walls or richly-traceried windows, violating all principles of correct taste, and in defiance of all ecclesiastical propriety. But, besides these evils, there are two great defects which will be found to exist in most of the iron stoves in common use. The first is especially to be noticed in churches and buildings with stone floors. However large the fires may be, and the heat they emit, there will always be in winter, a current of cold air from the doors and windows, sweeping along the floor towards the fire, so that the few who are in a situation to feel the influence of the heat are, at the same time, inconvenienced by the cold. The greatest amount of heat will rise to the space above, while the air least warmed will remain on the lowest portion of the building, and always keep that part cold. Hence, though a person may feel warmth to his face, his feet will suffer from the cold of the pavement, and that part of his body will be chilled where warmth is most needed. The other defect is, the great waste of fuel, in proportion to the heat obtained: it has been calculated that at least eleven parts of every twelve of the heat generated, passes in waste up the chimney.

Another objection to iron stoves is, that the heat, being transmitted through a metallic substance which expands under the influence of fire, carries with it any impurities existing in the coal which are evolved in combustion; producing that stifling and oppressive sensation which every one must have experienced who has come within their reach. I am bound to notice favourably, although it is an iron stove, one that has been placed in the churches of Brampton Ash and Welford, since I am informed that it has answered its purpose, and because it is different in its construction from those I have mentioned. A well is sunk in the floor, 10 feet long, 2 feet 6 inches wide, and 2 feet deep. In this is placed a cast-iron stove, about 1 foot 6 inches square, with a pipe 6 feet long, having a closed ash-pit, into which drains are conducted from different sides of the building to supply the stove with cold air. The well is covered over with an iron grating, through which the hot air ascends into the church. The smoke passes away by means of a flue under the pavement, and is carried up the tower, and thus there is nothing visible in the building.

The system of warming by hot water, conveyed in pipes along the walls, and on a level with the floor, is free from most of the objections just stated, and is effective in its operation; but the expense of laying it down, and afterwards maintaining it, is too great to admit of its being employed in ordinary cases.

Some years ago, the Cambridge Camden Architectural Society, in order to avoid the unsightliness of iron stoves and pipes, recommended an open brazier, filled with coke, to be placed on the floor of the nave or chancel, and raised on a stone plinth about 6 inches high, so that the whole might be about 18 inches altogether. This was to be lighted for an hour or two before service, and afterwards removed, when sufficient heat had been obtained to warm the church. This plan, however, has been very rarely adopted, since the dust and smoke which were unavoidably created, would be with difficulty removed without the introduction of cold air.

I am informed that in Salisbury Cathedral, during cold weather, two or three large braziers full of live *charcoal* are placed on the floor in different parts of the building. Its great size, no doubt, prevents any prejudicial effects from the carbonic acid gas emitted, though it frequently produces a sensation of drowsiness, and, in a smaller area, it is clear that this method would be attended with dangerous consequences.

At Durham Cathedral, upwards of a dozen patent Phœnix stoves, which consist of an iron cylinder, about five feet high and a foot in diameter, are placed about the edifice; the pipes are thrust out at the windows nearest to them; and the result, though unsightly enough, is tolerably successful.

In the church of St. Stephen, Westminster—better known as that which has been built at the sole cost of Miss Burdett Coutts—a most complete system both of warming and ventilation is adopted, by means of which hot air, from a large furnace outside the building, is forced into flues constructed in the floor and walls: cold air is admitted in a similar manner, and both can be regulated according to circumstances.

By the kindness of J. W. Hugall, Esq., architect, of Cheltenham, I am favoured with a description of a gas stove, which has lately been constructed with good results. It consists of an earthenware chamber, within which the gas-burners are placed. Around this there is another chamber, of the same material; between these two the fresh air is admitted, and is heated by coming in contact with the heated surface. A foul-air tube carries away any unwholesome vapour into a chimney.

The question of open seats in our churches having been at length decided by the general voice of public opinion pronounced in their favour, it becomes a matter of some importance to ascertain what is the best method of making them as conducive as possible to the comfort of the occupants, so that the objection to their being *open* may not operate in a manner prejudicial to their adoption. The object to be attained, therefore, in warming a church, is to provide that a body of heat should arise from the pavement, which shall traverse as large a portion of the unoccupied area of the building as possible. This principle of heating from below, under various modifications, was well known to the Romans, and seems to have been admirably adapted for the purpose. Rooms and baths heated on this system appear to have been provided in every Roman villa; and they have been discovered in England wherever the remains of Roman habitations are to be found. A short notice of them, therefore, may not be uninteresting, as a record of their skill and contrivance in providing for the internal warmth of their houses.

The Roman Hypocaust (from a Greek word signifying literally *fire or heat underneath*) was constructed in the following manner, as will be observed from the ground plan and section of one which has been discovered at Lincoln. It consisted of a parallelogram 25 feet long by 10 feet wide, containing four rows of brick pillars, some square and others round, 2 feet high, standing 1 foot apart, upon a foundation of tiles. The ceiling was formed of large tiles 2 feet square: upon these was laid a stratum of cement or lime and pounded bricks, in which was set the ornamented Mosaic pavement, composed of small tesseræ or cubes of different colours, the whole being 10 inches thick. The fire-hearth was at one end, constructed under an arch in the outer wall, below the level of the ground, and the flame passed through the arched cavity or throat of the furnace directly into the hypocaust. The furnace was probably approached from without, in the same manner as the stoves of hot-houses at the present day. In addition to these supporting pillars, there were frequently rows of flue tiles, with a hole on one side, placed near, and built into the walls above, so as to admit and distribute the hot air over different parts of the building. The floor of the furnace was 18 inches below the level of the hypocaust, in order that the heat might thus rise to the roof: the large space which the furnace occupied was provided for the admission of air, and was also necessary for conveying a heated current through the flues, as the Romans were unacquainted with the use of a chimney for creating a draught. The hypocaust is well known to the Chinese, and is in common use near Pekin, where the winter is very severe. The houses of the better class of persons are built with double walls, and with hollow flues extending beneath the floors. The fire-place is constructed against the outer wall of the room to be heated, by which means the annoyance from dust and smoke is avoided. The floor consists of flat tiles or flag stones, set in cement, so as to prevent the escape of smoke into the room. By this means, the heat, coming in contact with every part of the floor, is uniformly diffused over the apartment. The ingenious economy of the Chinese (from which we might often borrow a useful lesson) prevents the flues being choked with soot. Instead of employing coal of good quality, they use the inferior or refuse coal for this purpose, and mix it with clay, earth, or any decayed vegetable matter, and then form it into balls, which are dried in the sun. They find that these balls, during combustion, give out very little smoke. This method is not adopted from any scarcity of coal, but the Chinese know how to use it to the best advantage.

I have thought it necessary to carry these remarks upon the hypocaust to some length,

because the description will almost entirely apply to the system which I am about to recommend. It will be evident, from what has been just stated, that most of the objections which have been made to the ordinary stoves, may be in a great measure, obviated by the Roman plan, with such modifications as will adapt it to our requirements. By a reference to the plan of Rockingham Church, it will be seen that the furnace is constructed 3 feet below the level of the floor, at the north west corner of the building. It consists, as the section will show, of an arched chamber for the fire, 2 feet deep and 1 foot 6 inches high, and 10 inches wide, from which a flue, 1 foot square, conducts the smoke and hot air, by a gradual rise of 6 inches in a foot; or, where practicable, the flue may be brought up immediately to the surface. The throat of the furnace is contracted by the insertion of a bridge at the top, in order to cause the consumption of as much smoke as possible in the fire, before it enters the flue. This portion of it, viz. 6 feet, is constructed with fire-bricks and tiles, and it is here that the greatest amount of heat is produced. The flue, starting from the dimensions of 1 foot square, gradually *increases in width* to 2 feet, but *decreases in depth* to 4 inches, when it reaches the level on which it is to proceed. The flue is then conducted along the passage between the seats, the pavement itself forming the roof. Blue and red Staffordshire tiles laid alternately, lozenge-wise, form the pavement; they are set in cement, resting upon common blue slates, which are supported at intervals of six inches by thin bricks set on edge in the middle of the flue, the whole forming a solid substratum, and by no means unsightly. Staffordshire tiles are used because they will best stand the fire, and from the difficulty of obtaining any stone which would answer this purpose. Supposing the passage to be 5 feet wide, and the flue 2 feet, there remains a space of 1 foot 6 inches on each side from the wood-work of the seats, thus preventing any danger from over-heating. The flue proceeds along this passage to the extent of 60 feet, when it enters a chimney, formed by circular nine-inch tiles inserted in the wall, and carried up through the parapet.

I have also exhibited a plan of Weldon Church, showing the position of two furnaces, which, in this case, are required from there being a larger area to be warmed. It is of importance that the furnaces should be constructed in such a position that a certain rise may be obtained for the flues. The best place, in general, will be found to be under the porch; the ground underneath being excavated, and a vault formed, easy access is obtained to the furnace, as well as a convenient receptacle for the fuel. An important advantage is gained by this position of the furnace: every time the door is opened, and a current of cold air enters, it is immediately warmed by coming in contact with the heated tiles just above the furnace; and then it is carried on, provided there are open seats, without doors, in the first instance to the feet, which are thus kept comfortably warm. It will be seen that from the length of the flue no heat is wasted, and the higher the chimney is carried, the greater certainty there will be of insuring a good draught. Where practicable, the tower therefore is the best place in which to construct the chimney. In churches where one furnace cannot produce sufficient warmth, an ingenious contrivance has been adopted, consisting of a circular hole made in the floor to the depth of 1 ft. 6 in.; 1 ft. in diameter at the bottom, and 8 in. at the top, lined with fire bricks, and having a flue at the bottom running into the main flue, at the distance of about twice that. From the plan it will be seen that the shape of it is somewhat similar to that of a coffee-pot. This circular hole is suited for warming a vestry, or for portions of a church which may be too distant from the main flue. The principle upon which it acts is that of a downward current: the coals are placed at the bottom, then some smaller sticks, and shavings at the top; these are lighted, and the flame is carried downwards by the pressure of the air above, igniting the wood and coals, and consuming the smoke in descending.

The superiority of this plan of warming over that by means of iron stoves, consists in the purity of the heated air which ascends from the furnace, and, being filtered, as it were, through the tiles, rises into the space above, purer than when contaminated by passing through any heated metallic substance. Other advantages are, the beneficial way in which the heat is produced at the lowest point in the building; its safety from fire, the only access to the furnace being on the outside; the absence of dust, smoke, and dirt; and the economy of fuel. The person who has executed the work at Rockingham and Weldon, is Mr. Bradshaw, an intelligent builder, at Leamington, who has applied this system of warming to several churches and schools in that neighbourhood. The cost of it for the length and extent I have described, amounted at Rockingham, to 35*l.*; at Weldon, to 65*l.* The materials were supplied by Mr. Arnold, the architectural brick manufacturer, Tamworth.

It was impossible to convey any idea of this plan without carrying these remarks to a greater length than I could have wished, and even now, I fear I have left much unsaid, and which I shall be happy to communicate to any person who wishes for further information on the subject.

Before concluding, I must not omit to notice one other method of keeping our churches warmed and aired, and which cannot fail to be attended with beneficial results, and that is to open them as frequently as possible for Divine Service. Let this simple method be adopted, in addition to the artificial means already recommended, and we shall not have to complain of cold, which may, in some measure, be the result of a want of zeal and devotion in ourselves.

Notices of Books.

Once upon a Time. By Charles Knight. In Two Volumes. London: Murray, Albemarle-street. 1854.

And pleasant, entertaining volumes they are,—full of that genial spirit and that familiar knowledge of old London and old times for which Mr. Knight is so distinguished. Some of the pieces have appeared before in print, but others are new; and even the old are newly touched up. In these glimpses of the past we have picturesque reminiscences of Addison and Steele, in familiar chat of "John Dryden, Esqr." and "Mr. Milton" of Holborn, Dr. Johnson, Ben Jonson, *et multis aliis*. The titles of some half-a-dozen out of the six-and-thirty chapters, or sketches, into which the little work is divided, will give some idea of its nature and its general spirit. Such are "The First Newspaper Shop," "Horace Walpole's World of Letters," and of "Fashion," "St. John's Gate," "Philip Sidney and Fulke Greville," "Shakespere's First Ride to London," "Ben Jonson's Mother," "John Aubrey and his eminent Men." Of the interesting nature and subjects of others, the titles merely would not clearly tell.

Letters on the Condition of the Working Classes of Nassau. By T. Twining, Jun. London: George Barclay, Castle-street, Leicester-square.

These very practical and interesting letters comprise a report on the intellectual and technical training, earnings, and household economy of the working-classes of Nassau, and on the institutions established for their benefit. The report is addressed to the council of the Society of Arts, and is also designed for distribution amongst the institutions throughout the country in association with that society. The information it contains cannot but be valuable to the industrial classes in this country, both as respects those points in which they are in advance of, and those in which they are behind their fellow-workmen in some parts of Germany. The details on the subject of industrial organization are especially interesting, as are those in regard to domestic life. The average weekly wages of stonemasons in Nassau are 10s. to 16s. 8d.; building masons, 6s. 8d. to 8s.; carpenters, 5s. 10d. to 7s. 4d.; slaters, 8s. 9d.; whitewashers, 6s. to 7s. 4d.; glaziers and joiners, or cabinetmakers (with board and lodging), 2s. 4d. to 3s. 4d.; smiths (ditto), 2s. 6d. to 3s.; labourers, 8d. to 1s. 1½d. a day. And the expense of living is not so much less than in this country, as might be imagined from such wages. Beef is 4d. to 4½d. a pound, and other animal food in proportion: bacon, 10d.; redherrings, 2d. each; butter, 10½d. a pound; coffee, 10d.; sugar, 5½d. to 7d.; potatoes, 2s. 6d. to 5s per 160lbs. or ½d. a pound—perhaps one of the cheapest things they have, unless it be sauer-kraut, made of barrelled cabbages.

We must thank Mr. Twining for the way in which he spent his holiday in Nassau. We are sadly behindhand in educational machinery.

VARIORUM.

"Murray's Railway Reading" will ultimately form a library in itself: it must be a paying concern; its issues continue so steadily to appear. That the public do esteem it we very well know: indeed, almost the only complaint we hear of it is, that too few works originate in it. This objection, however, has been repeatedly urged from different quarters, and, we think, ought to be considered by the publisher. True, many of the issues are of a higher order than any that are likely to be got off-hand to mere publishers' *order*; yet many of the public prefer new second rate matter to old *chef d'œuvres*, even though till now beyond their reach, over looking the fact that one main merit of Murray's railway reading consists in bringing within the reach of the general public many works of heretofore a more or less expensive order. We have now to notice two new issues. One is, the "Beauties of Byron," a selection adapted purposely for free circulation in the family circle, but which would have been all the more likely perhaps to attain its end, in keeping from view everything considered as offensive to sensitive minds, had the "Advertisement" to that end being addressed to "the old folks" through any other channel than the volume itself, for there it may only excite a curiosity which had better not have been roused by such announcement: since, if afterwards gratified in any underhand way, the reading of passages so marked or stamped with infamy as it were, would be likely to do ten times the injury which their insertion amongst the "beauties" themselves could have done to "the pure" in mind, to whom "all things are pure," unless impurity be instilled into them in just some such way, and by just such teaching as this. The "Beauties of Byron" here presented, comprise a portion of his lordship's prose as well as of his poetry, and must give a fair idea of the man as a writer in both instances. The next issue of the railway reading to be noticed, is a re issue of Wilson Croker's "History of the Guillotine," in the *Quarterly Review* of December, 1844, an interesting article, in which the author shows that the Guillotine was *not* invented by Dr. Guillotin or any other Frenchman, but was a mere plagiarism of the old Halifax Gibbet, and Scottish Maiden. The whole of this little shilling volume is of curious though painful interest. Messrs. Waterlow and Sons, of Parliament-street and London-wall, have "published by authority" a small volume on "The London Hackney Cab Fares and Distances," giving nearly 13,000 distances in miles and yards, measured and calculated under the superintendence of the commissioner of police for the City. Strange to say, however, useful though this volume cannot but be with such a list of distances, it is not generally available as a metropolitan guide, because every one of the calculations begins or ends in the City itself. Thus at once we can find the distance and the fare from Brompton to Aldersgate street or Lothbury, &c but not from Brompton to Charing-cross or to Regent-street, far less to any other point north or south of this one line between Brompton and the City. To City men, however, this little volume must be valuable, and our *metropolitan* police commissioners, we suppose, must authorize the publication of a similar work for the metropolis at large. *The National Miscellany* progresses steadily, and No. II. of Vol. II. is now before us. It contains, among other interesting matter, an article on "Our National Gallery and its Prospects," which, however, is scarcely adequate to its object; and an excellent one on "The National Drama." Messrs. Longman have just published a useful "Supple-

ment to the Cabinet Lawyer"—a popular digest of the laws of England, &c. It contains a digest of public acts of the session of 1853. Mr. Charles M. Willich, actuary and secretary to the University Life Assurance Society, has just had published by Messrs. Longman, the fourth edition of his "Income Tax Tables," showing the various duties payable under the 16 and 17 Vict. c. 34, which act is now coming into operation. The author has affixed a short account of the rates imposed by this act, with a Comparative Statement pointing out the principal features of the plans adopted by Mr. Pitt and Sir Robert Peel. By a memorandum inserted opposite Tables I. and II., the author gives ground for an assumption that the wealth of the nation has latterly increased in as great a ratio, if not in a greater, than the population. The same actuary has issued a Supplement to his popular tables on "The New Succession and Legacy Duty Tables, under the authority of 16 and 17 Vict. c. 51," which may be also had of Messrs. Longman, the publishers.

Mr. John Weale, Holborn, has published a well-illustrated catalogue of books on Architecture and Engineering, which has the novel and useful feature of an incorporated alphabetical list of the fellows and members of various societies connected with these pursuits, namely, the Institute of Architects, the Institution of Civil Engineers, the Architectural Association, the promoters of the Architectural Publication Society, and the Institution of Mechanical Engineers of Birmingham.

Miscellanea.

New Circular Machine for Cutting Metals.—A machine has recently been patented by Messrs. Tibley and Son, of Stalybridge, on a new principle, for cutting metal of any strength, it is said, in a circular form, the circles being almost mathematically correct, the edges not being rough or jagged, as under the old method. In arranging the materials to be cut, the cutters need not be displaced, nor need there be a hole drilled in the centre of the plate, as heretofore.

Materials in the Great Wall of China.—In a lecture on China, delivered at Bolton, the other day, Dr. Bowring said it had been calculated that if all the bricks, stones, and masonry of Great Britain were gathered together, they would not furnish materials enough for a work such as the Wall of China; and that all the buildings in London put together would not have made the towers and turrets which adorn it.

The File Trade.—The workmen of Messrs. Litton, Stubs, and Mason, of Warrington, were agreeably surprised the other day by an unsolicited intimation from their employers that they had resolved from that day to raise their wages ten per cent. as a mere act of justice in the present state of the trade.

Consumption of Gas according to Calibre of Street Mains.—It has been found on increasing the calibre of street mains that the street lamps before in use consumed about double the usual quantity of gas, or rather allowed it to escape unconsumed. In such cases those using meters should see that the service-pipe is not turned fully on, as the best way to escape a double charge for their gaslight.

Church Extension in Clerkenwell.—A committee, consisting of the Earl of Shaftesbury, the Hon. A. Kinnaird, M.P. the Hon. H. M. Villiers, and others, has been formed for promoting church extension in this densely-populated district. Her Majesty's commissioners for the subdivision of parishes have already recommended that at least two new churches should be built, and it is the intention of the committee to attempt the erection of three. The Bishop of London has contributed 50*l.* to the fund, and has promised to assist the committee to the utmost of his power. The Rev. Dr. Anthony Lefroy Courtenay, incumbent of St. James's Chapel, Pentonville, receives contributions in aid of this measure.

Designs for New Chapel at Barnsley.—The authorities connected with Salem Chapel, belonging to the Independents, at Barnsley, having offered a premium of 50*l.* for the best design for a new chapel, several designs have been lodged. The cost of the building is to be 4,000*l.*, one half of which sum was contributed by Mr. W. Shaw, of Portobello, near Wakefield.

Glass a "making a Point of it."—A correspondent suggests that a pinnacle of cut glass on the highest parts of a country church or mansion would often be both ornamental and interesting.

Cœur de Lion.—Preparations are in progress at Palace-yard for the equestrian statue of the warrior Richard, no longer, I presume, a representative of the Peace meeting of 1851. The site is not a good one, and is, I think, too near to Westminster Hall; but surely the statue ought not at any rate to be at right angles with the entrance. Is not this, although in a less degree, repeating the sin of the Hyde-park caricature, which latter still remains a sad and obnoxious instance of the bad taste and bad faith of the Whig Government, and of the indifference of Parliament in any matter of art? Will no member, now that the sole objection to such a step has ceased to exist, suggest its removal?—A Friend of Art.

Lecture on Barry's Paintings at the Society of Arts.—Mr. A. W. Hakewill gave a lecture last week, at Blagrove's Concert-rooms, on the paintings by James Barry, at the Society of Arts, illustrated by various drawings from the pictures. Mr. Hakewill adverted to the low state of art at the period of Barry's first becoming known; to his being sent to Rome by a kind patron; to the mighty strides Barry then made in his profession; and to the varied excellences of his works, which adorned the walls of the Great Room of the Society of Arts. The lecture deserved a larger audience than it found.

Damage by Fire to St. Michael's Church, Queenhithe.—On the 26th inst. during the destruction of a large warehouse and several houses in Upper Thames-street by fire, St. Michael's Church, Queenhithe, was seriously damaged, but fortunately the fire was confined to the belfry and steeple.

Free Exhibition at Gore-House.—An exhibition of works of the students of the Schools of Art in the elementary stages of instruction has been opened at Gore House, Kensington. The progress making is satisfactory. Works from thirty-nine schools are being exhibited in competition for prizes, and the comparative progress of the schools is made more clear by the method adopted, of placing side by side copies made in the different schools from one and the same example.

The Abbey Church, Malvern.—The votes of ratepayers called for on the question of repairs has resulted in a majority in favour of immediate procedure, of 294 against 50, on Sturges Bourne's Act, whereby voters have a plurality according to the value of their rateable property, and a numerical majority of 136 against 34. Lady Emily Foley, who is to repair the exterior and more ornamental parts of the tower, went from Stoke Edith to record her vote for the rate.

Worcester Architectural Society.—A society calling itself "The Worcester Diocesan Architectural Society," has just been established in that city, Lord Lyttelton being president. Its objects are said to be to promote the study of ecclesiastical architecture, antiquities, and design, by the collection of books, casts, drawings, &c. and the restoration of mutilated architectural remains within the diocese, and to furnish suggestions, so far as may be within its province, for improving the character of ecclesiastical edifices hereafter to be erected or restored.

The Gold Medal Award at the Royal Academy.—Having seen the students' architectural designs this year for the gold medal, I find I am not singular in my surprise at the selection. The fortunate one cannot complain, but I think it doubtful if one, at least, of the competitors might not with justice. The prize design is called Classical-Italian, with high pitch Gothic roofs introduced, a selected compound of French and Belgian châteaux. Academicians are, perhaps, becoming liberal, and will soon sanction innovations, or else this was selected because the design and drawing are so bad, that there could be no doubt the fortunate one had done it all himself, without the least possible forbidden advice or assistance. To mend architectural matters this year, the award of the travelling studentship, although fixed for December 8, is postponed until May next, no notice having been given to prevent the candidate who sent in exerting himself to the last.—Fairplay.

TENDERS

For building a villa residence for Mr. Benj. Gough, at Hornhill, near Faversham, Kent. Mr. A. F. Sprague, architect.

Sutton and Walter (Maidstone)	£2,165	0	0
Cosens (Canterbury)	2,003	0	0
Dawson (Faversham)	1,963	5	6
Ware (Faversham)	1,926	16	0
Judges (Boughton)	1,909	4	0
Redman (Faversham)	1,896	7	0

For additions and alteration to a warehouse in Clements-court, Wood-street, for Messrs. Grant, Brothers. Mr. James Tillott, architect. Quantities supplied by Mr. W. R. Gritten.

Mansfield and Son	£1,893	0	0
Hayne and Eyre	1,883	0	0
Laurence and Sons	1,842	0	0
Brass and Sons	1,793	0	0
Lindsay (accepted)	1,767	0	0

TO CORRESPONDENTS.

"J. A. C" (we cannot assist). "B." "My Friend." "W. H. T." "H. P." "A Smoke Hater." "D. K. E." "Messrs. C." "Z." (will appear). "Dr. B." "H. H." "G. J. R." "R. B." "F. B N." (the lecture was mentioned last week). "C. C. N." (thanks). "B. R." "T. B. L." "X." "W. G. B." (we shall be happy to see sketch).

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor;" all other communications should be addressed to the Editor, and *not* to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

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WANTED, an ENGAGEMENT as Clerk, Collector, or Foreman, by an industrious man of good address, with twenty-one years' experience in smiths' work, machinery, hydraulic works, hot-water apparatus, ranges, &c. and a good calculator.—Address, S. S. Office of "The Builder."

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WANTED, by a Youth who has been in the above business four years, a SITUATION as IMPROVER in a good house, where he could obtain instruction in graining and decorating.—Apply to E. WARNE, Emsworth, Hants.

TO CARPENTERS AND BUILDERS.

WANTED, by a Young Man, who has a thorough practical knowledge of his business, a SITUATION as WORKING FOREMAN, in a small shop. Country preferred. Address, A. B. 76, Seymour-place, Upper George-street, Edgeware-road.

TO ARCHITECTS AND BUILDERS.

AN experienced Surveyor, who has a portion of his time at present occupied, is desirous of employing it in measuring, estimating, and general business, for architects, builders, and others requiring occasional assistance.—Address, J. M. 4, Canonbury Cottages, Islington.

TO ENGINEERS, MACHINISTS, &c.

A MECHANICAL DRAUGHTSMAN and practical Engineer is desirous of a RE-ENGAGEMENT. Unexceptionable references can be given.—Address, X. Y. Z. Office of "The Builder."

TO ARCHITECTS.

A DRAUGHTSMAN, accustomed to fair working and perspective drawings, is open to an ENGAGEMENT.—Address, G. F. Office of "The Builder."

A BUILDER'S CLERK, 22 years of age, thoroughly conversant with the duties of the office, is desirous of an ENGAGEMENT. No objection to the country.—Address, A. M. Office of "The Builder."

TO CONTRACTORS AND BUILDERS.

AN Experienced General FOREMAN is in want of a SITUATION. Is a native of, or CLERK of WORKS. References undeniable.—Direct A. Z. 16, Isabella-street, Gibson-street, Lambeth.

TO ENGINEERS, SURVEYORS, AND ARCHITECTS.

THE Advertiser, aged 21, is desirous of meeting with an ENGAGEMENT in the ensuing spring. He has been for five years in the office of a Land Surveyor, Architect, and Valuer; is competent to survey, take levels, measure architects' works, or assist in quantities for estimates, prepare working drawings, and is a neat draughtsman.—Letters may be had of, and communications addressed to, Mr. SMALL, No. 48, Borough.

TODD'S PATENT METALLIC PROTOXIDE PAINT.

THE PATENT METALLIC PROTOXIDE PAINT now offered, has been found, after the most severe trials, to be peculiarly efficacious in preserving Iron from Oxidation, Wet, Dampness, and Masonry and Brickwork from dampness.

Applied to Iron it unites with it most intimately, forming a complete coating; so that the Iron protected, it will be found equal to the best galvanized Iron. Hence its great value to all Engineers and Iron Founders as an application to Iron Vessels, Iron Roofs, Plates and Water Pipes, &c. &c. It adheres firmly to Iron even at a red heat.

Many attempts have been made to discover a substitute for White Lead, that should possess its virtues, without partaking of its offensive character. This Paint is not affected by sulphuretted or carburetted hydrogen gas, bilge water, or indeed foul air of any kind: hence it is well adapted for the interior of Ships, Warehouses, Offices, Stabling, &c.; and from its total freedom from deleterious properties, it will be found of great value for painting the interior of Hospitals, Asylums, Unions, Gaols, and other Buildings which may require to be painted during occupation.

This Paint resists the action of the sun's rays, and also that of the sea air: it is therefore well suited for the Colonies and all tropical climates.

For Stuccoed Buildings it will be found to be effectual in preventing the discolourations formed by vegetation, and keeping out all dampness.

The Protoxide Paint, as at present produced, is a Pale Stone Colour; but it may be tinted with any other colour to suit the taste and purpose for which it may be required.

TESTIMONIALS.

"Prestmouth, Ceylon, and Dover Railways,
Locomotive Department, New Cross, Sept 2nd, 1844.

"Sir,—In reply to your request respecting the 'Patent Protoxide Paint,' I have much pleasure in stating that what has been used in this establishment has given much satisfaction, and I consider it the best composition of paint for iron-work, for which purpose I can strongly recommend it.

"I am, Sir, your obedient servant,
"BENJ. CUBITT."

"Regent's Canal Iron Works, Eagle-wharf-road, Dec. 5, 1845.

"Sir,—As it is always my wish to render justice to every one, as far as I can lay power to do, I have great pleasure in informing you, that I have very severely tested your 'Patent Protoxide Paint;' that the results are most satisfactory; and that I consider it a very valuable article for an Iron-founder. I have ordered it to be used with us wherever circumstances will allow us to do so. I will moreover, use it for all my own work, and wish I had known it somewhat earlier.

"I am, Sir, yours respectfully,
"HENRY GRISSELL,
"Pro H. and M. D. Grissell.

"P.S.—It must be good for Boilers."

"St. Kitts, August 30th, 1844.

"Gentlemen,—Having had some experience with Todd's Patent Paint for which your firm are Agents), I beg to state my unqualified approval of it. I have tried it against White Lead of the first quality, and at the end of seven or eight months find Todd's Paint fresh as when laid on, while the White Lead, owing to the excessive heat, may be rubbed off like chalk. It answers equally well on wood or iron, effectually preserving the latter from rust. I feel obliged by your quick attention to my further order by the 'Parrack Hall,' which ship we are daily expecting.

"I am, gentlemen, your obedient servant,
"(Signed) G. MOFFATT.

"Messrs. Davidson and Peter, Bishopsgate-street, London."

For terms, application to be made at the Offices of the Company, 12, Bishopsgate-street Within: or to the following Agents:—

Messrs. PITCHFORD, ISLAND LEAD WORKS, LIMEHOUSE ... } LONDON.
Messrs. G. and T. WALLIS, 64, LONG-ACRE ..... }
Messrs. D. and G. BRYMNER ..... GREENOCK.

JOHNS'S PATENT PERMANENT STUCCO WASH. STUCCO CEMENT, AND STUCCO PAINT.

JOHNS'S PERMANENT WASH, WITHOUT SIZE OR OTHER CORRUPTIBLE INGREDIENT, is now fully established. It has from all most PATERNALLY and INTERNALLY at some of the largest Hospitals and Asylums, and is acknowledged to be the most useful Coating Material in the trade, for its ADHESIVENESS, NON-ABSORBENCE, UNIFORMITY OF COLOUR, and APPLICABILITY to small or large surfaces. IT MAY BE EXPORTED TO ANY CLIMATE.

JOHNS'S STUCCO CEMENT. This Cement, which has been established many years, is now manufactured on such improved principles that its acknowledged advantages and its substitutes for INTERNAL as well as EXTERNAL purposes are unquestionable. It NEVER CRACKS, BLISTERS, or VEGETATES; has no Caustic qualities, becomes as hard as stone in a few days, when it may be painted or papered; may be cleaned with a brush and water, and will STAND THE TEST OF ANY CLIMATE.

JOHNS'S STUCCO PAINT. The merits of this Paint are so justly appreciated by the trade, for its ready affinity to Stucco, Brick, or other Rough surfaces, its durability, and great cheapness (it is composed of one equal part of lead paint, and two of the first importance to the public generally, AND WELL WORTH THE ATTENTION OF SHIPPERS AND EMIGRANTS.

Each Material in Casks of 1 to 5 cwt.

MANUFACTURERS,

PHILIP HARE and CO. 22, STEEL-YARD, UPPER THAMES-STREET.

HUBBUCK'S PATENT WHITE ZINC PAINT. The PERMANENT WHITE of the Ancients, hitherto confined by its cost to the use of the artist, is now, by Hubbuck's Patent, reduced to the price of White Lead.

The principal characteristics of HUBBUCK'S ZINC PAINT are—Its decided Health Beauty, and Economy.

Builders and Contractors find it Hubbuck's Paint the only one perfectly suitable for all their purposes; possessing the great desideratum of covering, combined with its fine substance as a primer, it works alone. Contractors effect a saving of 25 per cent. by using HUBBUCK'S ZINC PAINT.

HUBBUCK and SON feel it necessary a caution should be circulated against imitations of their Paint. These manufactures, containing frequently pernicious ingredients, are baneful to health and worthless in use, whilst the inexperience of these imitators in the production of pigments is evinced in every one by the coarse grainy appearance, but also by the [illegible] of body in their pretended whole—known Paint. The genuine article [illegible] and an impression be [illegible] pricked, to reference, in [illegible] the casks marked with the name of the originators, thus—

HUBBUCK.—LONDON.—PATENT.

Those not so marked, the reason may be inferred, had of THOMAS HUBBUCK and SON, Paint and Varnish Manufacturers, Upper East Smithfield (opposite the London Docks, London).

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE,
Manufacturers of

PATTINSON'S OXICHLORIDE of LEAD.

The Washington Chemical Company having, during the last year, established a Manufactory of the above valuable description of Lead, are now able to bring this article into general use, and to recommend it to the Public as one that will not only be found to answer every purpose for which White Lead is now employed, but will, in many cases, be preferred to it, from its superior quality, and from the circumstance that it is not affected by sulphuretted or carburetted hydrogen gas, and consequently will not change colour in foul air, as White Lead frequently does.

The Oxichloride of Lead is a chemical compound of the protoxide of Lead and the chloride of Lead, it being well known that neither White Lead nor the chemical combination of its constituents, Carbonate of Lead and Oxide of Lead, can be used in any way, and finally take a place as a colouring matter in the manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical compound of the protoxide of Lead and the chloride of Lead, and is the result of many years' experiments, carried on with great regularity, and it is now considered by the Company as having brought this article into such a state of perfection, that all inferior kinds and the public generally that shall not use it, will be condemned for using an article of inferior quality. It must not be supposed that the Oxichloride of Lead is a new discovery, but a manufacture

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